

Effective Application of Computer-Aided Translation Software in Medical Literature Translation in the Era of Big Data

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Abstract: The progress of science and technology has brought great convenience to people's life and work. In the era of big data, computer-aided technology has been applied in many fields. For the field of translation, computer-aided translation software plays a very significant role. Especially for the translation of professional texts, because of its professional vocabulary and complex sentence patterns, computer-aided translation software has obvious advantages. With the increasingly frequent medical exchanges in the international community, medical literature translation has brought great challenges to many medical workers, and the application of computer-aided software has brought great convenience to them. This paper briefly introduces the computer-aided translation software, analyzes the characteristics of medical English translation, discusses the effective application of computer-aided translation software in medical literature translation, and puts forward its advantages and disadvantages, so as to provide reference for medical workers.

1. Introduction

With the deepening of the global integration process, international medical exchanges are increasingly close. Medical technology is developing, and new drugs, diagnosis and treatment technologies are constantly emerging. In this context, China should not only translate and study foreign medical documents, but also translate the major medical achievements in China into English and push to the world. All of these greatly increase the demand for medical literature translation. In the big data era, computer technology has developed rapidly. Computer-aided translation software plays an increasingly significant role in the translation of medical documents.

2. Computer-Aided Translation Software

Computer-aided translation software belongs to a narrow sense of CAT (computer-aided translation) technology, using translation memory matching technology to promote translation efficiency. Compared with manual translation, software translation has greater advantages. It has powerful term management function and a memory system, so that it can standardize the translated sentences by the term management system, greatly improving the accuracy and professionalism of translation. The common CAT software includes foreign memoQ, SDL Trados and domestic Snowman CAT. Take memoQ as an example. It is a computer-aided translation software developed by Kilray company in Hungary, having certain market influence. It not only has a basic translation memory, but also has powerful network search function, audit and proofreading function ^[3].

3. Characteristics of Translation of English Medical Literature

Medical literature is a significant scientific and technological style, which refers to all medical related materials with reference value, including books, journals, monographs, etc. It has very great medical value and strong professionalism. Therefore, the translation requirements of medical literature are also very high. It has the following characteristics.

3.1 Massive Professional Vocabulary and Abbreviations

As medicine is highly specialized, it is inevitable that there will be a large number of medical vocabularies. Compared with daily English, medical English has more obvious professional characteristics, because 75% of the professional vocabularies in medical English come from Latin, Greek, etc., rather than ordinary daily English. This brings more difficulties to medical English translation. In addition, abbreviations are also very common in medical English, and the specific words behind these abbreviations need to be fully analyzed in combination with context.

3.2 More Passive Voice

Due to the language and cultural differences between Chinese and English, there are more passive voice in medical English, which need to be changed into Chinese active voice in translation to adapt to Chinese language habits.^[2]

3.3 Many Long Sentences

In medical English, there are many long sentences, and most of them are coordinate sentences and compound sentences. For example, “Among all these, with the exception of water, sugar, fat and protein account for the greater part in quantity, and therefore, they are also called the three major nutritive substances.”

4. Effective Application of Computer-Aided Translation Software in Medical Literature Translation

Before the advent of computer-aided translation software, people could only read a large number of references and dictionaries repeatedly to ensure the accuracy of translation. It took a lot of time and energy to revise the medical literature translation manuscript over and over again. With the advent of big data era, computer-aided translation software has effectively improved the speed and quality of medical literature translation. Take memoQ as an example, it should be used as follows.

4.1 Preparations Before Translation

Before the translation of medical literature, firstly, it is necessary to input the text into the memoQ software, create a new project, open the translation memory and project term bank, and directly import the text to be translated. Because of the excellent term management function of memoQ, compared with the manual translation, the software can provide a variety of term references in the translation, greatly saving the time of manual translation to search for terms, and effectively ensuring the consistency of medical terms.

