A translation process study of the metaphorical competence of native Chinese-speaking translators

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Abstract

This paper is aimed to explore the translation strategies and methods employed by native Chinese speaking translators when translating conceptual metaphors from Chinese into English, an issue that needs urgent attention and is of great significance to translation studies, pedagogy, and practice. This study collected keyboard and screen records generated by two groups of Chinese-speaking translators—professional and student, who translated two articles from Chinese into English. The data was then used together with retrospective interviews to identify and describe the translation strategies and methods employed by the two groups of translators when translating conceptual metaphors. The study has found significant differences between professional and student translators in the use of translation strategies. Student translators are found to use more lexical and grammatical strategies than professional translators, while the latter use more semantic strategies than the former. In addition, this study has also found that statistically significant differences between the two groups in the pause time during the pre-translation and post-translation revision stages, but no significant difference in the draft translation stage. The results of this research project will benefit translation studies in general, as well as teaching and practice in Chinese-English translation.

Keywords: translation process, translation strategy, conceptual metaphor, metaphorical competence, Chinese into English, cognitive translation studies, professional translator

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INTRODUCTION

The introduction of Conceptual Metaphor Theory (Lakoff and Johnson 1980) in cognitive linguistics initiated the 'cognitive turn' of metaphor studies. After 30 years of development, remarkable achievements have been made in the fields of cognitive linguistics, cognitive psychology, psycholinguistics, psychology, sociology, anthropology, and philosophy. In the field of applied linguistics and language teaching, some of the pioneering studies of conceptual metaphor include Low (1988), Cameron (2003), Kecskes and Cuenca (2005), Danesi (1993) and Littlemore (2001). In addition, translation researchers have also taken a keen interest in conceptual metaphor, and research on the translation of conceptual metaphor has proliferated (Maalej 2008; Schäffner 2004).

MC mainly refers to the degree of metaphor understanding and metaphor output. "Understanding" covers how to identify metaphors, the speed of identification, and the degree of reasonable interpretation of metaphors. "Output" includes the quantity, frequency, and the ability to produce appropriate metaphors under different contexts. These views of metaphorical competence have become the main reference for most scholars to measure metaphorical competence (Kecskes and Cuenca 2005; Gardner and Winner 1978). In recent years, cognitive studies of conceptual metaphor have begun to focus more on the use of metaphor in real discourse, focusing on the actual metaphorical manipulation at the level of discourse. This trend is an important development in metaphorical competence (Littlemore et al. 2014).

Many scholars of cognitive translation studies (Gerloff 1986; Krings 2005; Lörscher 1991; Séguinot 1991; Vinay and Darbelnet 1958) have argued that the choice of translation strategy constitutes the translation process, which in turn is made up of a specific translation procedure (i.e. a series of actions by the translator). To study the translation process, it is necessary to start with the translation procedure. For example, Vinay & Darbelnet (1958) first distinguished seven translation procedures by analysing texts in English and French, and they further classified the seven procedures into literal and implicit translation strategies. Löscher (1991) analysed 22 core elements in the translation process and used these 22 elements in different ways to form three translation strategies, which constitute the translation process. Schreiber (2006) revises the translation strategy proposed by Vinay & Darbelnet (1958) by splitting it into three levels: lexical, syntactic and semantic. Since Schreiber's (2006) classification is transparent and makes it easy to determine the translation strategies used by translators in the translation process, this study adopts this classification of translation strategies.

In cognitive psychological studies of translation strategies, the number of translation strategies used has been the focus of almost all of these studies (Bernardini 1999). Research indicates that professional translators use significantly more translation strategies than non-professional translators in terms of constructing content, checking for appropriateness of style and genre, and monitoring the target text (Jääskeläinen 1989; Lörscher 1996; Séguinot 1989). Professional translators are more flexible in their strategies, using a wide range of strategies and using a variety of strategies to solve macroscopic problems, whereas student translators use strategies that focus more on improving vocabulary or syntax and pay excessive attention to linguistic form, making translations not only non-equivalent to the source text in terms

of meaning but also full of grammatical and stylistic errors due to the constraints of the source text form (Lörscher 2005; Gerloff 1987; Fraser 1996).

