International Journal for Housing Science and Its Applications
Publish August 10, 2025. Volume 46, Issue 4 Pages 5991-6000

https://doi.org/10.70517/ijhsa464436

Phenomenon and Translation Strategies of Word Inequality in English-Chinese Translation Based on Image Processing Technology

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Abstract There are many kinds of English and Chinese words with a long history, and their meanings are extremely rich. However, the error rate is also increasing, especially the phenomenon of lexical inequality in English-Chinese translation. Therefore, this paper proposed a study on the phenomenon of lexical asymmetry and translation strategies in English-Chinese translation based on image processing technology. By analyzing the phenomenon of errors in English and Chinese, this paper discussed the causes of errors and discusses the solutions to these errors. Through the analysis of word meaning errors, the translator can better understand the meaning of words in a specific context. The result of the experiment showed that in the analysis of the effect of the translation method on word layer inequality, the number of failed students in classes 1, 2, 3 and 4 of the experimental group was 1. The number of excellent students in Class 1, 2, 3 and 4 of the experimental group was 18, 19, 20 and 17, respectively. The number of people who failed in Class 1, 2, 3 and 4 of the control group was 7, 8, 9 and 9 respectively, and the number of people who were excellent in Class 1, 2, 3 and 4 of the control group was 5, 6, 7 and 6 respectively. It can be seen that the free translation method in the experimental group was better.

Index Terms Image Processing Technology, English-Chinese Translation, Vocabulary Inequality, Translation Strategy

I. Introduction

With the rapid development of information technology and network communication technology, text and pictures have become the main way for people to obtain information. As the communication between countries becomes more and more frequent, various languages need to be recognized and processed. Therefore, language recognition of text images is the key technology to achieve efficient text information extraction. Language is the most significant carrier of human society. It carries cultural information and reflects the life of human society. English and Chinese words have rich content, but there are differences in many aspects. Unequivalence means that in the process of translation, there are no words directly corresponding to the words in the translated language. One language can clearly mark things with one word, while the other needs to be expressed in a circle. The differences between English and Chinese words are absolute and inevitable, while the differences between identity and similarity are relative and accidental. Therefore, in translation, equivalence is only a relative concept, not real equivalence, while non-equivalence is absolute, and complete equivalence does not exist.

Modern educational technology is based on modern educational theory. Theory and practical technology that can use modern scientific and technological achievements and system science to improve teaching efficiency and optimize education and teaching process. It solves educational problems by studying the learning process and learning resources. Translation teaching is the process of cultivating comprehensive language ability. Pang Shuangzi studied the role of English translation in Chinese language change. It adopted a new corpus, namely Chinese diachronic composite corpus (CDCC). The corpus combined parallel corpus and comparable corpus in three sampling periods of the 20th century, and used reference corpus as the starting point of the time frame. He examined whether dominance in English-Chinese translation had an impact on the target language, and he focused on the antagonistic conjunctions as a measure of dominance [1]. Su Weili proposed that the application of modern educational technology in translation teaching should focus on organizing the teaching process from the perspective of learners, optimizing and coordinating teaching resources. It can greatly improve students' English-Chinese translation ability [2]. Translation issues have received considerable attention among translation process researchers, and different research methods have been used to identify them. The research results were sometimes inconsistent, because these studies mainly focused on the translation between European languages,

and few studies discussed issues related to non-European languages. In order to fill this gap, Su Wenchao investigated the problem triggers in English-Chinese visual translation from two aspects [3]. Because text and image were mixed in an unstructured way in English-Chinese translation, it was very important to obtain context from images for English-Chinese translation.

In the current semantic recognition of email English, there are serious problems such as information distortion and unrecognizability. This may affect the promotion of machine automatic recognition of email text. Wen Shengfang set up the corresponding image processing algorithm based on the actual situation of the mail image, and used the conversion of color system data to grayscale data for image grayscale processing. He combined the weighted average gray level algorithm to improve the gray level definition and softness of the image. The research showed that the algorithm has certain practical effect and can provide reference for subsequent related research [4]. Hinami Ryota has made the following contributions, laying a foundation for the study of comic translation. First, he proposed a multimodal context-aware translation framework. Secondly, he created a new benchmark to evaluate comic translation. Finally, he designed a fully automatic English-Chinese comic translation system based on the proposed method [5]. However, they did not carry out in-depth research on these problems, let alone focus on the analysis of their translation inequalities.

With the rapid development of information technology and network communication technology, text and pictures have become the main way for people to obtain information. As the communication between countries becomes more and more frequent, various languages need to be recognized and processed. Therefore, language recognition of text images is a very necessary work. This paper focused on the in-depth study of the texture characteristics of text images, and analyzed the texture characteristics of text images in detail. This paper briefly described the texture features of text images, and expounded the current research status and existing problems. This paper introduced a new text classification method based on multi-wavelet analysis. In this paper, the energy of multiwavelet decomposition subgraph was used as the feature, and the implementation language was used for classification. Experimental results showed that compared with traditional wavelet analysis, the method proposed in this paper had a great improvement in recognition effect, especially for the change of font format with strong robustness.