4.2 Translation Process

After completing preparation work before translation, the text on the project home page can be opened for translation. The memoQ software can automatically segment long sentences. If the segmentation is unreasonable, too long or too short, the translator can operate to readjust the length structure of sentences. The translation box also has editing function. After the translation of each sentence, the translator needs to click to confirm, then save it, and finally store it in the memory. Memory is the core content of memoQ. With the increase of translation content, the memory will store more content. In addition, the software also provides online translation memory plug-ins for translators for reference. However, due to the professional characteristics of medical literature, online translation memory can't be used as the final translation standard. Translators also need to constantly improve and enrich the medical translation memory to make it play more functions and promote the quality of translation.

In addition, corpus is also a significant function of memoQ software. Translators can choose to add monolingual text or bilingual text according to the needs of translation, and bilingual text can be imported into translation memory. At the same time, corpus of memoQ can also provide web search function for translators to search medical terms online. All operations can be realized in this software without opening another browser, which greatly improves the efficiency of translation and

brings convenience to translators.

4.3 Automatic Proofreading after Translation

The review after translation is equally significant. Traditional manual translation requires translators to check the errors repeatedly with their naked eyes. It not only costs a lot of time and energy, but also is difficult to ensure the final accuracy. The software, memoQ, has the function of automatic proofreading. By using CAT tool, it can recognize all the number errors and punctuation errors in the process of translation. Clicking the QA (quality assurance) button in the software of memoQ will point out a series of errors in the translation, and the translators can modify them on this basis, which greatly saves the time of proofreading. After the modification, the final translated documents can be exported to bilingual format for medical professionals to check ^[1].

5. Analysis on Advantages and Disadvantages of Application of Computer-Aided Translation Software in Medical Literature Translation

Under the background of big data era, computer-aided translation software has been widely used in medical literature translation, playing a huge role. Compared with traditional manual translation, it has certain advantages, but there are also some disadvantages. The specific performance is as follows.

5.1 Advantages

Firstly, computer-aided translation software can provide a large number of medical vocabularies for translators. The translation software itself is an electronic dictionary, and with the continuous expansion of translation memory, it has more and more professional vocabulary, greatly saving the time for translators to manually read the dictionary. Secondly, it can provide full-text translation. The memory of translation software stores a large amount of content, so it can automatically match the previously translated sentences with the memory, and quickly present the translated text. Finally, it can greatly increase the accuracy of translation. Translation software will not be affected by human factors such as inattention and carelessness. Its translation results are objective and accurate. Software translation can effectively improve the accuracy of translation, and with the increasing of translation content, the accuracy of translation will continue to improve.

5.2 Disadvantages

Due to the cultural differences between Chinese and foreign languages, the machine does not have the subjective judgment of different language habits. It can only mechanically translate words or sentences one by one, and it is hard to ensure the integrity and smoothness of sentence structure. Moreover, many English sentences are ambiguous, so it is hard for the machine to make accurate judgment. Therefore, although computer-aided translation software has many functions, it is still difficult to completely replace manual translation.

Generally speaking, translation software is suitable for the following situations. First, users need to know the general idea of the whole document quickly. Most of the content can be translated accurately by using translation software, and the general meaning of the document can be judged by the translated content, so as to provide reference for users. Second, it is used to realize the medical communication with foreign experts. The two parties can express general ideas through translation software, and there is no need to organize the language accurately and it does not affect the meaning expression. The two parties can understand the meaning expressed by each other. However, it is not enough to rely solely on translation software for some monographs that require high translation quality. Translators need to make corresponding preparations and later revisions to make up for the deficiencies in translation software.

6. Conclusion

With the advent of big data era, great changes have taken place in many fields. The application

of computer-aided translation software in medical literature translation plays a very significant role in promoting the medical technology. However, due to the limitations of translation software, current translation software is hard to completely replace manual translation. Therefore, it is necessary to strengthen the research in this field, continuously improve computer technology, optimize the function of translation software, provide more help for medical literature translation, and constantly improve the speed and quality of translation to play a great role in medical field.

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