

The Application of Newmark's Text Typology Theory in Medical Translation

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Abstract

In recent years, with the rapid development of economic globalization proceeding, the medical exchanges among international countries have increasingly deepened, which further makes the significance of medical translation become more and more prominent. In this paper, a detailed introduction to Newmark's Text Typology Theory and informative text was made. Then, from the perspective of Newmark's Text Typology Theory, analyses were conducted on the lexical and syntactic features of medical text as an informational text and related translation methods were applied to medical translation. With the application of this theory, it was concluded that the practicality and specialty of medical translation were greatly improved, further providing some valuable references for the follow-up medical translation and enabling medicine to better serve the development of the medical field and benefit human health welfare.

Keywords

Newmark's Text Typology, Informative Text, Medical Translation

1. Introduction

Economic globalization drives countries to proceed forward in various aspects, which simultaneously extends the wide range of international medical exchanges and cooperation. For example, the implementation of the Africa Assistance Plan has helped African people make important breakthroughs in medical construction. Besides, in the early period of COVID-19, Chinese medical teams have conducted experience sharing and communication and have provided supporting guidance for foreign countries on the issue of epidemic prevention, control, and treatment. Consequently, with the deepening of such medical communication, there has appeared pouring emergence of the exchange of medical technique, expe-

rience, academic reports, and conferences, etc. Medical text, as an essential medium in this process, its accurate and applicable translation also proves to be significant. Good medical translation can not only contribute to the mutual learning of advanced medical knowledge and concept from other countries, but also promote the spread and communication of medical techniques at home and abroad. Meanwhile, medical translation of high quality can also inject new vitality into the development of the medical field, which can make some contribution to mankind's health.

The British translation theorist Newmark divided texts into three types, and pointed out that different text types should adopt different translation strategies. Text Typology Theory will help the translators objectively analyze text function, and understand the different features of the language features of text with different functions, which is conducive to translators' adopting proper translation strategies. According to Newmark's Text Typology Theory and the analysis of medical text, the texts needed to be translated are identified as informative texts. Accordingly, from the perspective of Newmark's Text Typology Theory, this paper analyzes the characteristics of medical informative text at lexical and syntactic levels, and discusses the practicability and guiding significance of Newmark's Text Typology Theory in medical translation.

2. Introduction to Newmark's Text Typology Theory and Informative Text

English translation theorist Peter Newmark believes that translation is essentially a translation of text, so text is the first problem to be faced in the process of translation. According to German linguist Buhler's tripartite theory of language functions (expressive function, informative function, and vocative function), Newmark divided texts into expressive text, informative text, and vocative text in *A Textbook of Translation*. However, two or even three types may overlap in the same text. When analyzing a text, the translator should first judge which is the main type according to its dominant function so as to determine the type of the text. **Table 1** shows Newmark's classification of text types and corresponding translation features.

According to Newmark's opinion, informative text mainly expresses the content objectively with the external situation as its core, that is, the reality outside language. It's a kind of text that focuses on the content. Informative texts mainly refers to those without personal characteristics, such as texts in science and technology, business, economic and other fields, textbooks, academic reports, newspaper articles, scientific papers, graduation theses, conference records and so on (Peter, 1989). Accordingly, in order to convey the information completely and accurately, such kinds of informative texts tend to contain many professional vocabularies, terms and long sentence structures. Similarly, medical texts, aiming at explaining medical knowledge to the public in an authentic way, inevitably contain many medical terms and complex sentences. This perfectly matches the characteristics of informative texts (Li & Li, 2020). Therefore, as a typical

Table 1. Newmark's classification of text types and corresponding translation features.

Text type	expressive	informative	vocative
Text core	source text and author	truth	reader
Language orientation	source language	target language	target language
Topic style	personal	subjective	imperative and persuasive
Language type	rhetorical	descriptive	imperative and persuasive
Author's status	sacred	anonymous	anonymous
Translation method	literal translation	equivalent translation	equivalent production

informative text, medical texts was finally chosen as the research subject and all the examples were abstracted from the author's medical translation practice.

