Construction of Comprehensive Effect Evaluation System of Chinese Ancient Literary Classics Translation Based on AHP Model

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Abstract

The rapid development and popularization of Internet has narrowed the gap between countries’ economies and cultures. And the cultural exchanges and mutual translation between China and foreign countries have been increasing, especially in the translation of Chinese ancient literary classics. However, in the process of Chinese ancient literary classics translation, there are problems such as inaccurate translation, semantic ambiguity and logical confusion. For this reason, this paper first summarizes the literatures in the field of Chinese ancient literary classics translation, constructed the comprehensive effect evaluation system of Chinese ancient literary classics translation based on the fuzzy analytic hierarchy process (AHP) model, and conducted an analysis of the comprehensive effect of current Chinese ancient literary classics translation, in combination with questionnaire survey. The results show that the degree of translators’ understanding of foreign culture, sentence length, and vocabulary choice, etc., all have an important influence on the comprehensive effect of Chinese ancient literary classics translation. Therefore, in the process of Chinese ancient literary classics translation, translators should fully understand the foreign culture and the codes of the target language, and make the text of the target language short, refined, and easy to understand, to the best of his or her abilities, using contemporary and international internet counterpart vocabulary in explaining proprietary vocabulary in the Chinese ancient literary classics, so as to achieve a better logical relation and easiness to read in between the texts of translation.

Keywords: AHP, Network Conditions, Translation of Chinese Ancient Literary Classics, Comprehensive Effect.

1. BACKGROUND

1.1 Literature review

With the continuous development of globalization, cultural exchanges between countries have gradually increased, and scholars at home and abroad are eager to learn more from each other's culture. For this purpose, many scholars have carried out translation work on the literature classics of another language, accomplished a certain scale of translation works including A Dream in Red Mansions, Romance of the Three Kingdoms, and the Literary Mind and the Carving of Dragons. Some scholars not only developed a new interest in the translation of Chinese and foreign literature classics, but also carried out a study on the cross-cultural translation. Lai and Ouyang taking the English translation of A Dream in Red Mansions as an example, studies the cross-cultural translation strategies of Chinese ancient literary classics, thinking that in the existing environment, translation of Chinese ancient literary classics shall not cling to the form and depth of the original texts, it should conform to the readers’ aesthetics and meet their psychological expectation, so as to provide acceptable across-cultural translation works with a higher degree of foreignization. (Lai and Ouyang, 2012). Liu and Liu think that the translation of Chinese ancient literary classics marks a renaissance and going out of Chinese culture, which can make the Chinese ancient literary classics achieve an extension and inheritance in foreign cultures. They then studied the spread of A Dream in Red Mansions in the countries all over the world, and the present situation and development of the translation and translation study of the book (Liu and Liu, 2013). Bai and Li taking the English translation of religious culture-loaded words in A Dream in Red Mansions as an example, studied the translation of Chinese ancient literary classics from a perspective of national culture security, thinking that the translation should make it easy for readers to understand, pay more attention on the flexibility in translation, and take an annotation strategy which needed to convey Chinese culture (Bai and Li, 2015). Lu Junyu, taking Jingdezhen Tao Lu and its English translation The Potteries of China as an example, studied the text features of Chinese technical classics and the strategies foreign translators used in the translation, finding that two methods
can be introduced into the translation of Chinese technical classics: Literal Translation and Elaboration using Para-text (Lu Junyu, 2016). Liu and Li tried to present the current situation as well as the significance of Chinese culture outbound communication and translation of Chinese ancient literary classics by introducing tea culture (Liu and Li, 2017).

1.2 Purpose

In recent years, with foreign culture, living habits and literary works being introduced to China, Chinese scholars also began to translate China's traditional culture and literary classics into foreign languages for people from all over the world to understand and study (Shi, 2012). However, due to the profundity of Chinese culture, complication of Chinese languages, and the variety of Chinese ancient literary classics works, the translation of Chinese traditional culture is faced with many problems, such as the translator only pays attention to the literal translation, instead of the semantic expression, which makes the translated text lack of logical thinking, the internal connotation is not well expressed, and the central idea is not clearly stated. The poor translation quality will make foreigners feel difficult to understand the essence and charm of Chinese traditional culture. In contrast, the translation of foreign cultures is relatively straightforward and easy to understand (Zhou and Xu, 2015). In order to greatly improve the accuracy and consistency of the Chinese classic literature translation, and show the charm of Chinese culture to the world, this paper takes the Chinese ancient literary classics translation as an example, using the analytic hierarchy process (AHP), constructed the comprehensive effect evaluation system of Chinese ancient literary classics translation, and made an assess of the comprehensive effect of current Chinese ancient literary classics translation, in combination with questionnaire survey.

The results show that sentence length, vocabulary choice and the degree of translators’ understanding of foreign culture, etc., all have an important influence on the comprehensive effect of Chinese ancient literary classics translation. At the end of this paper, a demand of accuracy in the translation of Chinese ancient literary classics is brought forward. It is also expected that this paper will be a supplement to document literatures in relevant fields, and provides reference for the subsequent translation of Chinese ancient literary classics.