In addition, a number of studies have found that the length of the translation units focused by professional and non-professional translators in the translation process is directly related to the level of competence of the translator (Gerloff 1987; Séguinot 1996): higher competence translators use longer translation units (Gerloff 1987; Séguinot 1996; Lörscher 1996; Tirkkonen-Condit 1989), and experienced translators translate in units larger than words, such as phrases, sentences or paragraphs, which are much longer than those of non-professional translators (Lörscher 1996, 2005). In the revision stage of the translation process, professional translators check the style and type of text for appropriateness, whereas non-professional translators generally check only the solution to the translation problem and the result (Lörscher 2005; Jakobsen 2002; Künzli 2009; Séguinot 1989). Higher competence level translation students spend the most time in the revision phase and the least time in the draft translation phase (Castillo 2015).

Although studies on translation strategies have greatly broadened the horizon of translation research, there seems to be a lack of research on metaphorical competence. In addition, there are few studies on the cognitive translation of native Chinese translators, and the findings need to be further verified. Therefore, this study aims to conduct an exploratory study on the metaphorical competence of Chinese to English translation, and to discover its general patterns and specific features. The specific research questions are as follows:

1. What translation strategies are used by native Chinese translators of different translation competence levels in the process of Chinese to English translation of conceptual metaphors?

2. Are these translation strategies related to the translators' translation competence levels?

METHODS

This study adopted a mixed method of qualitative and quantitative research, i.e. a combination of reflective and observational approaches (Muñoz Martín 2013). In the observational part, we used keystrokes and video replays to understand the purpose of the translation behaviour (e.g., pausing, revising, querying) at each stage of the translation process, i.e., translation strategies. In the reflective part, we used retrospective interviews to verify the translation strategies used by the participants in the translation process, and synthesised various data to derive the types of cognitive behaviour and translation strategies in the translation process, and their relationship with translation competence.

Research participants
The participants in this study consisted of graduate students (non-professional translators) and professional translators. The group of graduate students was labelled as Group B. All members of this group had an English proficiency equivalent to a score of TOEIC 850 or above and had received systematic translation instruction; the group of professional translators was labelled as Group A. All members of this group had a graduate degree in translation, an English proficiency equivalent to a score of TOEIC 900 or above, and translation experience of more than 5 years. The participants in

Group A were classified as the high competence group. The study recruited 25 subjects from each of Groups A and B.

Source texts
In this study, the participants were asked to translate two general documents from Chinese into English, with similar content and level of difficulty. The two texts consisted of 354 words (A) and 352 words (B). The translation time was 70 minutes for each text and a 10-minute break in between. During the translation process, the participants were allowed to use any web-based query tools and dictionaries.

Identification of conceptual metaphor
In this study, ten conceptual metaphors were identified in each of the original texts A and B to observe the strategies adopted by the translators in their translation process. The MIP Metaphor Identification Procedure Pragglejaz Group (2007, 3) was used to identify the metaphors in this study as its reliability had been widely recognized in the metaphor research circle (Steen et al. 2011).

Research instrument
This study used Translog (Jakobsen 1999), a keyboard recording and video recording tool, to record the translation process of the research subjects. Inputlog can record keyboard and mouse actions in any other software in the Windows environment, including text editing such as modifying, deleting, adding, cutting, copying, mouse movements, as well as which dictionaries the writer has used, which words have been queried, which websites have been opened, etc. It shows the time of keystrokes, and the text input process can be replayed at any point in time by simply clicking on the play button in the program. A linear representation is also available, which describes the various activities of the text input process through a series of symbols.

Data collection and data coding
The data collected in this study using Inputlog software included: (1) keyboard and mouse activity and time; (2) activity and time for querying web-based translation tools; and (3) pause time. We used Schreiber's (2006) classification system for translation strategies to code translation activity as follows.

   (1) Lexical borrowing
   (2) Lexical substitution
   (3) Change of a lexical unit structure
   (4) Word-for-word translation
   (5) Permutation
   (6) Expansion
   (7) Reduction
   (8) Intracategorial change
   (9) Transposition
   (10) Transformation
   (11) Semantic borrowing
   (12) Modulation
   (13) Explication
   (14) Implication
   (15) Mutation

(1) - (4) were translation strategies at the lexical level; (5) - (10) were translation strategies at the syntactic level; (11) - (15) were translation strategies at the semantic level.

Retrospective interviews

After the initial analysis of the keyboard and video recordings, the researchers conducted retrospective interviews with the research participants to fill in the gaps in the keyboard recordings and post-replay information and further clarify the translators' thoughts on the translation of metaphors and the reasons for adopting a particular translation method or translation strategy. The retrospective interview was conducted in a hope of achieving multiple cross-evidence.