II. Algorithm of Text Image Processing Technology

II. A. Text Image Processing

In recent years, with the rapid development of network technology, information processing technology and multimedia technology, the world has gradually entered the information age. A large amount of information has been converted into electronic information that can be transmitted and stored through computers, thus greatly improving the utilization rate of information. Text image is a common means of information transmission. With the increasing diversity of the world, exchanges between countries are becoming more and more frequent. Characters in various languages must be recognized and processed. Therefore, text classification is an important step to improve the efficiency of image information utilization.

In the digital information era, Internet technology provides people with an interactive, timely, massive and three-dimensional information dissemination platform. It can combine multimedia with relevant content and different forms to provide a variety of services. With the rapid spread of multimedia data in the network, how to effectively process a large amount of information has become a very important issue. Picture is the main medium of human beings. With its intuitive image, easy to generate, modify, and save, it has gradually become an important information in the digital era. The text information generated by image data acquisition devices such as digital cameras, image and text scanners, such as files and archives, is called text pictures. In various information processing systems, text and pictures account for a large proportion.

In today's increasingly diverse world, exchanges between countries are increasingly frequent. Characters in many languages need to be recognized and processed, while all kinds of characters need to be recognized by corresponding systems and realized by software. However, it is generally assumed that the type of image to be processed is known. Therefore, human intervention was added in the identification process. In a large number of text and image processing, manual operation would reduce its work efficiency and automation level. The text preprocessing technology is one of the most commonly used technologies, as shown in Figure 1.

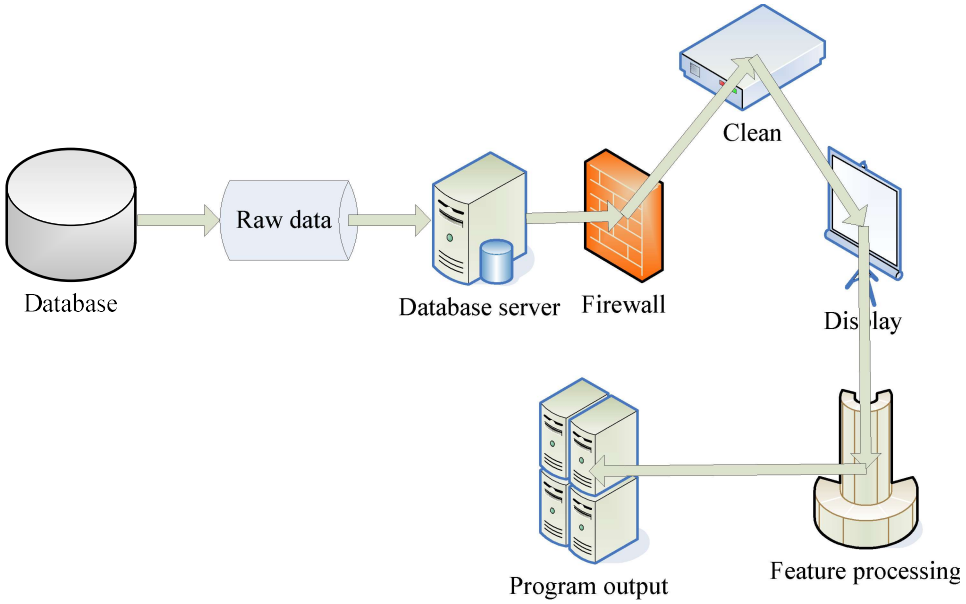

Figure 1: Text preprocessing process

The language recognition of text images is to present the images of different languages in the form of images, and extract the basic features that can be recognized by the machine, so as to realize the automatic classification of text types. Text classification and recognition is a major problem in a large number of information processing fields (Figure 2).

