

An Analysis of Polysemy in English for Science and Technology Translation

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The monosemy term is one of the important features of English for Science and Technology (EST), but in the process of usage, the monosemy will often be changed gradually, and polysemy is an important factor that influences the term's monosemy. This paper analyzes the internal and external causes of polysemy in EST translation from the perspective of translation practice, and further elaborates on polysemy with specific translation examples. Finally, some preliminary suggestions for the preferred correct meaning are put forward.

Keywords: English for Science and Technology, polysemy, word meaning preference

Introduction

Generally speaking, English can be divided into English for General Purposes (EGP) and English for Special Purposes (ESP). English for Science and Technology (EST) studies is an important part of ESP, and the existence of polysemy is a major obstacle in the EST translation. In the complex English for Science and Technology vocabulary system, although there are many monosemous words, polysemous words appear more frequently. Taking *the English-Chinese Technical Dictionary* as an example, it contains more than 75,000 words, of which polysemous words (two or more) account for about 15% of the total vocabulary, and these words are often the most frequently used and widely used words in scientific and technological languages (Gao, 2013). Based on the specific translation practice, this paper analyzes the forms and factors of polysemy, and offers some countermeasures, which can bring some help to EST translators.

The Definition of Polysemy and Examples Analysis

The Definition of Polysemy

For a long time, there is no definite and complete expression of polysemy. If a single word has more than one meaning, then this phenomenon can be called polysemy. Generally speaking, words related to semantics or etymology between multiple meanings are regarded as polysemous (Fromkin & Rodman, 1998). The following will further explain the phenomenon of polysemy through some translation examples.

Example Analysis

Taking the word "reproduction" as an example, the original meaning is "重现，再生产，复制品".

Eg. 1: The reproduction is almost as good as the original.

Translation: 这件复制品几乎与原作无异。

The word can also be used in other domains. In psychology, it means “再生作用”.

Eg. 2: When the mental energy to suppress a certain “level” to the reproduction of psychiatric symptoms as a “catharsis” of a breakthrough.

Translation: 当心理压抑的能量达到一定的“度”，就会以精神症状的再生作用作为“宣泄”的突破口。

In biology, it can be understood as “生殖、繁殖”.

Eg. 3: It's evolved due to survival and reproduction.

Translation: 它通过生存和繁殖进化。

Another example is the word “pressure”, whose original meaning is “压力”, but its meaning can also change in EST. The following two meanings are used in physics, but the two concepts are completely different:

Denoting the force acting on the contact surface of two objects, or the force acting vertically on the surface of the object, the word “pressure” mean “压力”.

Eg. 4: The piston moved by steam pressure.

Translation: 活塞在蒸汽压力下运动。

Indicating the pressure on the unit area of an object, the word means “压强”.

Eg. 4: Gas can be fed to the turbines at a pressure of around 250 psi.

Translation: 燃气可以约每平方英寸250磅的压强注入燃气缸。

The third example is “measure”, the original meaning is “测量，衡量”.

Eg. 5: We measured the distance between the two trees.

Translation: 我们测量了两棵树之间的距离。

In the development and evolution of English for science and technology, the word has other meanings, which means “行宽，页宽” in the printing industry.

Eg. 6: We use measure means the width of a full line of type or print.

Translation: 我们用行宽来表示一种类型或一种印刷体的整行宽度。

In metrology, it means “计量制，计量标准”.

Eg. 7: The original dimensions were in imperial measure.

Translation: 原来的尺寸采用的是英制计量标准。

The Main Factors of Polysemy

External Factors

The external causes mainly refer to the social, psychological, translator factors, and so on, among which the social factor is the most important factor.

Social factors. “Words are changing all the time, and absolute invariance does not exist; any part of the language will change” (Saussure, 1982, p. 194). With the continuous progress of society, the language system, as a significant representative of the achievements of spiritual civilization, is also gradually developing and perfecting. Words with a single meaning are bound to be endowed with new meanings in order to adapt to the new environment and new ideas. For example, the word “mouth” originally means “口，嘴巴”. With the development of the irrigation industry of the river system and the influence of the meaning, the word “head” refers to “源头” and the word “mouth” can also means “河口”.

