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Subtitle Translation Practice from the Perspective of Computer-Aided Translation: Takes the Comprehensive Application of Netease's Website, Arctime, and Adobe Premier Pro as an Example

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Abstract: *The era of purely manual subtitle translation has ended. Nowadays, with the help of computer-aided translation (CAT) software and programs, the efficiency of subtitle translation has been greatly improved. While CAT has outstanding advantages in accuracy and creativity, it involves more than the use of machines that can not be entirely depend on. At the same time, for contemporary translators, it is necessary to learn something in this field. This paper is based on a practice of subtitle translation using CAT software and programs which includes NetEase's website, Arctime, and Adobe Premier Pro. Three subtitle translation methods were explored, and problems and solutions in the translation process were discussed as well.*

Keywords: *Subtitle translation; Computer-aided translation; Acrtime; NetEase*

1. Introduction

In today's age of internationalization, every aspect of our lives, from studying, and working to entertaining, is linked to English. Nowadays, watching videos, especially in English, has become popular to kill time for a large number of people. However, the language barrier makes it impossible for the audience to fully understand and appreciate the content of those works, and that is when subtitle translation came into being. Traditionally, subtitle translation relied purely on manual operations. Whether it is listening to translation, locating the time axis or embedding, etc., it requires a lot of manual repeated clicks. Today, with the emergence of numerous CAT software or programs, such as NetEase's website, Arctime, Adobe Premiere Pro, etc., the efficiency and quality of subtitle translation, especially the former, have been greatly improved.

2. Computer-aided translation

The concept of computer-aided translation (CAT) is often confused with Machine translation. There are distinctive differences between them, of which the fundamental one lies in the real interpreter.

The subject of machine translation is the machine itself converting one language into another language through million times of calculations. In the blink of an eye, the converted version is delivered to us. But the advantage of speed is unable to make up for the poor quality. In most cases, the translated results are hardly readable, failing to realize the basic "faithfulness", let alone the requirements of "expressiveness" and "elegance".

On the contrary, the subject of computer-aided translation is the translator, that is, the participation of real, living, breathing people. Translators can choose to perform translation tasks with the help of CAT software and programs. CAT involves machine participation but does not entirely rely on it, it can streamline the usual heavy translation process and make it more effective.

3. Subtitle translation

For non-native speakers to understand movies in foreign languages, subtitles are indispensable, which is a crucial part to help viewers understand the content. And unlike ordinary literary translations where

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translated works are presented on paper and can be read repeatedly, the subtitle translation pays much attention to the auditory sense and visual sense, and the focus is on the combined audio-visual experience brought to the audience during the dialogue. Although there is no unified and recognized standard for excellent subtitle translation, there do exist some common characteristics of qualified subtitle translation: appropriate length, clear and natural sentence meaning, and colloquial.

Before the advent of so many CAT programs or software, the efficiency of subtitle translation was not very high, but it could barely meet the market demand at that time. However, with the deepening of China's opening-up policy to the outside world, the depth and breadth of international exchanges have increased significantly. As a result, the speed and quality of subtitle translation in the past proved to be dissatisfying. With the technology on booming, coupled with a large number of amateurs and professional practitioners, foreign language video works can quickly be changed from "raw" to "cooked" today.

4. Subtitle translation practice from the perspective of computer-aided translation

The following are three methods of subtitle translation in the practice of the author, taking an English video as an example, to explore and learn the comprehensive application of NetEase's website, Arctime, and Adobe Premiere Pro:

4.1. Netease's website

Developed by Artificial Intelligence Division, Netease's website is able to transliterate speech into text, integrating the technology of neural network machine translation, automatic speech parsing, and real-time segmentation of the timeline. The functions available range from the translation or transliteration of pictures, videos, subtitles, documents voice messages, this platform is even capable of performing simultaneous conference interpreting, etc.

4.1.1. Transliteration of videos

User just needs to search the keyword of "NetEase", click the official website, and then use the account of the QQ mailbox to register and log in. After a click of "Video Transliteration" and then the video prepared ahead of time will be selected and uploaded to equip it with subtitles in the form of sub-rip text(SRT). When uploaded successfully, people should wait a while before getting the result. Usually, a 40-minute video takes only five minutes to be automatically translated and has bilingual subtitles. The burden on the human translator will be greatly reduced by this function, and the accuracy rate of transliteration is satisfying. The task left for the translator is to make some minor corrections to certain words or sentences.

4.1.2. Segmentation of the timeline

As mentioned before, the subtitle format transcribed by NetEase is SRT, which matches the timeline or sequences of the video. If changes are needed, they can be finished on the website as well. User should select the original text transcribed and click to segment the sentence by hand. What's more, the twice-segmented sentence will still be automatically fitted into the video. Attentions need to be paid so that the starting time of the sliced sentence cannot envelop the next sentence.

4.1.3. Proofreading of the translation

At the top of the translated text, you can turn on or off the "automatic translation". The results presented here, which are far from readable, especially for videos, are done by ordinary machines. To a certain extent, the task of translation is reduced. In addition, this website can help you filter ah language and replace certain words or phrases with better versions. The ah language here refers to the interjections such as "ah", "oh", "like" and so on or expressions that will affect the audience after translation. The latter is similar to the operation of Word, the office software, which can replace all the same word translated with another one. For example, it can replace all "good" with "excellent".