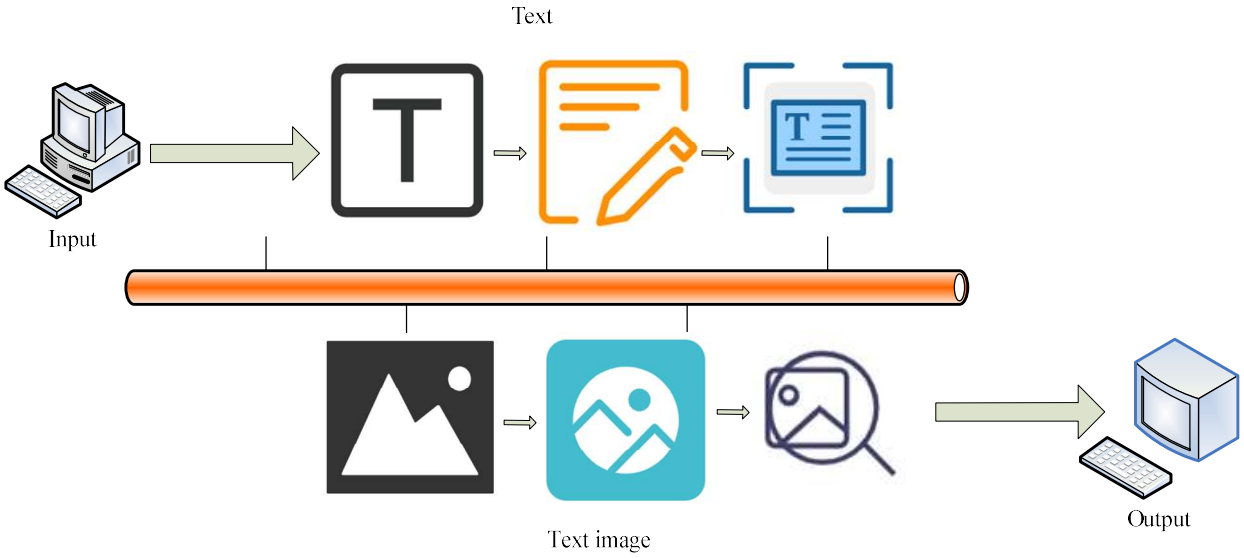

Figure 2: Framework of text image analysis system

II. B.Language Recognition Based on Multi-Wavelet Transform

Wavelet transform is widely used in image processing because of its excellent performance in time-frequency. However, wavelet can not have the characteristics of orthogonality, symmetry, short compact support, high vanishing moment and so on at the same time, so orthogonality and symmetry cannot be taken into account in practical applications. For this reason, this paper proposes the multi-wavelet theory.

(1) Multi-scale function and multi-wavelet function

The construction of multi-wavelet function is completed by multiple scale functions. It can make $\phi = (\eta_1, \eta_2, ..., \eta_k)^D$, $\eta_j \in O^2(K)$, $k \in M$. The multi-scale function $\phi = (\eta_1, \eta_2, ..., \eta_k)^D$ and wavelet function $\beta = (\beta_1, \beta_2, ..., \beta_k)^D$ satisfy the two-scale equation:

$$\begin{cases} \phi(d) = \sum_{r \in L} O_r \phi(2d - r) \\ \beta(d) = \sum_{r \in L} G_r \phi(2d - r) \end{cases} \tag{1}$$

In the formula, matrices O_r, G_r are a low-pass and high-pass matrix filter respectively.

If multi-wavelet is a scale function, then its sub-bands contain k^2 subgraphs, and the o-level multi-wavelet transform can decompose the image into $k^2 \times (3o+1)$ subgraphs. The traditional wavelet analysis method has a subgraph on each subband. In the first decomposition, the second order multiwavelet decomposition is used to generate subgraphs, while the conventional wavelet decomposition only generates subgraphs. Multi-wavelet is composed of multiple scale functions, and its structure has great elasticity, which can combine the characteristics of orthogonality, symmetry, short tight support, high vanishing moment and so on. In image processing, symmetry is more in line with human vision, and in edge processing, it has good orthogonality and eliminates correlation, thus achieving accurate image reconstruction. Multiwavelet has both the above two characteristics, and can better extract the edge features in the image.

(2) Decomposition and reconstruction algorithm of multi-wavelet

According to multi-resolution analysis, the decomposition and reconstruction formula of multi-wavelet is as follows:

$$\begin{cases} E_{i-1,r} = \sqrt{2} \sum_{m \in L} Z_{m-2r} E_{i,m} \\ T_{i-1,r} = \sqrt{2} \sum_{m \in L} F_{m-2r} E_{i,m} \end{cases} \quad i, r \in L \tag{2}$$

For $\forall g(d) \in U_0$,

$$g(d) = \sum_{r \in L} E_{i,r} \alpha(d - r) = \sum_{r \in L} E^D_{i_0,r} \, 2^{j_m/2} \alpha(2^{j_m} d - r) + \sum_{j_m \le i < 0} \sum_{r \in L} T^D_{i,r} 2^{j/2} \beta(2^j d - r) \tag{3}$$

In the formula, $E_{i,r}$ is the scale decomposition coefficient and $T_{i,r}$ is the wavelet decomposition coefficient.

