A Case Study of the Subtitle Translation of a Short Video from the Perspective of Three-dimensional Transformation of Eco-Translatology

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Abstract
In the context of the rapid development of new media and the globalized transmission of short videos, the quality of subtitle translation needs to be improved. Based on the theory of Three-dimensional Transformation of Eco-translatology proposed by Professor Hu Gengshen, this paper analyzes the subtitle translation of the short video The "Story of Spring" in Xiong'an, aiming to explore how to apply the approach of translation adaptation in different cultural backgrounds from the three dimensions of language, culture and communication to improve the quality of video subtitle translation. Through the case study of short video subtitle translation from the perspective of Eco-translatology, this paper tries to provide some constructive suggestions for researchers and translators in related areas.

Keywords: Three-dimensional transformation; New media; Short video subtitle translation.

1. Introduction
With the rapid changes of the times, the role of new media in our daily life has become increasingly prominent, and video subtitles in major media have been widely disseminated. Concise short video subtitles play an important role in cross-cultural communication, because they can quickly reflect social hot spots, arouse people's resonance and cause thinking.

In the process of introducing Chinese culture abroad, the form of video has a better communication effect. But in terms of video subtitle translation research, China lacks specific translation theories. In recent years, Professor Hu Gengshen of Tsinghua University has put forward a new translation theory, namely Ecological Translation, which advocates an alternative approach of adaptability and selectivity from the three dimensions of translation: language, culture and communication. Eco-translation theory has been recognized by many translators. This paper also applies this translation theory to analyzing the subtitle translation of the short video The "Story of Spring" in Xiong'an.

The original video The "Story of Spring" in Xiong'an lasts six minutes, and vividly presents the development of the official media. It is an important national new area in China and shows people's expectations for its future, by interviewing local staff and residents. However, there are many errors in the English subtitles of this video posted by the official media. It is hoped that through the analysis of translation errors in this paper, subtitlers and relevant personnel can pay more attention to the quality of short video subtitle translation.

2. Literature Review
The previous relevant studies of subtitle translation abroad started relatively early. For example, Gambier and Gottlieb (2001) wrote (Multi) Media Translation. Concepts, Practices, and Research. In recent years, the studies of video subtitle translation have become increasingly diverse. Samir and Ali (2016) summarized subtitling strategies in the translation of humor from English into Persian; Dilnozakhon (2021) analyzed the domestic and foreign research experience of audiovisual translation; Hashish and Hussein (2022) analyzed strategies that subtitlers use in rendering English slang expressions into Arabic; Omair and Saleh (2022) studied subtitling strategies of swear words in Arabic fansubs of an English movie in terms of culture-bound expressions. The studies on subtitle translation are not few, but due to the lack of video translation theory, these studies mainly focus on the text aspect of video subtitles. Video subtitle translation is an emerging field in China, and lack of theory is extremely unfavorable to the long-term spread of Chinese videos to the world. Fortunately, the Eco-translatology theory provides a comprehensive solution to the above problems.

Based on Chinese English translation practice, Professor Hu Gengshen proposed the Ecological Translation Theory. Under the theoretical environment where other translation theories pay more attention to text translation,
Eco-translatology breaks away from the limitation of text translation and emphasizes the ecological environment where the translation is located, which is more appropriate for analyzing English subtitles translation of videos.

However, the majority of research on the ecological translation of videos focuses on long videos of documentaries, films and TV series. Zhou and Zhang (2019) analyzed the documentary Wild China from the point of the translator’s “adaptation” and “selection”; Zhang (2021) studied adaptive translation strategies of the Chinese blockbuster Lost in Russia; Cao and Mansor (2022) paid attention to the inappropriate adaptive selection of translation techniques made by the fansub groups in the popular American Sitcom. There are not a few studies on video subtitle translation guided by ecological translation theory, and even fewer in the field of new media short video. There is much knowledge information in documentaries, but long documentaries have enough time and pictures to solve the understanding difficulties in subtitles. Films and TV series have complete plots, more life scenes and dialogues, which are relatively easy to understand. However, short videos generally take new things as the subject, deleting the plot that takes a long time and explaining the views and cultural background to the audience in several minutes. Short videos require better translation quality of subtitles, and translators should make adaptive transformations from a lot more dimensions.

The three-dimensional transformation in Eco-translatology requires translators to consider more aspects than the text itself in order to choose appropriate strategies and methods to translate authentically and better adapt to the ecological translation environment in the dimensions of language, culture and communication. Subtitling is precisely the way that video makers (translators) express their points through the network to achieve the coordination between language, culture and communication. It can be seen that the Eco-translation theory is applicable to the subtitle translation of new media short videos.

3. Features of Subtitle Translation

   The video of The "Story of Spring" in Xiong’an has Chinese and English subtitles. But some important contents are not translated in the video, such as the background information of interviewees, which is important for the audience. The possible reason may be that the translation of this part is troublesome in the video production process and greatly increases the workload of subtitle producers. Therefore, some subtitlers often neglect this part in the English subtitle translation of short videos. The same situation also occurs in the short video of this paper, which leads to understanding obstacles.