2. CONSTRUCTION OF COMPREHENSIVE EFFECT EVALUATION SYSTEM OF CHINESE ANCIENT LITERARY CLASSICS TRANSLATION

2.1 Model construction and index selection

From the many Chinese and foreign literature classics translation works, materials, and the degree of people's understanding of Chinese and foreign literature translation, there are many factors that affect Chinese ancient literary classics translation. And the factors can be divided into different dimensions, such as the translation theme, the number and the comprehensive quality of translators and so on. Therefore, based on AHP level analysis model, this paper constructed a comprehensive effect evaluation system of Chinese ancient literary classics translation, to make an assess of the comprehensive effect of current Chinese ancient literary classics translation, as shown in figure 1. The evaluation system is constructed to conform to the principles of validity, measurability and consistency (Hua, 2016). According to the actual situation, the evaluation index is divided into the following several layers: the target layer is the comprehensive effect evaluation system of Chinese ancient literary classics translation; the criteria layer is the comprehensive quality of translators and the selected translation theme; the first layer is selected to be the comprehensive quality of translators including translators’ understanding and mastery of foreign culture, their translation skills and the ability, translators’ acceptance and use of network language.
2.2 Source of survey data and the processing

Questionnaires were used to collect data. The survey of Chinese ancient literary classics translation effect was conducted on 100 people at home and abroad through electronic questionnaires, before the first-hand data was obtained. Among the 100 interviewees, 58 were males and 42 were females; 30 of them with a master's degree or above, 40 of them were undergraduate students, and 30 of them were foreigners.

The collected data should be verified to ensure the validity and reliability. First of all, Cronbach’s $\alpha$ is used to test the reliability of data collected, and the formula $\alpha = \frac{K}{K-1} (1 - \frac{\sum \sigma^2}{\sum \sigma^2})$ is used to test the reliability degree of indexes. If all the indexes of Cronbach’s $\alpha$ test values were greater than the threshold value of 0.7, it explains that the index data has a greater credibility. And then, the CFA method was applied to test the validity of the survey data through the extraction of each variable’s average variance, using the formula $AVE = \frac{\sum \lambda^2}{\sum \lambda^2 + \sum \epsilon^2}$. The test results show that the AVE value of each index also exceeds the general threshold value, indicating that the data is true and effective and can be used in the follow-up analysis.

3. EMPIRICAL ANALYSIS

3.1 Calculation of comprehensive evaluation value

According to the established evaluation system and index, the factor layer and index are defined as: $U=\{U_j, U_2, ..., U_n\}$; the sub-factor layer index as: $U_i=\{U_{i1}, U_{i2}, ..., U_{in}\}$. Then the weight of each indicator variable is determined by using expert survey method.

According to the above, the weight of the index set $U$ of the main factor layer can be obtained as follows: $A=\{A_1, A_2, ..., A_n\}$; The weight of the sub-factor layer index set can be obtained as follows: $A_i=\{A_{i1}, A_{i2}, ..., A_{in}\}$.

According to the predetermined level criteria, the membership vector $R_i$ of the evaluation set $V$ by each indicator is obtained: $R_i=(r_{ij1}, r_{ij2}, r_{ij3})$

Among them, $r_{ijh}=\frac{v_{ijh}}{n}$, $h=1,2, ..., n$, $n$ is the total number of experts, $v_{ijh}$ is the number of experts who considered the index $U_j$ is of $v_h$ level. Therefore, the evaluation membership matrix is:

$$R_i = \begin{bmatrix} r_{i1} \\ r_{i2} \\ \vdots \\ r_{in} \end{bmatrix} = \begin{bmatrix} r_{11} & r_{12} & r_{13} \\ r_{21} & r_{22} & r_{23} \\ \vdots & \vdots & \vdots \\ r_{n1} & r_{n2} & r_{n3} \end{bmatrix}$$
When a fuzzy matrix operation i.e., a fuzzy comprehensive evaluation, is made upon the evaluation matrix $R_\theta$ for each sub-factor layer index $U_i$, the following result is obtained: $B_i = A_i \cdot R_i = (a_{i1}, a_{i2}, ..., a_{ij}) \cdot (b_{ij}, b_{ij2}, ..., b_{ij})$.

Then, a secondary fuzzy comprehensive evaluation is carried out to get the membership vector of the target layer:

\[
B = A \cdot R = (A_1, A_2) \cdot \begin{bmatrix} B_1 \\ B_2 \end{bmatrix} = (b_1, b_2)
\]  

(2)

When $\sum_{j=1}^{4} b_j \neq 1$, it can be obtained through normalization treatment that $B = \tilde{b}_1, \tilde{b}_2$.