(3) Multi-wavelet texture feature extraction

The average energy of an $M \times M$ image $J(a,b)$ is:

$$C = \frac{1}{M^2} \sum_{a=1}^{M} \sum_{b=1}^{M} |J(a,b)| \tag{4}$$

Before multi-wavelet decomposition, normalize the energy of each text image:

$$H(a,b) = J(a,b)/C \tag{5}$$

then:

$$C_H = \frac{1}{M^2} \sum_{a=1}^{M} \sum_{b=1}^{M} |H(a,b)| = 1 \tag{6}$$

Perform wavelet decomposition for $H(a,b)$, and define the energy of detail sub-graph after decomposition as:

$$CT^j_{i,r} = \frac{1}{(M/2^{i+1})^2} \sum_{n=1}^{M/2^{i+1}} \sum_{m=1}^{M/2^{i+1}} \left| T^j_{i,r}(n,m) \right| \tag{7}$$

In the formula, $T^j_{i,r}$ represents the decomposed detail subgraph, and i represents the decomposition coefficient.

II. C. Sorter Selection

Support vector machine (SVM) is a statistical learning method based on structural risk minimization. This method uses nonlinear transformation to transform the input space into a high-dimensional space, finds the best linear classification surface in the high-dimensional space, and fully considers the different attributes of the input data, avoiding the problem of under-learning and over-learning. The segmentation model of support vector machine can effectively overcome the interference of redundant features, sample distribution, over-fitting and other factors, and

has obvious advantages in classification efficiency and stability. For specific multilingual applications, support vector machine is very ideal in terms of classification performance and accuracy. LIBSVM is a tool widely used in pattern recognition, regression analysis and other aspects, also known as SVM. It iterates parameters through parallel grid search methods, thus obtaining the optimal classification parameters. This paper takes linear regression equation as the core and radial basis function as the kernel function. The radial basis function is:

$$R(a,a_j)=\exp\left(-\frac{1}{2\phi^2}\left\|a-a_j\right\|^2\right) \tag{8}$$

The whole data set can be divided into two parts, one for training and the other for testing. In order to reduce the impact of random sampling on the classification effect, it can group the samples and conduct training and testing repeatedly. In this paper, three tests were carried out for training and testing samples in the same sample set.

II. D.Classifier Recognition Performance Test

In order to verify the correctness and robustness of this method, three text-based image libraries are designed in this paper.

Image library 1: The image library or file can be converted into a static image, with the size of 128×128 and 8-bit grayscale image, including English, Chinese, Russian, Japanese and Korean characters, without any quality degradation. Each text has an image, and its image format is the same. The font of each image is similar. It is a text. Other images include different formats and fonts.

Image library 2: This is a text image scanned by newspapers, magazines, books and other forms, including English, Chinese, Russian, Japanese and Korean. Such pictures come from a wide range of sources. It has some undesirable phenomena such as slight slanting, noise, broken strokes, etc.

Image library 3: This can be a binary image, including English, Chinese, Russian, Japanese and Korean. Each picture is a line of text, with no deterioration in quality and consistent font format.

The 24-dimensional multi-wavelet energy distribution feature vector is carried out for image library 1, the MED feature library A is established for 600 text images with the same glyph, and the MED feature library B is established for text images with different glyphs. Support vector machines can be used for classification, and MED feature library A and feature library B can be used as test sets respectively. In the case of classification using wavelet energy distribution features, higher recognition rate can be obtained in the text type recognition methods used. In the case of differences in the types of text to be recognized and learned, the method of classification recognition using wavelet energy proportion feature has good recognition effect.

In order to compare the character recognition methods based on wavelet energy proportion characteristics, this paper carries out an experiment on image library 1, and uses wavelet to segment the character image three times. In this paper, the 9-dimensional wavelet energy scale feature vector WED is extracted, and 600 text images with the same text format and 1800 different text images are used to build the WEP feature library A and B respectively. SVM adopts WEP feature library A for training and WEP feature library B for testing. Table 1 compares the recognition effects of the two methods.

In this paper, the method takes identification efficiency and identification efficiency as evaluation criteria. This method measures the recall and precision of feature extraction through comprehensive evaluation of single image feature extraction time, feature dimension, parameter optimization time and other indicators.

Table 1: MED and WEP feature library B identification results (%)

	Recall rate		Accuracy	
	MED Database	WEP Database	MED Database	WEP Database
Britain	42	41.3	60.9	33.3
China	41	21.9	23.4	13.8
Russia	39	35	51.7	66
Japan	55.3	54.9	26.8	25.6
Korea	36	30.4	44.8	42.1

This paper extracts text images from the feature vectors of 24-dimensional multi-wavelet energy distribution, and constructs MED feature library 2. In this paper, the feature vectors of different types of text samples (1000 images in total) are randomly extracted from the feature library for training, and the feature vectors of the remaining samples (2000 images in total) are detected. In this paper, the average value obtained from each test is used to evaluate the classification effect to reduce the impact of random sampling on the classification effect. For

comparison, this paper proposes a text classification and recognition method based on wavelet energy distribution characteristics, and carries out a series of experiments on this basis. In this paper, wavelet is used to decompose three times, and the eigenvector WED of energy distribution is extracted from the wavelet. The corresponding WED feature library 2 can be established and the corresponding recognition test is carried out. The recognition results of the two methods are shown in Table 2.

