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The equivalent study of the English translation in information technology according to the perspective of functional translation

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ABSTRACT

With the fast development of the globalization of science and technology, the connection between China and foreign countries are becoming closer so that the English translation in information technology comes into being and it is widely used as a tool of communication in all the fields. The English translation in information technology according to the perspective of functional translation now has become an important part in the field of sci-tech English translation and it carries the tough mission of the information communication technology. This passage explains the related history and the different phases of functional translation. It also introduces the principle of translation and uses principal component analysis to analyze the subjective and objective factor in the English translation in information technology according to the perspective of functional translation. The result of the analysis shows that the main component of the subjective reason that influences the English translation in information technology according to the perspective of functional translation is history and custom cultures. The component of the objective reason that influences the English translation in information technology according to the perspective of functional translation is the language and custom factors. But we need to point out that this passage of the equivalent study of the English translation in information technology according to the perspective of functional translation is not deep enough, and we hope this research can make some promotion for the development of the relative fields.

KEYWORDS

Functional translation; Information technology; Equivalent study; English translation; Mathematical model.

INTRODUCTION

In the second half of the nineteen century, Reims the first time put forward the relative theory about translation in *translation criticism.* The passage points out the functional translation will be an important mark in whether the translation theory becomes mature or not. The influence of the functional translation will become bigger. The primitive translation is based on the word but it is rather stiff and influences the origin meaning of the passage. So, Reims encourages the method to use the functional translation and the theory of equivalent translation is still contained. The devotion of Reims cannot be ignored and this makes the study of the functional translation more important.

After Reims, Vermeer put forward the idea to see translation as the commutation and communication of the information between the two languages, and the receptor as the important factor put forward in teleology that the translation production of the receptor in particular range is included in all. So we can come to the conclusion that the teleology explains the object that the translation accepts is regarded as the main study object. Later Manttari delays and deepens Reims' functional translation and explains the translation is in a rather narrow area in the original text, but the translation behavior is in a rather broad area in the translation works.

Because of the hard work of the last generations, the functional translation is in great development and modification. It's mainly are the scholars represented by Node, who is in deep study in translatology and linguistics, and makes great devotion to enhance the translation theory.

THE EQUIVALENT STUDY OF THE ENGLISH TRANSLATION IN INFORMATION TECHNOLOGY ACCORDING TO THE PERSPECTIVE OF FUNCTIONAL TRANSLATION

The establishment of the functional translation with teleology as its core, all the translation should follow the fidelity principle of the teleology. The teleology consists of consistency and teleonomy. Besides, the fidelity principle is involved in the linguistic consistency between the translation and the original text, and this is one of the important principle that makes the translation becomes more consistent.

The interactive relationship of the English translation in information technology according to the perspective of functional translation

Base on the theoretical frontiers, we can know that the production, penetration and enhancement of the English translation in information technology according to the perspective of functional translation is related to the exchange of between culture. The translator is not only the translator, author and reader based on the linguistic communication, and it also includes the touch on heart and the communication on mind. Based on the perspective of the human interaction, the translation involved in the author, translator and reader and other characters' relationship, if we need the connection among them, we need to use the English translation in information technology according to the perspective of functional translation and bring forth more reasonable method and based on the English translation in information technology according to the perspective of functional translation to organize the information in the original text to make it keep the original meaning while during the translation.

The flexible adaptation of the English translation in information technology according to the perspective of functional translation

The main idea of the functional translation is established in the communication among human. In the whole process of translation, human is the main character, when we do the translation, we cannot just translate the text, the language environment is also one of the conclusive factors. In the process of translation, it is the translator who chooses the method of the translation and according to the aim of the translation to reach the requirement of the author. So the translator need to find out the readers

requirement of the translation knowledge level and the production, then he can decide which method to choose.

THE MODEL OF THE ENGLISH TRANSLATION IN INFORMATION TECHNOLOGY ACCORDING TO THE PERSPECTIVE OF FUNCTIONAL TRANSLATION

The establishment of this model is to study the main influence factor of the English translation in information technology according to the perspective of functional translation. Based on others' research and with the help of the questionnaire survey, we come to the conclusion that the main method which influences the English translation in information technology according to the perspective of functional translation is interaction relationship and flexible adaptation. According to those two method, we do the questionnaire survey to some students in a language college.

There are 3000 questionnaire survey in all and the result is as follow.