3. The Features of Medical Text

Medical English text belongs to the category of EST (English for science and technology). Hence, unlike general English texts with emotional factors, EST texts are more purposeful in accurately expressing objective facts through logical thinking. In addition, the professional field of "medicine" makes medical English texts more rigorous in language (Xue, 2021). The lexical and syntactic features of medical English texts are analyzed as follows.

3.1. Features at Lexical Level

Medicine is closely combined with technology, and the modernization of medical technology provides modern medicine with new means and methods. Therefore, the words of medical English texts tend to be accurate, rigorous and professional, including a large number of specialized words and terms unique to the medical field (Xue, 2021).

3.1.1. Derivative Phenomenon

The morphology classifies words mainly into simple roots, derivatives and compounds. From the perspective of lexical features, there are many derivatives of medical words, often with prefixes and suffixes, such as: "de-generative 恶化的", "bio-synthesis 生物合成", "anti-oxidant 抗氧化剂", "humectant 湿润剂", "formulation 配方", "dermatology 皮肤病学", etc. In **Table 2**, there are some common affixes of medical terms that often appear in medical English texts.

3.1.2. Polysemy Phenomenon

At lexical level, in addition to the fact that there are many derived words, there also exist polysemy phenomena. Polysemy means that a word has more than one literal meaning, which differs under different contexts. Some words and terms

Table 2. Common affixes of medical terms.

Affix	Meaning	Word	Chinese meaning
de-	opposite	degenerative	恶化的
bio-	biology	biosynthesis	生物合成
anti-	against	antioxidant	抗氧化剂
mal-	not good	malnutrition	营养不良
-logy	...subject	dermology	皮肤病学
-tion	behavior	formulation	配方
-itis	inflammation	arthritis	关节炎

generally have a fixed and special meaning in medical field, the translation of which shouldn't be refined literally. Instead, it is necessary to truly understand their special meaning in the medical field. For instance, the words and terms "topical" base (外用碱基), dermatological "formulations" (皮肤配方), route of "administration" (用药途径), cause "irritation" (引起刺激) and others, if translated accordingly to their literal meaning respectively as "话题的", "制定", "行政", "生气", will be bound to cause complete distortion of the original meaning in the confined medical context.

3.2. Features at Syntactic Level

As medical English text belongs to one kind of EST text, which emphasizes the expression of information and describes objective facts or phenomena with things and research objects as the main language. Besides, this kind of text highlights objectivity and rigor while reducing subjectivity. What's more, medicine is a discipline that emphasizes analysis and research. In order to present the logical relationship between things or research objects, compound sentences are often used in medical English texts.

Example 1:

Various physical and chemical factors **are involved** in the formulation of topical emulsion or cream preparations.

Example 2:

Vit. C, the most plentiful antioxidant in human skin, forms a part of the complex group of enzymatic and non-enzymatic antioxidants **that** co-exist to protect the skin from reactive oxygen species (ROS).

Analysis: As can be seen from the above two examples, medical English texts focus on the objective conveying of information and content, so passive voices and compound sentences are mostly used. As highlighted in example 1 and example 2, the passive voice "are involved" and attributive clause "that..." are presented, respectively. In this way, the objectivity and internal logical relationship of the research object can be better highlighted.

According to the introduction to Newmark's Text Type Theory and through

the analysis of the features of medical text, medical English text is determined to be informative text, which focuses on the accurate transmission of medical knowledge and information. In the process of translation, the first priority is to accurately convey the original information and adopt flexible translation methods in combination with the text features of medical English. Therefore, Newmark's Text Typology Theory has certain guiding significance for the translation of medical English texts.

4. Translation Strategies

Newmark pointed out that different text should adopt different translation method (Peter, 1988). In view of different text type, Newmark put forward with eight translation methods, which are "word-for-word translation, literal translation, faithful translation, semantic translation, adaptation, free translation, idiomatic translation and communicative translation" (Peter, 1981). Among the eight translation methods mentioned above, the former four focus on and emphasize the source language, while the latter four focus on and emphasize the target language (Peter, 1988), just as clearly listed in following Table 3.

Newmark also thought that semantic translation and communicative translation are the two main translation methods. Meanwhile, Newmark believed that semantic translation is used for expressive texts, while communicative translation for informative and vocative texts (Peter, 1988).