Table 2: MED and WED feature library 2 identification results (%)

	Recall rate		Accuracy	
	MED Database	WED Database	MED Database	WED Database
Britain	99.9	90.8	99.8	99.2
China	98.4	83.6	97.7	81.2
Russia	99.5	92.1	99.1	95.8
Japan	98.3	87.5	99.7	98.3
Korea	99.3	90.3	98.2	86.3

Through the experiment of image library 3, this paper extracts the energy distribution feature vector of 24-dimensional multi-wavelet from the image library, and constructs MED feature library 3. In each experiment, this paper would randomly extract a feature vector from the feature library, and then use the feature vector to detect. In this paper, the average value obtained from each test is used to evaluate the classification effect to reduce the impact of random sampling on the classification effect. The data is shown in Table 3.

Table 3: Recognition results of MED feature library 3 (%)

	Recall rate	Accuracy
Britain	97.6	77.5
China	99.9	73.8
Russia	97.8	67.8
Japan	98.1	70.3
Korea	98.5	66.1

It can be seen from the above table that in the image database of five texts, the recognition rate of these two methods is very low due to the difference in the relationship between training and test sample structure. In general, the classification method based on the characteristics of multi-wavelet energy distribution is more robust than the classification method based on wavelet energy proportion.

III. Experimental Analysis of Translation Strategies in English-Chinese Translation

III. A. Experimental Design

There are many inequalities in English-Chinese translation. The meaning of the translation is vague and inaccurate. This paper selects four classes for testing, namely Class 1, Class 2, Class 3 and Class 4. There are 40 students in each class, with a close proportion of men and women. In this paper, four methods are used for teaching, and the experimental group and the control group are set up. The experimental group uses the text image processing technology, and the control group uses the traditional processing technology, and then analyzes the teaching effect. After the teaching, they are tested respectively, with a full score of 100. The score is divided into four grades, with below 60 points as failing, 60-79 as passing, 80-89 as good, and 90-100 as excellent.

In the face of word-level errors in English-Chinese translation, translators can adopt various translation methods, such as neutral words or general substitution, transliteration, literal translation, free translation, ellipsis translation, graphic translation, to minimize the vocabulary of the translation. This time, four methods are selected to test the effects of the four translation strategies. This paper aims to improve the accuracy of semantic expression in English-Chinese translation.

III. B. Experimental Analysis

(1) Transliteration method

Transliteration is a kind of phoneme unit, which maintains the pronunciation of the source language in the translation, thus highlighting its main language function. Long-term translation practice makes some words with certain cultural meaning in the source language gradually form equivalent words in the target language. Direct transliteration is a simple and practical translation method [6], [7]. Of course, most words with special cultural

concepts cannot be fully understood by the translator, so transliteration and annotation should be adopted. Transliteration and annotation refer to adding annotations in translation to supplement the source language. Through transliteration and annotation, transplanting the source language culture into the target language can not only solve the problems of lexical errors, but also promote the spread of the source language culture. Therefore, this paper tests the effect of this method, and the experimental results are shown in Figure 3.

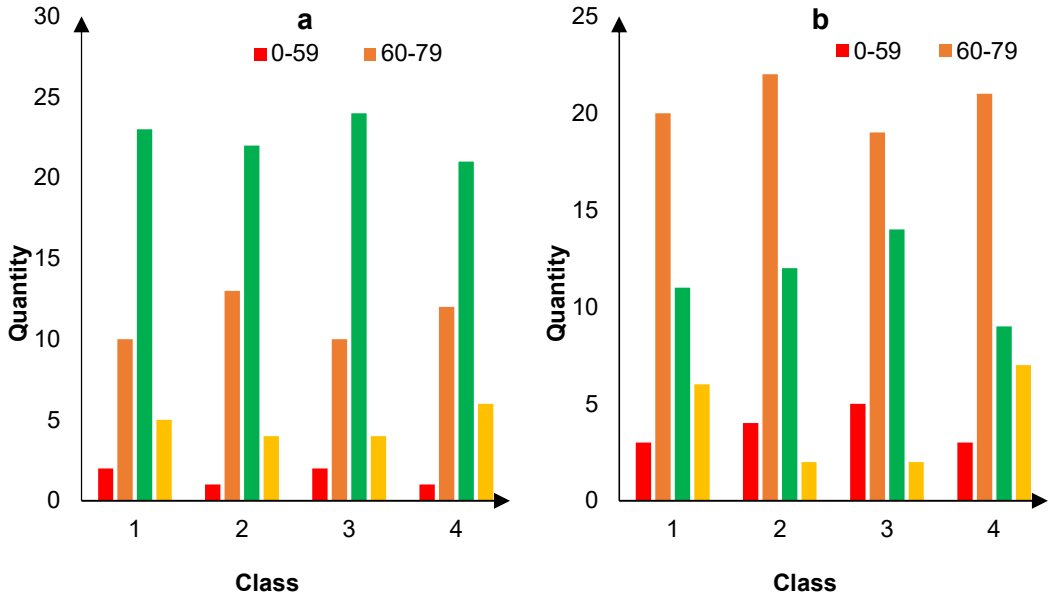

Figure 3: Analysis of the effect of transliteration on word layer inequality in the experimental group and the control group