TABLE 1 : The subjective method that formalize the English translation in information technology according to the perspective of functional translation

The subjective reason	The choosing frequency	The proportion
history culture	446	86.1%
custom culture	258	48.4%
the way of thinking	197	38.8%
the cultural background	184	36.7%
the aesthetic attitude	121	24.4%
the tactics of translation	114	22.0%
the level of English linguistics	107	20.7%
value	82	16.0%
professional attitude	74	15.8%
individualization	50	10.7%

Form TABLE 1, we can see that the proportion of the history culture and the custom culture are the biggest and the proportion of individualization is the smallest. In order to see all the factors relative conditions more clearly, we make the broken line graph as Figure 1.

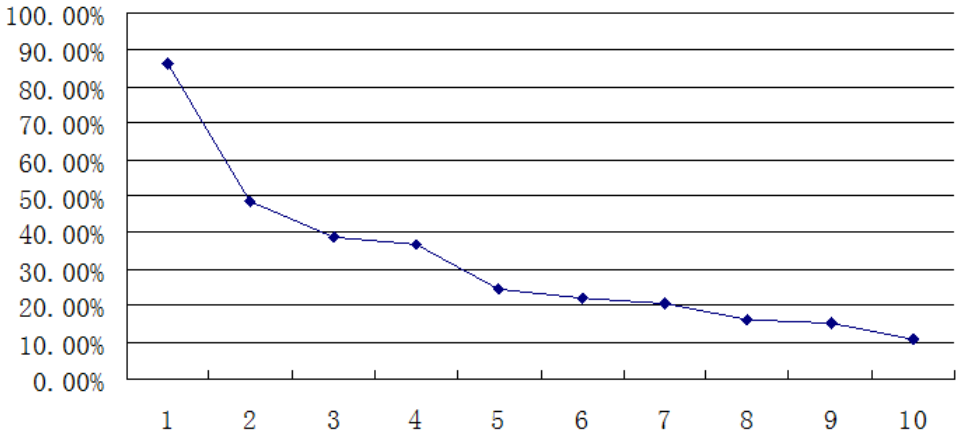

Figure 1 : Dynamic IT English translation subjective method for forming a functional perspective diagram translation

Figure 1 the mark "1" represents history culture, "2" represents custom culture, "3" represents the way of thinking, "4" represents the cultural background, "5"represents the aesthetic attitude, "6"

represents the tactics of translation, “7”represents the level of English linguistics, “8” represents value, “9”represents professional attitude, “10”represents individualization. Form Figure 1, we can see that the proportion of 1-10 is diminishing.

TABLE 2 : The objective method that formalize the English translation in information technology according to the perspective of functional translation

The objective factors	The statistics of the very important and important kinds of people	percentage
Linguistic factor	294	58.5%
Culture factor	209	41.4%
Individual factor	136	26.7%
The linguistic environment factor	124	24.7%
The way of thinking	84	16.9%
The custom culture	85	16.1%
The history culture	41	8.4%
Not clear	14	2.9%

The statistics of the objective factor is based on the two kinds people who thinks that the linguistic and culture factor is very important to go through, as TABLE 2. The object factor concludes the influence of people or object to the subjective behavior. It’s easy for us to find out that the subjective of interaction relationship of the English translation in information technology according to the perspective of functional translation and the subjective of the flexible adaptation of the English translation in information technology according to the perspective of functional translation is unanimous, just different in the proportion, as Figure 2.

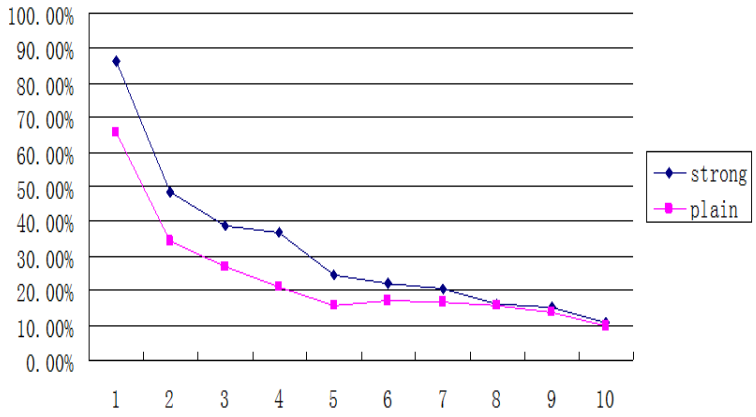

Figure 2 : Forming a functional translation objective perspective moving IT English translation methods for map

Figure 2 is the comparative graph between interaction relationship and the flexible adaptation of the English translation in information technology according to the perspective of functional translation. The condition of the mark in Figure 2 is the same as Figure 1. From Figure 2, we can see that the proportion of the interaction relationship of the English translation in information technology according to the perspective of functional translation is small than the flexible adaptation of the English translation in information technology according to the perspective of functional translation.