   In the process of subtitle translation, the translator should not only consider the vocabulary and syntax of the language dimension, but also the subtitle space and duration limited by the video. There may be important information on the video screen, so the corresponding subtitles need to avoid blocking important images and the subtitle length needs to be shortened. The subtitle also needs to match the sound and pause in the video to avoid the situation that the subtitle is difficult to correspond to the image in the video.

4. Three-Dimensional Transformation of Eco-Translatology

   The study of Eco-translatology includes nine research focuses and theoretical perspectives. Among them, the three-dimensional transformation focuses on the translation process, which is a cycle process of translator adaptation and selection, that is, the adaptive transformation between the three dimensions of language, culture and communication, and then continues to cycle according to a certain translation ecological environment. The translation ecological environment is a collection of various factors that affect the translator's optimal adaptation and choice. More specifically, it refers to the interaction of language, culture, communication, as well as the author, reader, translation client, etc. (Hu, 2003).

   From the language dimension, translators need to change the translation of words, syntactic structures and logic of the text and choose appropriate translation methods to adapt to the specific translation ecological environment of short videos, such as images, sounds, etc. corresponding to subtitles.

   The adaptive transformation of cultural dimension focuses on the cultural differences between the source language and the target language to prevent misinterpretation of the original text from the perspective of the target language culture. Therefore, in the process of source language conversion, translators should pay more attention to the whole cultural environment that the language belongs to.

   The adaptive selection of the communicative dimension requires the translator to take the transformation of linguistic information and the transmission of cultural connotation as the goal, and pay more attention to expressing the communicative intention of the original text and combining the video images and limited space and duration of subtitles.

5. Case Studies of Video Subtitle Translation

   In this study, Chinese and English subtitles are extracted from the video, and the corresponding video images of subtitles are combined to analyze the text and its ecological environment from three dimensions.

5.1. The Dimension of Language

   In the process of language transformation and processing, short video subtitle translation requires the translator to vividly reveal the connotation of the original language, and accurately convey the hidden information in the original language to the target audience, so as to successfully realize the adaptive transformation of the language dimension. Therefore, translators should take full account of the linguistic information involved in the ecological environment to produce a more adaptive translation.
5.1.1. Adaptive Selection and Transformation of Words

The adaptive selection and transformation of language dimension emphasize that the translator needs to adapt to the words of the translation ecological environment and consider whether the words selected in the subtitle translation match the video frame.

Example (1)
Original Translated Text:
When I was young, the water in my house had a strong smell.
The water in the river was kind of black
Revised Translated Text:
When I was young, the river near my house had a strong smell.
The water in the river was kind of black

"The water in my house" generally refers to the tap water at home, which does not match the river in Xiong'an shown in the video image, and it is easy for audiences to get confused. The video subtitles should match the frame in terms of word selection. In addition, the following subtitle "the water in the river" also indicates that "the water in my house" refers to "the river near my house". The short video subtitle translation emphasizes the translators need to achieve adaptive and selective transformation at the lexical level of the language dimension.

5.1.2. Adaptive Selection and Transformation of Syntax

Short video subtitle translation requires the translator to simplify the sentence structure of the translated text and realize the selective transformation of language dimensions, shorten the subtitle length, and make the subtitle more appropriate for the video image. Chinese has flexible rhetoric, so the syntax is more changeable. When translating from Chinese to English, the translator should not translate the Chinese syntax inconsiderately, which may lead to a wrong understanding of the target language audience.

Example (2)
Original Translated Text:
The past five years has witnessed our efforts to build a green city based on the vision of "city building after tree planting"
Revised Translated Text:
The past five years have witnessed our efforts to build a sustainable city
This sentence in Chinese subtitles refers to the sustainability of the ecological conservation of Xiong’an New Area, matching the video image of afforestation, and the appropriate translation needs to be highly matched with the video. In addition, the length of English subtitles is long but the duration is short, which is not conducive to audience understanding. It is necessary to simplify the syntactic structure to convey the source language information with shorter subtitles.

The Chinese source text used the rhetoric of intertext. The term intertext (huwen) in traditional Chinese philology was considered as a kind of rhetoric often used in ancient poems (Shen, 2020). When using the rhetoric of intertext in Chinese, the former and latter sentences or two parts of a sentence in Chinese seem to describe different things, but actually, the two parts explain and supplement each other. The order of these two parts does not literally mean the order of occurrence but refers to the difference in priority and importance.

The original translator misunderstands the original meaning of this intertextual structure in Chinese and mechanically adopts the syntactic structure of intertextual rhetoric, which leads to a long and wrong subtitle. The Chinese source text means the development of Xiong’an New Area gives priority to ecological environment protection and sustainable urban construction but the corresponding original translation “city building after tree planting” misinterprets the order of priority into the order of occurrence, and unsuccessfully adapts to the special intertextuality rhetoric used in Chinese, which may mislead the audience's understanding.