As shown in Figure 3, Figure 3 (a) shows the analysis of the effect of the transliteration method for the treatment of word layer inequality in the experimental group. Figure 3 (b) shows the analysis of the effect of transliteration in the control group on word layer inequality. It can be seen from the figure that the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 2, 1, 2 and 1 respectively, and the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 10, 13, 10 and 12 respectively. The number of good students in Class 1, 2, 3 and 4 of the experimental group was 23, 22, 24 and 21, respectively. The number of excellent students in Class 1, 2, 3 and 4 of the experimental group was 5, 4, 4 and 6 respectively, while the number of failed students in Class 1, 2, 3 and 4 of the control group was 3, 4, 5 and 3 respectively. The number of people who passed classes 1, 2, 3 and 4 in the control group was 20, 22, 19 and 21, and the number of people who passed classes 1, 2, 3 and 4 in the control group was 11, 12, 14 and 9, respectively. The number of excellent students in Class 1, 2, 3 and 4 of the control group was 6, 2, 2 and 7, respectively. It can be seen that there was no significant difference in the performance level of the four classes in each group, but compared with the control group, the experimental group had a better effect of transliteration.

(2) Literal translation, literal translation annotation

Translators believe that in order to maintain their own characteristics in a certain period and under a specific cultural background, semantic translation should be adopted [8], [9]. Some words are often transliterated into translation due to their distinctive source language cultural characteristics, and too many transliterations would have a certain impact on them. Therefore, literal translation and annotation can be used. This would not only maintain the national characteristics of the source language, but also allow translators to gain more opportunities in the cultures of different countries. For this reason, the test of this method is carried out and the test results are given, as shown in Figure 4.

As shown in Figure 4, Figure 4 (a) shows the analysis of the effect of literal translation and literal translation annotation on word layer mismatch in the experimental group. Figure 4 (b) is the analysis of the effect of literal translation and literal translation annotation in the control group to deal with word layer inequality. It can be seen from the figure that the number of people who failed in Class 1, 2, 3 and 4 of the experimental group was 1, 1, 1 and 2 respectively, and the number of people who failed in Class 1, 2, 3 and 4 of the experimental group was 17, 15, 18 and 16 respectively. The number of good students in Class 1, 2, 3 and 4 of the experimental group was 13, 14, 10 and 14, respectively. The number of excellent students in Class 1, 2, 3 and 4 of the experimental group was

9, 10, 11 and 8, respectively. The number of people who failed in classes 1, 2, 3 and 4 of the control group was 4, 5, 3 and 7, while the number of people who failed in classes 1, 2, 3 and 4 of the control group was 25, 27, 22 and 24, respectively. The number of good people in Class 1, 2, 3 and 4 of the control group was 9, 4, 10 and 6, respectively. The number of excellent students in Class 1, 2, 3 and 4 of the control group was 2, 4, 5 and 3, respectively. Compared with the control group, the experimental group has better effect of literal translation and literal translation annotation.