Therefore, as medical informative text, it aims to convey information to the target language readers, and it pays more attention to the communicative function than the language itself, so the communicative translation method is more suitable for the translation of medical English text (Peter, 2001). Thus, the translator should fully present the truth and accuracy of the information content in the source text in the target language. Besides, translators should emphasize the transmission of information, orient at the target language, and pay attention to the effectiveness and accuracy of communication. This article will mainly discuss the guiding significance of communicative translation strategies applied in medical informative texts.

4.1. The Translation at Lexical Level

As for informative text, there exist many professional words, the accurate translation

Table 3. Eight translation methods of Newmark.

SL emphasis	TL emphasis
Word-for-word translation	Adaptation
Literal translation	Free translation
Faithful translation	Idiomatic translation
Semantic translation	Communicative translation

of which is the basis for ensuring the high quality of the translation. In terms of word translation, the author adopts flexible translation methods based on the analysis of word features in medical English texts.

4.1.1. Translation according to Affixes

According to the analysis of medical texts, compared with general English text, medical English text is very different in terms of words and phrases. The typical difference lies in the fact that medical English words are more complex, often with prefixes and suffixes. At the same time, informative texts focus on the transmission of information, and the accuracy and rigor of vocabulary are particularly important. Therefore, in the process of translation, the features of medical English vocabulary should be carefully analyzed, the meaning of prefixes and suffixes should be correctly understood, and the accuracy of medical English vocabulary translation should be highlighted (Jiang, 2021).

For example, in medical English texts, there appear such typical words with affixes as “antioxidant 抗氧化剂”, “Pharmaceutics 药剂学”, “microencapsulation 微星胶囊”, “ascorbate 抗坏血酸盐”, and “formulations 配方”, etc. In the E-C translation process, the meanings of such affixes as “anti-”, “-ant”, “pharma-”, “micro-”, “as-”, “-tion” in these words should be accurately understood first so as to ensure the accuracy and rigor of translation of medical words.

4.1.2. Free Translation

Free translation refers to the translation method according to the general idea and context of the original text rather than word-for-word translation. Some medical English vocabularies in different contexts have different meanings. As for the polysemy phenomenon, the literal translation of these words will distort the meaning of the original text. Therefore, in view of the features of medical English vocabularies, free translation should be adopted in combination with the medical context so as to fully understand its true meaning in medical field.

Example 1:

ST: The choice of emulgent to be used would depend on factors such as its emulsifying ability, route of **administration**, and toxicity.

TT: 乳化剂的选择取决于乳化剂的乳化能力、用药途径和毒性等因素。

Analysis: In example 1, the literal meaning of “administration” in the source text means “行政” in Chinese. If translated literally, the translation is completely inconsistent with the medical context. Therefore, free translation was adopted and the word “administration” was translated into “用药”, as presented in the Chinese target text.

Example 2:

ST: Even in the normal intact skin with a pH of 5.5, the application of such alkaline materials can cause **irritation**.

TT: 即使是 pH 值为 5.5 的正常完好皮肤, 使用这种碱性物质也会引起刺激。

Analysis: In example 2, the original and literal meaning of the word “irritation” in the source text is “生气, 愤怒” in Chinese. Obviously, the literal meaning

is completely out of context. Therefore, free translation should be flexibly used and translate it into “刺激” in Chinese to make the target language smooth and readable, as presented in the Chinese target text.

4.2. The Translation at Syntactic Level

As informative text, medical English text is characteristic of being target language-oriented, which objectively conveys the original information. Besides, there is certain logic between sentences. Therefore, there are many passive voices and compound sentences in medical English texts. In the process of translation, attention should be paid to following the principles that informative texts are target language-oriented and emphasize the transmission of information. Therefore, change of the voice and division should be used flexibly to make the source language follow the expression habits of the target language.

4.2.1. Change of the Voice

Change of the voice refers to the translation method of achieving the change of the active or passive voice in different source text in accordance with the language feature or expression standard of the target text. In the E-C translation process, the English passive voice is usually transformed into the Chinese active voice. On the one hand, as informative text, medical English text tends to use passive voice in order to reflect the objectivity of the facts or phenomena described. At the same time, due to the differences between English and Chinese, English is a hypotaxis language and Chinese is a parataxis language, so in the process of E-C translation, voice should be flexibly changed to make the translation more consistent with the expression habits of the target language.

