On The Auxiliary Role of Computer and Network in Japanese Translation

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Abstract. In recent years, with the rapid development of information technology, computer-aided translation system has gradually entered people's vision. With its advantages of high efficiency and low cost, it has attracted much attention in many linguistic fields. With the development of the international era, people are no longer satisfied with artificial Japanese translation, they prefer to use computer-aided translation system. If we can't know the culture of Japan, artificial translation can't make people understand the real meaning of Japanese sentences. However, the computer with huge information storage can solve this problem. This paper includes systematic summary of the computer-aided system and the analysis of the affect of computer-aided in the process of Japanese translation.

Keywords: Computer and Network, Japanese Translation, Assistant

1. Introduction
In the process of learning Japanese, we should not only understand the meaning of Japanese words or sentences, but also know about them in terms of regions[1]. When we translate Japanese into Chinese, we should pay more attention to the semantic problems of the language translated from Japanese in different cultures. If we only use artificial translation, it's difficult to express the inner meaning of Japanese. So when we are teaching Japanese translation, we should encourage students to translate Japanese with computer system[2]. We must make readers understand the semantics of Japanese expression more easily.

With the rapid development of economic globalization, it has become an important issue in the field of linguistics on how to effectively use modern equipment to eliminate language barriers in different countries[3]. However, with the development of computer-aided translation technology, the computer-aided Japanese translation model has gradually formed.

2. A systematic summary of computer-aided translation technology
In ancient Greece, people began to dream that they could use a machine to recognize and translate multiple languages one day. In 1954, IBM company and Georgetown University worked together in order to achieve the ancient Greek dream. As a result, the world's first language translator “IBM-701” was finished, but it can only be translated between English and Russian. However, people's computer technology was relatively backward at that time, so the first language translator was so successful. After that, the computer translation system has been gradually improved by scholars, they make a study of machine translation technology and computer-aided translation technology.

2.1. Machine translation technology

Machine translation technology was called machine translation. When people began to make a study of it, they hoped that one day it could replace human translation[4]. At first, it was developed to translate a natural human language text or voice into another one by using some kinds of programs and computer software. With the in-depth study of researchers, they find that machine translation is a double-edged sword. It can easily translate language, but sometimes there are also many mistakes[5]. Machine translation technology mainly uses the language dictionary in the computer database to find the words, and then directly puts the meaning of the word into the whole sentence. Schematic diagram is shown in Fig 1.

![Schematic diagram of Japanese translation](image)

**Figure 1.** Schematic diagram of Japanese translation4

However, its disadvantages were appeared. Although it has many functions, the machine is not a human. It can't think like our brains, and it lacks the perceptual logical thinking ability like human brain, so the content of machine translation has no emotional colors. In short, it is difficult for people to know the specific context and semantics of sentences[6]. Some scholars who don't agree with machine translation completely replacing human translation have found that the difficult problem is how to build a large language database and ensure that the database can run at a high speed according to different language environments. If we want to solve these two problems, our computers must be able to get the support of interdisciplinary and master mathematics, statistics, humanities, emotionalism and other knowledge like human beings. But this kind of situation is impossible, because the translation of language needs perceptual thought. Therefore, the field of linguistics has also come to a conclusion that machine translation can’t completely replace human translation, but it can assist human translation to translate the Japanese texts.

2.2. Computer aided translation technology
The purpose of computer-aided translation is to improve the efficiency of human translation and optimize and simplify the process of translation. It uses the translation memory technology which is different from the machine translation technology. It is essentially different from machine translation that computer software is used to assist artificial language translation and improve the accuracy and appropriateness of translation. The computer-aided translation program can not directly convert the source language into the target language, but it does the duty through the assistance of manual translation with high quality and efficiency. At the same time, it will also improve the translation memory of the system itself in countless practice. The principle of computer translation technology is described in Fig 2.

![Figure 2. Principles of computer translation technology](image)

At present, the commonly used computer-aided translation software in foreign countries includes: “word fast”, “Trados” and so on. while the commonly used software in China is: “Yasin cats”, “vivid”, “general translation” and so on. In addition to the glossary, these software also includes the term management library. There are corresponding term management in every industry, such as economics, geography and linguistics etc. The translation of these terms can help the publishers to revise the bibliography translation and avoid the misunderstanding of the contents of the articles by the readers.