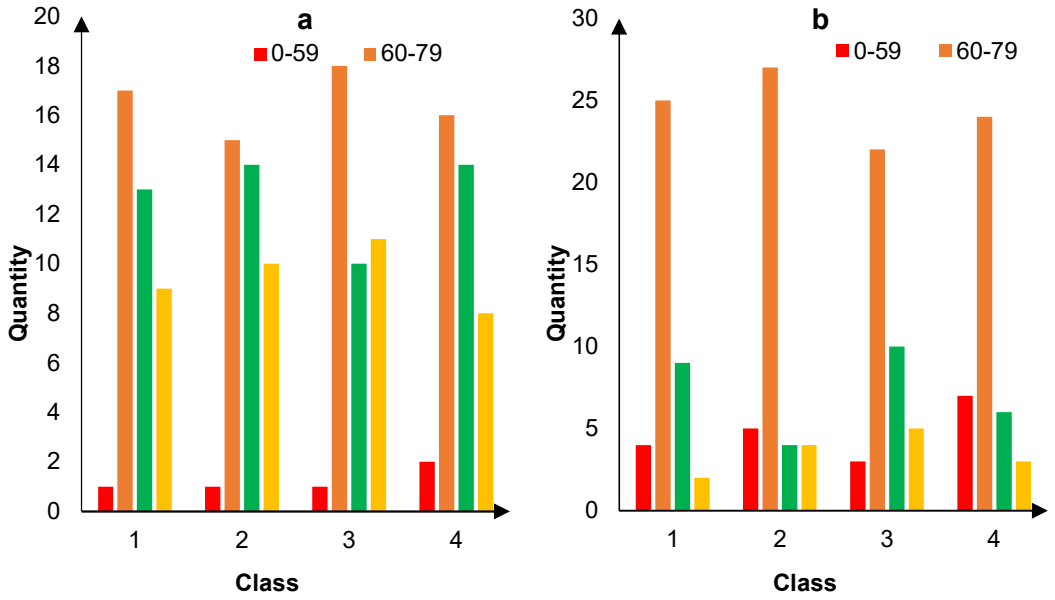

Figure 4: Analysis of the effect of literal translation and literal translation annotation on word layer inequality in the experimental group and the control group

(3) Moderate naturalization method

In the discussion of domestication and foreignization, this paper points out that domestication translation requires the translator to desalinate the source language culture and also borrow the target language culture, which would lead to the confusion of the two cultures and the dislocation of the translation. However, this does not mean that domestication cannot be adopted in translation, but that people should grasp the “degree” [10], [11]. If the “foreignization” method is adopted for translation, the readers of the target language may have difficulties in the reading process, or the fluency of the translation may be affected due to excessive use. Therefore, the translator can look at the translation from the perspective of culture and translate correctly, that is, adopt appropriate domestication strategy. However, in the process of domestication, the translator should grasp the basic principle of “degree”, otherwise there would be three different versions. Misplacement translation is a common phenomenon in cross-cultural communication, which is caused by the translator’s unconsciousness. Some translations are intentional, which also reflects that other translators have wrong understanding of translation or have not handled it correctly in practice. Therefore, in daily life, translators should pay attention to the cultivation of cultural awareness and improve their cultural sensitivity. According to the specific situation, three methods should be adopted: foreignization, foreignization annotation and moderate domestication to avoid different versions [12], [13]. Therefore, this paper conducts an experimental test based on the moderate normalization method, and the effect is shown in Figure 5.

As shown in Figure 5, Figure 5 (a) shows the analysis of the effect of the treatment of word layer inequality by the moderate normalization method in the experimental group. Figure 5 (b) is the analysis of the effect of the control group’s moderate naturalization method to deal with word layer inequality. It can be seen from the figure that the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 2, 2, 3 and 1 respectively, and the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 13, 13, 9 and 15 respectively. The number of good students in Class 1, 2, 3 and 4 of the experimental group was 10, 11, 11 and 8, and the number of good students in Class 1, 2, 3 and 4 of the experimental group was 15, 14, 17 and 16, respectively. In the control group, the number of students who failed in classes 1, 2, 3 and 4 was 10, 14, 13 and 9, respectively. The number of people who passed classes 1, 2, 3 and 4 in the control group was 15, 15, 17 and 13

respectively, and the number of people who passed classes 1, 2, 3 and 4 in the control group was 13, 8, 9 and 15 respectively. The number of excellent students in Class 1, 2, 3 and 4 of the control group was 2, 3, 1 and 3, respectively. Compared with the control group, the experimental group has a better effect of moderate naturalization.