5.1.3. Adaptive Selection and Transformation of Textual Logic

Short video subtitle translation has higher requirements for translators. While considering the literal meaning of long Chinese sentences in the video’s translated text, it is also necessary to analyze whether the subtitle can match the video images and sounds and realize the textual transformation of language dimensions, and to reorganize the logic of the text.

Example (3)
Original Translated Text:
What happens in Xiong’an
tells us a story of development
and change.
We can learn from the story that
since time and tide wait for no man,
we should all seize the day.
Revised Translated Text:
What happens in Xiong’an
tells us a story of development
and change.
Lost time is never found again.
Time and tide wait for no man.
The development of Xiong’an should make the best use of time.
This example serves as a textual link between the preceding and the following interviews and reflects the rapid changes in Xiong’an described in the next interview in the video. The narration and background music is full of passion and enhance the language power, so the original translated text “We can learn from the story that” does not match the video effect and textual meaning. Two short sentences in the revised version “Lost time is never found again” and “Time and Tide wait for no man” are more powerful, highlighting it is urgent for Xiong’an to seize the time. So the revised version is more suitable to be a transitional sentence to link the preceding and following parts.

5.2. The Dimension of Culture

In this dimension, the translator needs to pay attention to the cultural differences between the source language and the target language, judging how to translate subtitles with cultural connotations, and how to match the subtitle with the video image, so that the audience can understand and accept the cultural information conveyed by the video within a few seconds after the appearance of the subtitle and video image.

Example (4)

Original Translated Text:
Five years ago, with the establishment of the policy to set up Xiong’an New Area another “Story of Spring” was unveiled here.

Revised Translated Text:
Five years ago, with the establishment of the policy to set up Xiong’an New Area the development of another Shenzhen was unveiled here.
“The Story of Spring” is a patriotic Chinese song praising Chinese leader Deng Xiaoping, who promoted the establishment of the Shenzhen Special Economic Zone. This song was once popular in China, and Chinese people generally know the story behind the song. The state arranged policies to develop Shenzhen in the spring, then the city developed rapidly. This process is just like the literal meaning of the phrase "story of spring", which refers to plants sprouting in spring and growing up in summer. Gradually, this phrase has been extended to describe the development of cities similar to Shenzhen. This phrase is not popular in foreign countries, but Shenzhen has a very high reputation in the world, which is a popular city for foreign tourists and the most competitive and innovative city in the whole world. Therefore, to help the audience quickly understand the cultural connotation of the limited subtitles, the translated text should be revised to “the development of another Shenzhen”.

5.3. The Dimension of Communication

In this dimension, the translator should focus on analyzing whether the translation conveys the correct communicative intention matching the pictures and sounds of the videos.

**Example (5)**

**Translated Text:**
And the fastest way from Beijing to Xiong'an Station is only about 50 minutes.

The original Chinese subtitle of this sentence means that people can reach Xiong'an Station in just 50 minutes. And the frame corresponding to the video shows that the conductor of the Beijing Xiong'an Intercity Train provides considerate services for passengers waiting to get off when the train arrives at the station. However, the Chinese subtitle omits the name of the train and the starting station of the 50-minute route. In order to promote the audience's understanding and shorten the subtitle length as much as possible, the name of the starting station needs to be added to the English subtitle.

After checking the timetable and route map of this high-speed railway on the official website, it is found that on this train, it takes only about 50 minutes to get to Xiong'an Station from Beijing West Station. The target language audiences may not hear of Beijing West Station, but they may know Beijing, the capital city of China. In addition, the limited time and space of subtitles do not give the translator too much room to explain. If “Beijing West Railway Station” is translated directly, the subtitle will be longer and more difficult to understand because this phrase has not mentioned in the previous video. If the subtitles are translated into “Beijing West Station to Xiong'an Station”, the English idiomatic rule of avoiding repeated words is ignored. Therefore, in the process of translation, through the comprehensive consideration of subtitles at the communicative level, the translator chose to vaguely transform “Beijing West Railway Station” to “Beijing”, which refers to the Beijing area including several railway stations, concisely conveying the accurate communicative intention. This is a good example in terms of the translation adaptation in the dimension of communication.

6. Conclusion

This paper analyzes the subtitle translation of the official original short video The “Story of Spring” in Xiong'an from the perspective of ecological translation. In terms of words, syntactic structures and logic of text, as well as culture and communication, the paper adopts the translation method of three-dimensional transformation, combines the ecological environment of short videos, such as images, sounds, and analyzes the adaptive selection of short video subtitle translation and the ecological environment of the short video translation. From the discussion above, we can see that Eco-translatology enjoys a high degree of explanatory power in subtitle translation.

In terms of limitation, this study does not make in-depth research and innovation on ecological translation at the theoretical level but conducts a case study on short video subtitle translation from the perspective of Eco-translatology. Although there are many limitations in this paper, it is still hoped that the present research can provide
some constructive suggestions for researchers and translators in related areas. Moreover, more attention and valuable studies on Eco-translatology are expected to explore its further development.

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