

Research on cross-cultural translation strategies of metaphorical meaning expression under conceptual integration

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Abstract: Aiming at the low accuracy of traditional metaphorical meaning translation, this paper studies the cross-cultural translation strategies of metaphorical meaning expression under conceptual integration. In the four main spaces of conceptual integration, text metaphorical keywords are identified and extracted in the input space. The relationship between metaphorical keywords is extracted and analyzed in the subcategory space. The ordered keywords are mapped into the integration space by sentence according to the degree of relevance. In the integration space, translators use space and appropriate translation methods to complete the study of cross-cultural translation strategies for metaphorical meaning expression. The design experiment is compared with traditional translation strategies. The experimental results show that the accuracy of traditional translation strategies is 4/5 of that of metaphorical meaning translation strategies. It proves that the proposed cross-cultural translation strategy of conceptual integration of metaphorical meaning expression has more advantages.

1. Introduction

The output of culture is the expression of soft power. In the cross-cultural translation of literary works, errors often occur because of improper expression of metaphorical meanings. Metaphorical words or expressions often appear in translated materials, especially in literary works. How to use the target language to express them appropriately and keep their meanings unchanged in the original background of the materials has always been a difficult problem. Translation is a metaphorical construction, in which the translator objectively expresses the author's original meaning in another language. Once the metaphorical meaning is separated from the context, it loses its original meaning. Literal translation and free translation are the main translation strategies in traditional translation. With the development of time, many scholars have put forward many other translation strategies, but they are basically in common with literal translation and free translation [1].

Relevant experts have put forward unique translation strategies and achieved some results. Reference [2] puts forward the research methods of cross-cultural translation strategies. This method takes the annual hot words as the starting point of the study, analyses the different translation versions of different words and studies the strategies of cross-cultural translation. The translator needs to have an insight into the cultural differences between languages on the basis of taking into account the original cultural connotation, and at the same time chooses the appropriate translation methods so as to achieve the dynamic equivalence between the target language and the original text as far as possible. To make it acceptable to readers and achieve the goal of effective cross-cultural communication, the research process of this method is complex and difficult to be widely used. Reference [3] puts forward the cross-cultural strategy research method of film and television production in the context of international communication. This method analyses the profound change of media environment and the development advantages of Chinese and Western culture. In view of International Film and television works, this paper puts forward cross-cultural translation strategies. Improve the translation skills of film and television works, have a thorough understanding of the works, and fully express the metaphorical meaning in the specific context. Drawing on the successful international experience, we can effectively improve the level of cross-cultural translation, but this method has the problem of low translation accuracy. Reference [4]

proposes a cross-cultural approach to the translation of TV English news. With the development of global information technology, international news has been paid more and more attention. However, there are some differences in languages and cultures around the world. Accurate translation has become an important way for people to correctly and thoroughly understand external news. Firstly, this paper makes a thorough study of the expression of English news language, analyses the specific release situation of English news, and completes news translation. However, the translation of this method has a strong pertinence and a small scope of application.

In order to solve the problems existing in the above methods, this paper puts forward a cross-cultural translation strategy research method of metaphorical meaning expression under conceptual integration, and accurately realizes the cross-cultural translation of metaphorical expression.

2. Cross-cultural translation strategies for metaphorical meaning expression under conceptual integration

Metaphorical meaning in translation can reflect the ideology of the original author. The translation of metaphorical meaning under conceptual integration is mainly done in the generic space and the integration space of the integration space. In this paper, the two input Spaces are named as the source language text space and the translator space respectively. The schematic diagram of the four spaces of conceptual integration is shown in fig. 1.

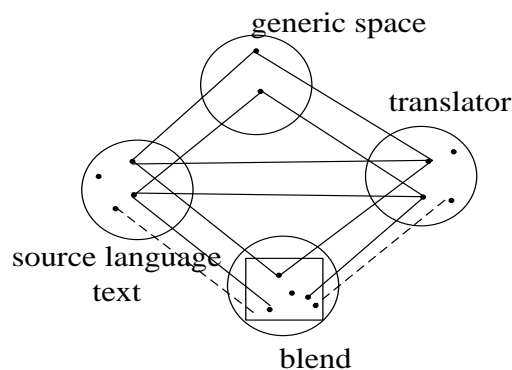


Fig. 1 schematic diagram of conceptual integration space

For a literary work to be translated, the metaphorical meaning is not only related to the author's own culture, but also to the overall background of the times, content structure and content elaboration angle of the work. These metaphorical meanings are not difficult for the readers of the source language to understand, but how to translate them into content that can be understood by readers of different cultures requires translators to adopt appropriate translation strategies, which are composed of translation criteria and translation methods. The following section will elaborate on how to properly translate metaphorical meanings across cultures.