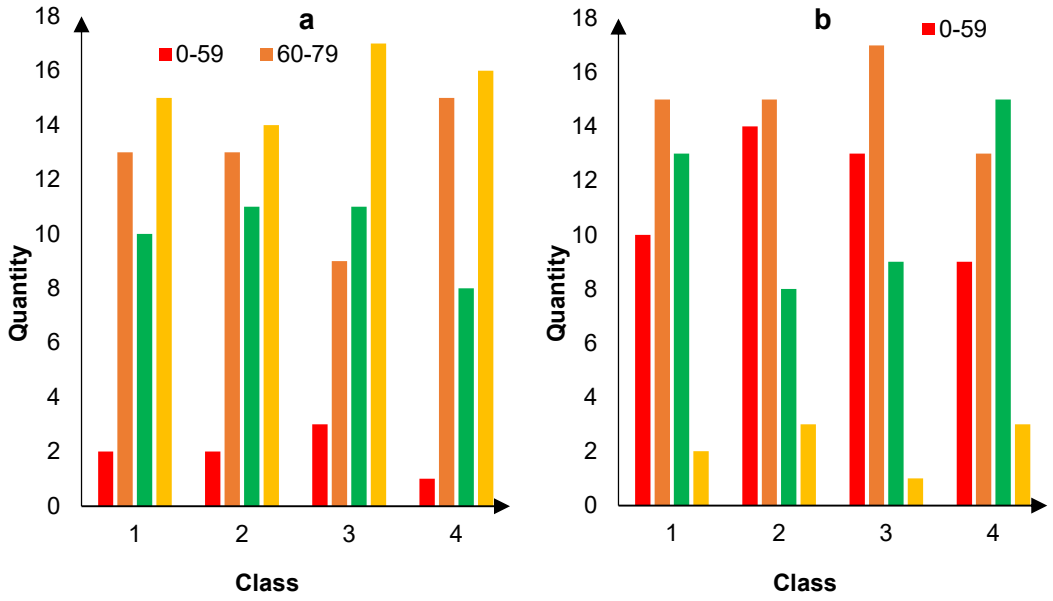

Figure 5: Analysis of the effect of the treatment of word layer inequality by the moderate normalization method in the experimental group and the control group

(4) Free translation

When translating, if there are words with national cultural connotations, the translator can choose free translation. Free translation means to fully follow the expression standard of the translation in the translation without considering the expression form of the source language, and maintain the faithfulness to the translation method of the translation [14], [15]. Compared with other translation methods, free translation pays more attention to the cultural background of English readers, and its expression is easier to be accepted by readers. Therefore, through free translation, the translator can correctly understand the cultural phenomenon in the source language, and interpret the pragmatic meaning of the word through translation, so that the readers of the source language can recognize its unique cultural phenomenon.

As shown in Figure 6, Figure 6 (a) shows the analysis of the effect of the experimental group's treatment of word layer inequality using the free translation method. Figure 6 (b) shows the analysis of the effect of the free translation method in the control group to deal with word layer inequality. It can be seen from the figure that the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 1, 1, 1 and 1 respectively, and the number of people who failed in classes 1, 2, 3 and 4 of the experimental group was 5, 6, 6 and 8 respectively. The number of good students in Class 1, 2, 3 and 4 of the experimental group was 16, 14, 13 and 14, and the number of good students in Class 1, 2, 3 and 4 of the experimental group was 18, 19, 20 and 17, respectively. In the control group, the number of students who failed in classes 1, 2, 3 and 4 was 7, 8, 9 and 9 respectively. The number of people who passed classes 1, 2, 3 and 4 in the control group was 10, 12, 15 and 13 respectively, and the number of people who passed classes 1, 2, 3 and 4 in the control group was 18, 14, 9 and 12 respectively. The number of excellent students in Class 1, 2, 3 and 4 of the control group was 5, 6, 7 and 6, respectively. Compared with the control group, the experimental group has better effect of free translation.

To sum up, these four methods can solve the inequality in English-Chinese translation, while the experimental group using image processing technology would have better results. The method used depends on the actual situation. Reasonable use of these methods would bring unexpected results.

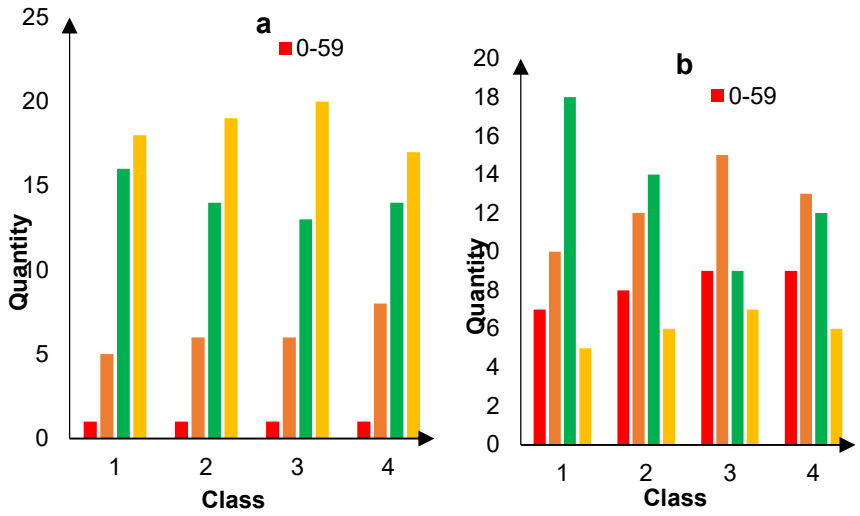

Figure 6: Analysis of the effect of free translation method on word layer inequality in the experimental group and the control group

IV. Conclusions

Word level errors in English-Chinese translation are very common. Therefore, in the process of translation, the translator must fully recognize these errors and analyze them. According to different texts and contexts, correct translation methods should be used reasonably and accurately to deal with various errors. It is neither appropriate nor practical to try to deal with the error phenomenon as a whole. The specific translation method depends on the specific situation of the translator. Only in this way can the inequality in translation be better eliminated. The experimental results of this paper confirm that the four methods can deal with the phenomenon of inequality in English-Chinese translation, but people should analyze it according to the actual situation and adopt a more suitable method.

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