When the comprehensive evaluation effect of Chinese ancient literary classics translation is calculated based on the weight, the following formula as follows is usually adopted:

\[
S = BC^T = \tilde{B}C^T
\]

(3)

### 3.2 Network training

According to the analytic hierarchy process, the comprehensive evaluation effect shown as different index variables is calculated and part of them is used as the sample of the network training. The specific steps to test the sample are:

Firstly, according to the evaluation index set, the number of input nodes in the network is determined, which is the number of indicators. And according to the evaluation result set, the number of nodes of the output layer is determined;

Secondly, the raw index data is processed with normalization, and then used as a training test sample;

Thirdly, the network is initialized. And then a value should be assigned to the connection weight $w_{ij}$ and the interpretation value $\theta_j$, which should be set between (0, 1);

Fourthly, sample data should be input to calculate the data output $O_j$ of indexes of each level. The input and output of each variable respectively is as follows:

\[
net_j = \sum_i w_{ij}O_{ij}, O_j = \frac{1}{1+e^{-net_j}}
\]

(4)

Fifthly, the formula $\delta_j = (y_j - O_j) \cdot O_j(1 - O_j)$ is applied to calculate the weight error of the output layer;

Sixthly, the correct value of each weight $\Delta w_{ij}(n) = -\eta \delta_j O_i + \alpha \Delta w_{ij}(n-1)$ should be calculated and saved;

Seventhly, the formula $w_{ij}(n+1) = w_{ij}(n) + \Delta w_{ij}(n)$ is applied to correct the weight value and get the final comprehensive effect evaluation result.

### 3.3 Result analysis

The comprehensive effect of Chinese ancient literary classics translation is evaluated by using the methods above, and the statistical collation and formula operation of the survey data are carried out to get the final evaluation results, as shown in Table 1.
Table 1 Evaluation Results of the Comprehensive Effect of Chinese Ancient Literary Classics Translation

<table>
<thead>
<tr>
<th>Target Layer</th>
<th>Criteria Layer</th>
<th>Comprehensive Effect</th>
<th>Index Layer</th>
<th>Comprehensive Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive effect of Chinese ancient literary classics translation V</td>
<td>Translator’s comprehensive quality E</td>
<td>0.736</td>
<td>Translator’s understanding of foreign culture E1</td>
<td>0.426</td>
</tr>
<tr>
<td></td>
<td>Translation theme selection F</td>
<td>0.264</td>
<td>Translator’s translation skills E2</td>
<td>0.298</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Translator’s acceptance and use of internet language E3</td>
<td>0.276</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Focus on philosophical thinking and ancient literary classics F1</td>
<td>0.381</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Multivariate and diverse material selection F2</td>
<td>0.619</td>
</tr>
</tbody>
</table>

According to the final results shown in Table 1, the influence of the comprehensive quality of translators E on the evaluation index system of effect is 0.736; the influence of the translation theme selection F on the evaluation index system of the effect is only 0.264. It can be seen that the main influencing factor of the Chinese ancient literary classics translation effect is the comprehensive quality of translators while the influence of translation theme selection on the Chinese ancient literary classics translation effect is rather small.

In the comprehensive quality of translators, the proportion of translator’s understanding and mastery of foreign culture E1 is the largest which is 0.426. Translator’s translation skills and the ability of E2, translator’s acceptance and use of network language E3 accounted for 0.298 and 0.276, respectively. This indicates that the translator's understanding and mastery of foreign culture has the greatest influence on the comprehensive quality of translators, and thus the effect of Chinese ancient literary classics translation.

In terms of the selection of themes, the proportion of multivariate and diverse theme selection F2 is 0.619, while the proportion of focusing on philosophical thinking and ancient literary classics F1 is only 0.381. This indicates that the multivariate and diverse theme selection has a greater impact on the comprehensive effect of Chinese ancient literary classics translation.

4. CONCLUSION

To sum up, in the process of Chinese ancient literary classics translation, the general effect of Chinese ancient literary classics translation is not very satisfactory due to the translation theme selection is single and overall poor quality of translators including the translator’s poor understanding of local conditions and customs, literature background, poor translation skills, and their vocabulary is not rich enough to support the language use in translation. This paper, based on the fuzzy analytic hierarchy process (AHP) and questionnaire survey, made an assess on the comprehensive effect of Chinese ancient literary classics translation and found that: most of the translation of Chinese ancient literary classics is still difficult to understand at present, due to the translator’s poor understanding of foreign culture, translator’s poor switch ability between two languages, and the translator’s poor understanding and use of internet language, etc. The long-term existence of this situation has greatly influenced the correct understanding of Chinese ancient literary classics and cultural essence by foreign scholars, and also not conducive to the exchange and interaction between Chinese and western cultures. For this purpose, Chinese translator should add other types of theme to the translation list, and use the diverse information network technology conditions, tries to understand the foreign literature, cultures and preferences as much and deep as possible, to lay a good foundation for the future translation of Chinese ancient literary classics. In this process, the translator should also practice their translation skills, and improve their switch ability between ancient text language and target language, to greatly improve the translation quality and accuracy of Chinese ancient literary classics. At the same time, the translator should get to know more about the new words, new language, new sentence of the internet era of nowadays, and use try to use them in the translation of ancient classics, to add a modern touch to the translation of Chinese literature classics, reduce degree of difficulty of understanding the translated texts, and expand the spread scope of Chinese culture.
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