2.1 Identify and extract metaphorical keywords

To translate metaphorical meanings properly across cultures, it is necessary to extract the Keywords with metaphorical meanings from the works. According to the type of translated works, if the translator does not carefully read and carefully speculate on the author's creative ideas, it is impossible to quickly identify and extract the metaphorical keywords. Therefore, in the source language text space, SVM classifier and convolutional neural network are used to recognize and extract metaphorical meanings. According to the content of metaphor, the metaphorical words are classified into noun, verb and adjective metaphors. The flow diagram of identification extraction is shown in fig. 2.

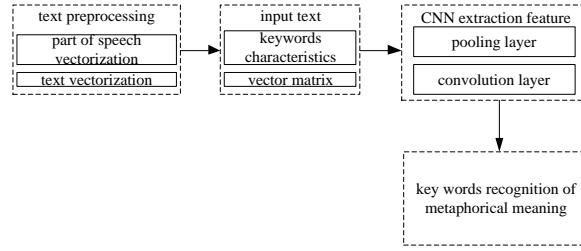


Fig. 2 overall block diagram of keywords recognition and extraction of metaphorical meaning

Convert text into vector form using a computer. In order to quickly and accurately identify and extract the metaphorical meaning of the whole work, the number of layers of convolutional neural network is set at 50, which can be changed according to the overall text volume of the translated work [5]. Firstly, the convolutional neural network is trained. Formula (1) is the calculation formula of the training model.

$$p(W_a|W_i) = \frac{e^{U_a V_i}}{\sum_j e^{U_j V_i}} \quad (1)$$

In formula (1), V_i is the column vector in the input layer, which is also the input vector of W_i , U_i is the row vector of the hidden layer, and W_i is the output vector. According to formula (2), the similarity between input vector and output vector is calculated, and the output value is normalized [6].

$$\text{sim}(V_i, U_i) = \frac{\sum_{i=1}^n (V_i U_i)}{\sqrt{\sum_{i=1}^n (V_i)^2} \sqrt{\sum_{i=1}^n (U_i)^2}} \quad (2)$$

After the training of convolution neural network, sentences are input into convolution neural network in the form of matrix. In order to facilitate subsequent processing, zero matrix is used to complete sentences of different lengths. Select the convolution filter of dimension, extract the feature matrix from the text matrix, and map the feature matrix to the convolution layer. In the pooling layer, the features obtained from convolution are clustered and then fitted. The kernel function of SVM is RBF kernel function, whose formula is shown in (3) [7].

$$K(x, z) = \exp\left(-\frac{\|x - z\|^2}{2\sigma^2}\right) \quad (3)$$

The output of convolutional neural network is taken as input sample, and the input sample is mapped to high-dimensional feature space according to RBF kernel function. In the high-dimensional feature space, keyword features with different metaphorical meanings are extracted. According to the one-to-one mapping principle, keyword features are mapped into the generic space of conceptual integration. Then the relationship between keywords with metaphorical meanings is analyzed in the generic space.

2.2 Analyze the relationship between metaphorical keywords

Analyzing the relationship between keywords of metaphorical meaning involves the trans spatial integration of translators' linguistic and cultural psychology. According to the theory of conceptual integration, cross-cultural translation is the result of integration according to the context of the original author's writing. There are similar and implicit relationships between metaphorical keywords. The relationship between metaphorical keywords is analyzed by semantic relationship algorithm. The generic space in the conceptual integration space is composed of the common

meanings among authors, works and translators. In the generic space, the relationship between metaphorical keywords is analyzed. Because the Keywords with metaphorical meaning must be understood together with other words in the sentence or context, the translator can find the hidden metaphorical meaning [8]. The similarity trust between similar keywords is calculated to determine whether it is related to words that actually contain metaphorical meaning. The formula for calculating the similar trust degree is as follows.