After proofreading, user can export the bilingual subtitles and save them in SRT format. Then the next step is to store the original video and the SRT file in the same folder. When you click the play button, you can choose to display the subtitles you just saved in the player. Usually, the video can be played smoothly with the subtitles at this time, and it is the first method for producing subtitles practiced in this paper.

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4.2. Transcribing and Pr software

Adobe Premiere Pro (Pr) is a full-featured and professional video editing software. Pr has strong compatibility and can work with other software launched by Adobe company such as Photoshop (Ps). The software is widely used in advertising and television production with a quite powerful overall functionality. The use of Pr software can not only achieve a variety of video clipping, segmenting and merging, subtitles adding and other basic operations, but can also correct video color, stabilize footage, change the duration and speed of the film, and other operations.

4.2.1. Pr software

After getting access to the Pr software, the user should create a new project and remain the default settings, and import the SRT format subtitles saved after transcribing. Adjust the frame rate and video information to make the subtitles consistent with the original film. After the adjustment, the user needs to drag the two files finished before together into the timeline sequence box for automatic segmenting, also, some clicks are needed to better adjust the details. At this time, the video should be played properly. However, the video experience is unsatisfying. Because the background color of the subtitles is black by default, which does not match the style of the original film, the experience will be significantly improved after the transparency is increased. After those changes, the user should click the export button, then a video with bilingual subtitles is completed.

4.3. Arctime

Arctime, written in Java language, is a user-friendly and efficient cross-platform software for making subtitles. It has an original concept of subtitle block, and you can easily complete subtitle creation by dragging and adjusting the subtitle block on the timeline. It is a visual subtitle editor with a brand-new concept.

4.3.1. Video transcription

The steps of transcription will be repeated on NetEase's website, so more demonstration is omitted here. This time the difference lies in the format and it should be saved in text instead.

4.3.2. Subtitles in Arctime

In fact, the operations of these applications are similar. After being dragged and dropped, the video will be automatically segmented and a waveform will be generated. And the waveform box will turn orange, which means the timeline has been functioning.

(1) Prepared subtitle script

The first step here is to select the subtitle draft prepared in advance to import. Pay attention to ensure that the subtitle draft after encoding has no garbled characters. Don't worry if there is an overlap in the segmentation of subtitles, Arctime will handle it easily. The subtitle presented later can be modified in various styles as well. And a real-time preview is accessible if the subtitles can be converted into Advanced Substation Alpha (ASS) format. The subtitle file will be placed in the same folder as the original video by default, or you can choose to transcode. At this time, the video with subtitles is finished.

5. Reflections and conclusions

5.1. Problems caused by sentence segmenting

Because audiences cannot read long sentences at one time when watching the video, the length of subtitles should be strictly controlled. After trying to segment those sentences by hand, the machine translation result will also be altered, and the user needs to pay attention to the modification at any time to ensure the coherence of the meaning of the previous sentence.

5.2. The accessibility of subtitles in reality

It is so rare for viewers to have both videos in untranslated versions and subtitles in SRT format. In real life, viewers often just open video software to watch videos without expecting that it is untranslated. The first plan is simple but not convenient for our audiences. In line with the actual situation, there is much room for improvement, which is why plans two and three emerged.

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5.3. Problems with the subtitle format

In this specific practice, bilingual subtitles are the ultimate goal, and the originally exported and saved subtitle format is SRT. However, if the user goes straight to the choice of "Import SRT subtitles" to import them into Arctime during the operation, the video subtitles that appear later will overlap and cannot be understood correctly. At this point, the user should change the import option to "Import bilingual subtitles document", and then a bilingual subtitled video is produced.

5.4. Translation quality

Considering the watching experience and other factors, the best subtitle translation must still be done by human translators or at least requires their existence, and machine translation can only be used as a reference. What the machine is doing here is to find the best match by numerous calculations and big data in the corpus established with human works.

5.5. Efficiency

Using transcribing and subtitle editing tools like NetEase's website can greatly improve efficiency. First, the accuracy of machine transcription is really high. The video chosen in the practice comes from Bilibili's(a popular video software among young people) most-viewed English learning video - TED video. The video is viewer-friendly, and the accuracy rating of machine transcription is over 95%. Secondly, some of the translation results offered by those CAT software and programs can be applied without further alterations. For example, some short sentences with clear structures and semantic meanings are easy to cope with, which reduces the content that needs to be translated as well as the burden on the translators to a certain extent. Finally, the automatic segmenting and locating of the timeline functions provided by CAT, by streamlining the translation process, can reduce the workload of subtitle production by at least 50%, which is the main impetus for efficiency improvement.

6. Conclusion

Combining the above, it is not difficult to find that the CAT software and programs that emerging today are of great help in improving the efficiency of subtitle translation. Whether we continue to introduce more foreign works or increase investment in the campaign of going viral, we will be exposed to a large number of videos in foreign languages. In order to adapt to the changes and demands of today's subtitling industry or film industry, it is essential to learn more about those CAT software and programs.

Notes: The CAT URL mentioned in this article: https://jianwai.youdao.com/

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