The analysis of the main component’s main idea is the dimensionality reduction of variation. It is the method which makes the multiple variations defers to few main variations. And it is used in data compression, system evaluation, analysis of regression, weighted analysis in general.

The concept of the analysis of the main component

The main method of the main component analysis is after the dimensionality reduction of the variation then recombination the relative variations to a independent variation. Though this method we can replace the original variation so that remove our attention to the relative variation of the maximum variation in all the observations, and then we regard those change relatively modest variations as constant, which is to ignore them, so that we can reduce the number of the variation.

If there are m in the original variations, which are $x_1, x_2, \cdots, x_m$, according to n samples, the relative measured value is $x_{ik}(i = 1,2,\cdots,n)$, and we can standardize $k = 1,2,\cdots,m$, then x_k is changing to x_k^*, so the corresponding formula is :

$$\mathbf{x_k^* = \frac{x_k - \overline{x_k}}{s_k},\ k = 1,2,\cdots,m} \qquad \textbf{(1)}$$

$\overline{x_k}$ and s_k is the average number and standard deviation of x_k, the average number of x_k^* is 0, and the standard deviation is 1.

According to the entire original index's measured value x_{ik} or the x_{ik}^* after standardization, we can know the coefficient b_{kj}. And after the standardization we can establish the formula of z_j, $z_j = \sum_k b_{kj} x_k^*$. We can also use the original index x_k to show the formula of z_j:

$$\mathbf{z_j = \sum_k \tilde{b}_{kj} x_k^* + a_j} \qquad \textbf{(2)}$$

There are two requirement of the confirmation of b_{kj}:

The aggregative indicator is independent or not related.

The aggregative information according to every aggregative indicator is the same as the maximum characteristic value of the relative feature vector. In general, the relative rate of contribution of the characteristic value of the aggregative indicator will not below 80 percent.

The general steps of the analysis of the main component

Calculate $\overline{x_k}$ and $s_k(k, j = 1,2,\cdots,m)$ based on the observation data.

(2) The variance contribution of the rate of contribution, cumulative, and characteristic value $(j = 1,2,\cdots,m)$ is based on the correlation coefficient matrix R, and the number p that the main component remains is based on the cumulative to make sure.

If there are n indicator, and there are p relative variations, thus it becomes a matrix of $n \times p$:

$$X = \begin{cases} x_{11} & x_{12} & \cdots & x_{1p} \\ x_{21} & x_{22} & \cdots & x_{2p} \\ \cdots & \cdots & \cdots & \cdots \\ x_{n1} & x_{n2} & \cdots & x_{np} \end{cases} \qquad \textbf{(3)}$$

If we definite the original indicator as x_1, x_2, ... , x_p, after the comprehensive analysis, the relative indicator turns to z_1, z_2, ... , zm ($m \le p$), then we have:

$$\begin{cases} z_1 = l_{11}x_1 + l_{12}x_2 + \cdots, + l_{1p}x_p \\ z_2 = l_{21}x_1 + l_{22}x_2 + \cdots, + l_{2p}x_p \\ \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \\ z_m = l_{m1}x_1 + l_{m2}x_2 + \cdots, + l_{mp}x_p \end{cases} \quad \textbf{(4)}$$

The evaluation of l_{ij} should follow:

(1) z_m is an independent variation in z_1 , z_2 , z_{m-1}, and it is has no connection with others. z_1, z_2, …, z_m is relative to the original indicator x_1 , x_2 ,.., x_p as number1, number2…, number m. the variance of z_2 , z_3 ,.. , z_m is diminishing and z_1 owns the biggest proportion.

(2) there are no connection between z_i and z_j ($i \neq j$; i , j = 1 2 ,.. , m).

Based on the last description we can find the weight of the l_{ij} (i = 1 2 ,.. , m ; j = 1 2 ,.. , p) of the main component of x_j (j = 1 2 ,.. , p) is z_i (i = 1 2 ,.. ,m). So we can relative parameter values of the x_1 , x_2 ,… , x_p matrix, and this is the result.

SPSS COMPUTATION

With the SPSS software, we do the factor analysis according to the interaction relationship and the subjective factor of the flexible adaptation of the English translation in information technology according to the perspective of functional translation, and the result is as follow.