$$C(A) = \frac{\sum_{xj} f_{xj}(K_{xj})}{\sum_{ij} f_{ij}(K_{ij})} \quad (4)$$

In formula (4), K_{ij} is the j th keyword of the i th concept node, $f_{ij}(K_{ij})$ is the occurrence frequency of this keyword, K_{xj} is the x keyword that needs to determine the similar trust degree, and $f_{xj}(K_{xj})$ is its occurrence frequency. The higher the occurrence frequency of unknown keywords, the higher the similarity trust, the lower the occurrence frequency, and the lower the similarity trust between keywords. Determine whether the word is related to keywords with metaphorical meaning based on the similarity and trust of keywords. The higher the degree of trust, the higher the frequency of occurrence of the keyword, the higher the frequency of occurrence of the keyword in the whole text, and the less the association with the metaphorical keywords. In the generic space, according to the results of the semantic relation algorithm, the Keywords with high correlation with metaphorical meaning are classified, and they are ranked from high to low correlation with each metaphorical meaning Keywords. In the generic space, keywords are connected one by one according to the correlation degree according to the mapping relationship shown in fig. 3.

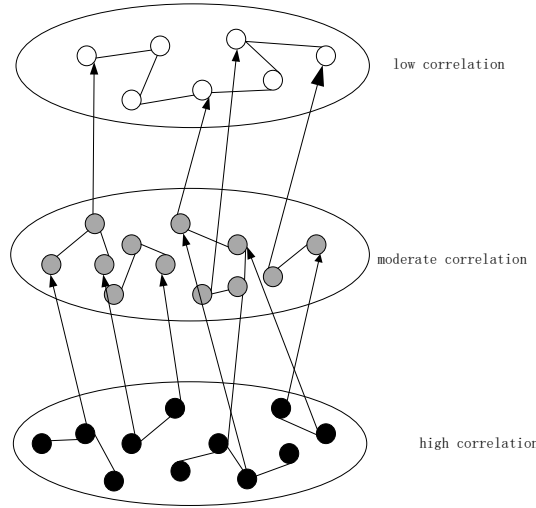


Fig. 3 keywords mapping

Connect the metaphorical Keywords with the related Keywords and arrange them in the order of the sentences in the text. The rules of metaphorical meaning in translation are set and the cross-cultural translation strategies for metaphorical meaning expression are formed by combining metaphorical meaning translation methods.

2.3 Set the translation rules of metaphorical meaning expression

There are three translation rules for metaphorical meaning expression, namely, complete non-translation, partial translation and complete translation [9]. In the context of conceptual integration, the translation rules are set in the integration space. Meanwhile, the cross-cultural translation rules of metaphorical meaning expression are also the integration rules of the integration space and the first criterion that translators should consider when translating.

The rule of complete non-translation must be that the metaphorical meaning not only does not affect the target language readers' reading comprehension in the sentence it is written in, but also does not affect the target readers' reading in the chapter it is written in. Even for long literary works, they will not cause reading difficulties in the subsequent works. If it is a long work, and the author does not give a hint before translation, the translator can objectively analyze the text and choose whether not to translate. If the metaphorical meaning expression deleted later affects the target reader's reading, appropriate annotations can be added for explanation. The rule of not translating at all is also used in a few metaphors that have cultural impact on the target language or sentences that do not affect reading. The rule of not translating at all can greatly avoid the impact of strong cultural impact.

Partial translation rules can be adopted when there are multiple metaphors in a sentence or a paragraph and it is difficult to express them in appropriate target language. Adopt appropriate translation methods to translate the translatable parts; If the metaphorical parts that are not suitable for translation affect the reading of target language readers, free translation can be adopted. If it does not affect reading, you can choose to delete the modified statement directly. For some metaphorical parts that must be translated, if the meaning that the source language wants to be expressed cannot be expressed in the free translation, the translation can be done from the perspective of language description.

It is necessary to maintain the metaphorical characteristics when translating all rules. When translating metaphors, translators need to take into account factors such as text background, nationality and author's creation idea. The translator should take the context into consideration when carrying out all the translation, and constantly switch between the thought of source language and the thought of target language, so as to translate the source language into the target language. In the full translation, a part of the sentence which is easy to be understood by the target language readers can be added in the translation, and it needs to be annotated when it is added directly to the text. It is also a part of complete translation to complement the metaphorical meaning.