Psychological factors. Although EST belongs to the rigorous style, it does not mean that some EST words do not express people's subjective psychology. The British and Americans love hunting, so they love dogs. In their views, dog is a kind of intelligent and alert animal, so people also use "watchdog" to refer to "监控器" or "监控装置". Because the psychological feelings brought by these two things are similar.

Internal Factors

The internal reasons are mostly reflected in the contradiction between words and words, as well as the interrelation between words and context.

The contradiction between words and words. With the continuous development of science and technology, various fields and subjects blend with each other, which makes a word may appear in different disciplines simultaneously. However, in people's understanding, the meaning of this word is unified. Here, taking the word "function" as an example, in a general sense, the meaning of the word is "功能". In fact, when it is used to refer to the function of organs of the body, it correctly means "官能". When it is used to refer to the sex of something, the explanation is "功能" (Wang & Leng, 2017). But in reality, people often confuse the meaning and usage.

The interrelation between words and context. The meaning of context expresses the occasion of the used words. Without context, there is no semantics. The concept of context comes from the human linguist Malinowski, who believes that the meaning of language cannot be determined entirely by itself but by context (Leng, 2014). Firth, the founder of the modern English language school, also pointed out that "every word used in a new context is a new word" (Peng, 2008, p. 1). In EST translation, context can affect the accuracy and completeness of meaning expression and the consistency of the translation. The author uses the following text as an example to analyze the effect of context on words.

Eg. 8: Genetic modification involves the insertion or deletion of genes. In the process of cisgenesis, [...]. In the process of transgenesis, [...].

Translation: 基因改造涉及基因插入或基因缺失。在同源转基因过程中[...]。在转基因作用过程中, [...]。

Analysis: "Transgenesis" is defined as "转基因作用" in the dictionary, but through the analysis of this sentence, we can see that there is a corresponding contrast relationship between "In the process of transgenesis" and "In the process of cisgenesis". The former is interpreted as "同源转基因", Then, the interpretation of "transgenesis" here changes with the function of context, and the original meaning of the term should be interpreted as "异源转基因".

The Selection of Correct Word Meaning

Too much polysemy often leads to confusion in the use of terms in translation. Therefore, it is necessary to compare the word meaning according to different situations so as to select the correct word meaning. According to the above situation, the author summarizes the following methods to optimize the correct meaning of words.

The Method of Selecting the Meaning of Words With External Factors

In view of the polysemy caused by external factors, we should pay more attention to the actual situation and pay attention to the new terms in the field. As a translator, he should strive to learn cutting-edge translation skills and improve his cognitive ability. If the meaning of the word is not well understood, it may lead to

mistranslation or Zhang Guan Li Dai of terms in different fields. Therefore, when translating, the translator should follow the principle of standardization. On the premise of reproducing the content and form, the translator should regard the standardization of the target language as the standard of the expression of the target language terms. Standardization is one of the essential features of terminology, and only the translated terms that conform to the norms of the target language can better accomplish the mission of information transmission (Huang, Fang, & Li, 2013). The translator should take the professional terms stipulated by the National Committee of Scientific and Technological terms as the standard, and on this basis, fully consider which meaning of the word is closer to the actual meaning of the original, so as to prevent the word from failing to reach its meaning.

The Method of Selecting the Meaning of Words With Internal Factors

In view of the polysemy caused by internal causes, we should analyze it according to the specific problems. In view of the problems between words, they should be named according to disciplines and domain categories. Generally speaking, a word has different meanings, so it should appear in different disciplines and apply to different contexts. We can define the concepts of the meanings that appear in different disciplines and fields, specify their professional categories, and then explain the meaning of words. In view of the relationship between words and context, in EST, the meaning of words is mostly flexible, even if many words are clear about their part of speech, application field, domains category, and so on; however, it is still necessary for the translator to choose the correct and appropriate meaning from several or dozens of interpretations. Here, a translator is required to establish a sense of difference, text awareness, and understand the logical relations of the original text, so as to make a reasonable and correct judgment.

Conclusion

Summing up the above discussion, there are various factors for polysemy. The author lists some factors just based on own translation practice. In a word, how to correctly deal with polysemy and optimize the meaning of the word is the problem that we should consider. Polysemy is very common in EST translation, the study of this can also be applied to other semantic phenomena of EST to analyze and compare, and then summarize the translation methods, which is conducive to the deepening and development of EST.

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