The analysis of the subjective reason

TABLE 3 : The chart of the analysis of the subjective reason

number	Original characteristic value			Extraction of sum of squares loaded		
	Comprehensive statistics	Variance percentage	Cumulative percentage	Comprehensive statistics	Variance percentage	Cumulative percentage
1	10.000	100.000	100.000	10.000	100.000	100.000
2	3.325E-16	3.326E-15	100.000			
3	2.821E-16	2.821E-15	100.000			
4	1.469E-16	1.469E-15	100.000			
5	9.412E-17	9.412E-16	100.000			
6	2.515E-17	2.513E-16	100.000			
7	-1.777E-16	-1.777E-15	100.000			
8	-3.498E-16	-3.498E-15	100.000			
9	-4.228E-16	-4.228E-15	100.000			
10	-8.703E-16	-8.704E-15	100.000			

Form TABLE 3, we can see that the cumulant of component 1 is a hundred percent, which means the subjective factor that influences the English translation in information technology according to the perspective of functional translation is history culture and custom culture, and the relative scree plot is as Figure 3.

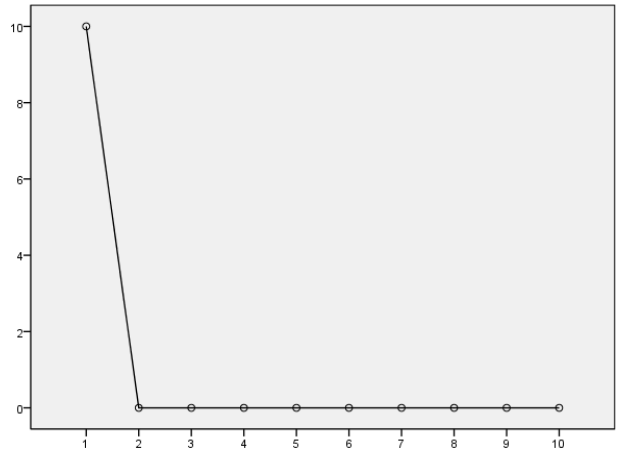

Figure 3 : Scree plot of subjective motivation

Form Figure 3, we can see that the component on the maximum slope is number1, and component 2-10 are all in the small slope position, so Figure 4 shows the main component intuitively.

The analysis of the objective reason

TABLE 4 : The chart of the analysis of the objective reason

number	Original characteristic value			Extraction of sum of squares loaded		
	Comprehensive statistics	Variance percentage	Cumulative percentage	Comprehensive statistics	Variance percentage	Cumulative percentage
1	8.000	100.000	100.000	8.000	100.000	100.000
2	4.126E-16	5.159E-15	100.000			
3	2.492E-16	3.115E-15	100.000			
4	1.514E-16	1.896E-15	100.000			
5	2.038E-17	2.547E-16	100.000			
6	-8.301E-17	-1.038E-15	100.000			
7	-1.127E-16	-1.402E-15	100.000			
8	-3.541E-16	-4.431E-15	100.000			

Form TABLE 4, we can see that the cumulant of component 1 is a hundred percent, which means the objective factor that influences the English translation in information technology according to the perspective of functional translation is linguistic factor and culture factor, and the relative scree plot is as Figure 4.

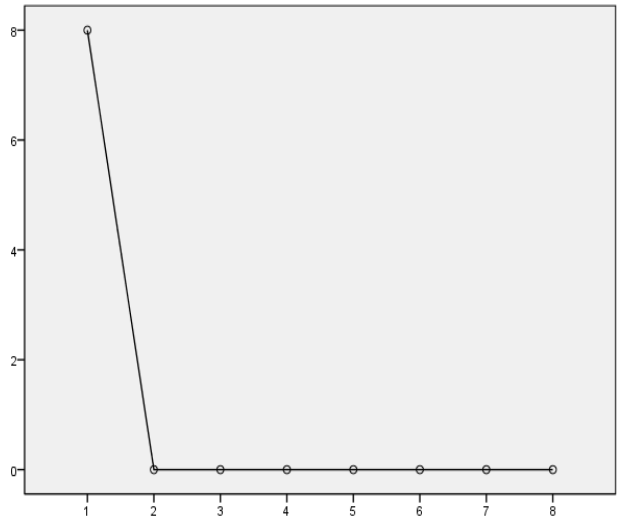

Figure 4 : Scree plot of objective motivation

Form Figure 4, we can see that the component on the maximum slope is number1, and component 2-8 are all in the small slope position, so Figure 4 shows the main component intuitively.

CONCLUSION

This passage uses the principal component analysis in the equivalent study of the English translation in information technology according to the perspective of functional translation. After the calculation of the relative software, we can come to the conclusion that the subjective factor that influences the English translation in information technology according to the perspective of functional translation is history culture and custom culture, the objective factor that influences the English translation in information technology according to the perspective of functional translation is linguistic factor and culture factor. So we bring forth reasonable suggestion in this passage, in order to improve the level of the equivalent study of the English translation in information technology according to the perspective of functional translation, we should enhance the ability of the English translation in information technology according to the perspective of functional translation, enhance the communication in that field to make it a new development in the field.

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