2.4 The translation method of metaphorical meaning expression

In the integration space of the four Spaces of conceptual integration, appropriate translation methods are used to form translation strategies according to translation rules, to map and integrate the generic space and the translator space, so as to achieve cross-cultural translation of metaphorical meaning.

The translation of metaphorical expressions is completed by substitution, ellipsis, annotation and other methods [10]. Through substitution, the target language readers can understand the metaphorical meaning of the author's writing. Substitutions can be made by replacing metaphors with similes, or by using two different metaphors in different languages. When similes are used to replace metaphors for translation, metaphors in the translated source documents can be converted into similes, and similes can be translated into the target language, so as to make the target language readers understand the author's writing intention. When translating, it can be replaced when the source culture and target language have similar meanings. However, the number of similar expressions between different cultures is limited. Therefore, when encountering this kind of metaphorical translation, the translator needs to use the appropriate target language to make the translation according to its metaphorical meaning.

When encountering some metaphorical meanings that cannot be translated properly in the target language, forcing them to remain in the text will reduce the fluency and readability of the target language, and even affect the understanding of the target language readers. However, if the metaphorical meaning which is difficult to translate is omitted without affecting the fluency of the writing and readers' understanding of the whole work, the metaphorical meaning can be omitted.

Adding appropriate annotations to some metaphorical meanings is also a way to translate metaphorical meanings. Some metaphorical meanings that are very familiar to readers of the source language culture are completely foreign to readers of the target language, and some of them may even affect the translation of meaning pairs. At this point, appropriate explanatory text can be added

to illustrate the specific content of the metaphorical meaning and increase the readability of the translation. According to the translation rules of metaphorical meaning, adopting appropriate translation methods is the cross-cultural translation strategy of metaphorical meaning expression under the concept integration.

3 Translation strategy test

In order to verify the accuracy of the translation strategy of metaphorical meaning expression proposed in this paper, this paper tests the translation of metaphorical meaning. A comparative experiment between the design and traditional translation strategies. Taking the translation strategies proposed in this paper as the experimental group and the traditional translation strategies as the control group, different texts are selected for translation.

3.1 Test content

In order to determine the accuracy rate of metaphorical meaning translation manually, 8 short texts were selected as test variables, and the translated texts were translated using the translation strategies of the experimental group and the control group respectively. Before the test, the metaphorical meaning in 8 texts was manually corrected as the criterion. Comparing the translation results of the two groups of translation strategies with the criteria, the accuracy of the metaphorical meaning of the two groups of translation strategies is calculated.

3.2 Test results

The results of the translation accuracy of the translation strategies of the experimental group and the control group on the metaphorical meaning are shown in Table 1.

Table 1 accuracy record of translation strategies

text numbers	experimental group	control group
1	93.3%	74.6%
2	96.5%	81.2%
3	95.4%	78.1%
4	97.1%	73.6%
5	96.2%	75.7%
6	92.9%	73.1%
7	94.7%	74.8%
8	92.8%	79.5%

The results of translation accuracy of translation strategies in Table 1 show that the accuracy of translation strategies in the experimental group is higher than that in the control group as a whole. From the perspective of numerical range, the translation accuracy of translation strategies in the experimental group is 92%~97%, while that in the control group is 73%~81%. The average translation accuracy of the experimental group was 95.16%, and that of the control group was 75.87%. The average accuracy of the control group was 4/5 of the average accuracy of the experimental group. To sum up, the cross-cultural translation strategy of metaphorical meaning expression under conceptual integration proposed in this paper has high accuracy and advantages.

4. Conclusion

This paper studies the cross-cultural translation strategies of metaphorical meaning expression in the context of conceptual integration. Metaphor is a unique way of thinking for human beings. It is an attempt to use appropriate translation strategies to translate the metaphorical meaning in a written work under the integration of concepts. For language, metaphor is not only a rhetorical device but also a cultural symbol with unique charm. Cross-cultural translation of the metaphorical meaning can reflect the accuracy of writing to express the author's intention, so that the translated text can be vivid and vivid, and excellent works can be accepted, understood and loved by different cultures. In the context of conceptual integration, cross-cultural translation of metaphorical meaning

should be flexible in adopting individual translation methods to form translation strategies corresponding to different works.

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