3. The importance and shortcomings of traditional paper dictionaries in Japanese translation

As we all know, Japanese vocabulary is the unit of sentence. If we don't know the meaning of vocabulary, it's difficult to understand the meaning of the original text. Besides, everyone's experience and time are limited, and the vocabulary we can remember is also limited. Compared with all Japanese vocabulary, the vocabulary we remember is only the tip of the iceberg. So when we translate Japanese to other languages, especially when it comes to trade terms, it is impossible to complete the translation
task without the help of the dictionary. Therefore, the traditional paper dictionary translation is faster and more accurate than the manual Japanese translation. But there are still many shortcomings:

3.1. Vocabulary has many limitations
In this world, it’s impossible that a Japanese dictionary can include all Japanese words. Because of the development of our society, the number of new words produced in this period is gradually increasing, which also shows that the vocabulary is infinite. When we begin to translate Japanese into Chinese, we may come across some new words. At this time, it is difficult to finish the translation task completely relying on the Japanese dictionary.

3.2. Low efficiency in searching Japanese dictionaries
First of all, there is no doubt that the speed of dictionary searching depends on our own searching proficiency. In addition, when we come across the translation of some proper nouns, we will find that these words are not found in the dictionary. We need to consult other books, which will greatly increase our working hours. As we all know, so as to improve the efficiency of our Japanese translation, time must be limited. If the efficiency of searching Japanese dictionaries is very low, it is difficult for us to finish the translation task on time.

3.3. The scarcity of professional dictionaries
The professionals who study Japanese will find that there are some Japanese dictionaries which are few in number and slow in updating, and some of them are difficult to be bought on the market. For example, the latest edition is only the 1980 edition in the Japanese Chinese Dictionary of railway. In other words, if the scarcity of dictionaries affects the lack of professional terms in the process of Japanese translation, it is obviously not suitable.

4. The application of computer and network in Japanese translation

4.1. Electronic dictionary
Compared with traditional paper dictionaries, electronic dictionaries have huge storage capacity, simple and convenient query operation, time-saving and labor-saving. According to the survey, "ebwin" is the most popular software in the electronic dictionary. This software does not rely on searching engine to query words, it has its own database. We can download our common dictionary data in the network, and then move the data into the database. After the loading is completed, we can input the words to be searched in the entry bar. Then we click different dictionaries, different explanations will appear.

4.2. Network dictionary
Compared with traditional paper dictionaries, network dictionaries have many advantages.

①Simple operation and convenient query
When we encounter new words, we can search the words directly in the information column, and there will be a detailed explanation of the words, which is more convenient than searching the paper dictionary.

②Large vocabulary included, fast version update
The amount of words stored in paper dictionaries is very small. Sometimes we need to query many dictionaries for word meaning query. But the network dictionary obviously does not need to be difficult, it stores a lot of professional dictionaries.

3. It can distinguish the pronunciation and instruction of Chinese characters in Japanese

Sometimes when we begin to translate, we will be troubled by Japanese pronunciation and instruction. Traditional dictionaries can only give us interpretation, but there is no exact pronunciation. Online dictionaries can give us examples of audio reading and lecture reading, which is convenient for our Japanese learning and translation. Here are some authoritative online dictionaries that can be translated online through Internet search: such as “Goo” Japanese online dictionary, “Excel” Japanese online dictionary “Yahoo” Japanese online dictionary and “Sanshengtang” Japanese online dictionary.

4.3. Using search engine to translate Japanese

Although electronic dictionaries and online dictionaries can be translated into Japanese, when we come across some professional words, they can't play their role effectively. We can use search engine to search directly on the network, almost all the words can be found. Of course, sometimes we will encounter abbreviations, e-dictionaries and online dictionaries do not include this kind of words, but we can easily find them and know their exact meanings by relying on the search engine.

5. You can use the computer network to understand the relevant information of the original Japanese

Every Japanese Translator's energy and ability are limited, and it is impossible to understand the industry field described in every Japanese article. If we only rely on traditional paper dictionaries to search words, it may cause the translated articles to be incomprehensible to some professionals. So we need to rely on the Internet to understand the industry or principles related to professional terms, so as to help us better carry out Japanese translation.

6. Conclusions

In the past, due to the underdevelopment of computer network technology, we had to rely on ourselves to translate Japanese, which made us have to work hard and not get good results sometimes. Nowadays, we are in the era of network, we should also learn to use the Internet to help us with Japanese translation. However, the Internet is not a human, it does not have the ability of thinking. If we only rely on the Internet, the translated articles are often not recognized by people. Therefore, on the one hand, we need to learn to use the Internet and on the other hand we need to enhance our Japanese vocabulary and the ability to learn Japanese constantly, so that we can play the function of network assisted Japanese translation better.

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