Example 1:

ST: The use of topical ascorbic acid **is** therefore **favoured** in the practice of dermatology.

TT: 因此在皮肤科的实践中，更**倾向于**使用外用抗坏血酸。

Analysis: In example 1, in order to convey information objectively, passive voice “is favored” is used in the English source text with the research object “topical ascorbic acid” serving as the subject of the whole sentence. However, owing to the language difference between English and Chinese, English tends to emphasize the object while Chinese tends to highlight the subject. Thus, the passive voice “is favored” in the English source text was translated into the active voice “倾向于” in the Chinese target text, which makes the translations more in line with the expression habits of target Chinese language.

Example 2:

ST: Effect of some physical properties such as viscosity and dielectric constant on the stability of ascorbic acid in emulsions **has also been investigated**.

TT: 还**研究**了一些物理性质如粘度和介电常数对乳液中抗坏血酸稳定性的影响。

Analysis: In example 2, passive voice “have also been investigated” in the English source text is applied to objectively highlight the objects of study. In or-

der to make the translation conform to the expression habits of the target Chinese language, the passive voice “has also been investigated” in the English source text was translated into the active voice “研究” in the Chinese target text.

4.2.2. Division

Division refers to the translation method of dividing the long and complex sentence in the source text into several shorter sentences in the target text in accordance with the actual meaning of the source text. From the features of informative texts such as medical English, there are many long and complex sentences in order to fully express the objective information, present rigorous structure and highlight the logical relationship between research objects. However, informative text focuses on the target language, so it is flexible to adopt division in the process of E-C translation, carefully analyze the logical relationship between sentence components, and accurately find out the main stem so as to avoid translation deviation and unreadability.

Example 1:

ST: Viscosity of the medium is an important factor **that** should be considered for the purpose of ascorbic acid stability, **as** higher viscosity formulations have shown some degree of protection.

TT: 介质的粘度是抗坏血酸稳定性研究中应考虑的一个重要因素，因为高粘度制剂已显示一定程度的保护作用。

Analysis: As can be seen in example 1, the English source text is a long compound sentence with two subordinate clauses. The “that” clause is an attributive clause modifying the antecedent “factor” while the “as” clause serves as the adverbial of reason of the whole sentence. Compound sentences are often used in English texts to convey information completely and to ensure logical relations between languages. Meanwhile, English is a hypotaxis language, focusing on the presentation of form. On the contrary, Chinese is a parataxis language, focusing on the transmission of meaning. Therefore, in the process of E-C translation, in order to make the translation conform to the language expression habits of Chinese, the translator should carefully analyze the logical relations between the components and adopt division to divide the long and compound sentences into short sentences, making the translation smooth and readable, as is presented in the target text.

Example 2:

ST: Ultraviolet radiation generates ROS **which** produce some harmful effects on the skin, including photocarcinoma and photoaging.

TT: 紫外线辐射产生活性氧，对皮肤产生一些有害影响，包括光癌和光老化。

Analysis: As can be seen in example 2, the English source text is a compound sentence consisting of one attributive clause and a post-attributive component. The “which” clause serving as the attributive modifies the antecedent “ROS” and the present participle “including” is the post attributive modifying the antecedent “effects”. The use of clauses and participle fully embodies the logical features of

informative texts. In the E-C translation process, in order to conform to the expression standard of Chinese paratactic language, the flexible division was adopted to make sentences more readable. Just as presented in the target text, the long compound sentence in the source text was divided into several short parts so as to convey the information clearly and acceptably in Chinese thinking habits.

5. Conclusion

To sum up, medical English serves as an important medium for international medical communication and cooperation, and good translation of medical English texts plays a crucial role in the development of the medical field and human health. At the same time, the analysis of text types helps translators to adopt relatively appropriate translation strategies, contributing to successful translation of high quality. Guided by Newmark's Text Typology Theory, it proves that analysis of the text type of medical English at both lexical level and syntactic level can not only help translators to better recognize and grasp the features of medical English words and terms, but also make the translator better analyze and understand the medical English, thus providing certain guidance of flexible translation methods, further making the translation more professional and practical. In the long term, this can better promote the dissemination and exchange of medical knowledge for the benefit of human life and health.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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