Data analysis

From the perspective of the translation process, this study simplified the translation process into three stages: Orientation, Draft and Revision. Orientation was the interval between the time the translator clicked on the start button and the time before the first letter was typed. It referred to the time used by the translator to conceptualize how the translation should be done; Revision was the time interval after the translator had translated the first draft and before the click on submit, which referred to the time used by the translator to review and revise the translation. Draft was the entire translation time minus Orientation and Revision time, which referred to the time used by the translator to translate the full text.

In this study, we used Schreiber's (2006) categorization of translation strategies to identify the strategies used by groups A and B translators in translating conceptual metaphors and conducted descriptive statistical analysis on the translation strategies at each stage. Finally, we used a t-test to analyse whether there were significant differences in the use of each translation strategy between groups A and B in translating conceptual metaphors.

RESULTS AND DISCUSSION

Research question 1

Research question 1 regards what translation strategies are used by different groups of translators (professional and student translators) in translating metaphors and whether different groups of translators use different translation strategies. In this study, there are three types of translation strategies for conceptual metaphors: translation strategies at the lexical level, translation strategies at the grammatical level, and translation strategies at the semantic level. The number of times the three translation strategies used by professional translators (group A) and student translators (group B) respectively were calculated and shown in Table 1, using the descriptive statistics, and the results of a Chi-square test are shown in Table 2.

Table 1 Cross-tabulation of translation strategies and translator groups

Count Expected	Group A	Group B	Total
Lexical	99	149	248
	124	124	
Grammatical	201	231	432
	216	216	
Semantic	200	120	320
	160	160	
Total	500	500	1000

Table 2 Chi-square of translation strategy

N	DF	-LogLike	RSquare (U)
1000	2	16.224404	0.0234
Test	**ChiSquare**		**Prob>ChiSq**
Likelihood Ratio	32.449		<.0001*
Pearson	32.164		<.0001*

The chi-square test results (p<0.001) indicate that there are significant differences in the use of translation strategies between professional translators and student translators. Specifically, the student translators used more lexical and syntactic strategies than the professional translators, while the professional translators used more semantic translation strategies than the student translators (Table 1).

The result of this study is largely in line with previous research on metaphorical competence, i.e. translators with low metaphorical competence is less likely to be able to produce novel metaphors. In translation, because of the large linguistic differences between Chinese and English, translators with low metaphorical competence are more likely to stick to the metaphorical form of the original text and extend it more often to the target text. They are more likely to use metaphors at the lexical and syntactic levels. Translators with higher metaphorical ability can take into account the semantic aspect of metaphors and adopt a semantic translation strategy.

As a linguistic expression, metaphors for different expressions do not exist in isolation from each other; they are connected. For example, the concept of parent-child relationship is metaphorically represented by the use of bank accounts, assets and saving and withdrawing money,which are interconnected. These connections are reflected at the level of words, sentences and paragraphs, and require the translator to consider them in the context of words, phrases, sentences and paragraphs respectively. When a translator sees a text and only starts with the words, it is easy to form fixed translation habits of mind and solid translation patterns. On the other hand, if not enough attention is paid to the metaphors in the target text, it is easy to make the translated text lose its aesthetics. Language is a comprehensive discipline that integrates various aspects of culture and aesthetics. If there is a lack of macro control of the metaphors in the discourse, the appreciation of the original language will be lost and there will be no soul of the original text.

Research question 2

Research questions 2 concerns with how different groups of translators use various translation approaches when translating conceptual metaphors, and whether different groups of translators use different translation methods. Since each of the above translation strategies consists of five specific translation methods (Schreiber, 2006), we used descriptive statistics and Chi-square test to further analyse the translation methods, and the results are shown in Table 3. Among all the 15 translation methods, the professional translators used Semantic borrowing, Modulation, Implication, and Mutation significantly more often than the student translators, while the student translators used Permutation, Word-for-word translation, Reduction, Lexical borrowing, Expansion, and Transformation significantly more frequently than the professional translators. There was no significant difference between the two groups in the use of the other translation methods (i.e., Intracategorial change, Transposition, Change of a lexical unit, Lexical substitution, and Explication).

Table 1: Cross-tabulation of translation methods and translator groups

Count Expected	A	B	Total
Intracategorial change	31	31	62
	31	31	
Permutation	28	37	65
	32.5	32.5	
Word-for-word translation	22	39	61
	30.5	30.5	
Transposition	39	38	77
	38.5	38.5	
Reduction	27	39	66
	33	33	
Lexical borrowing	17	36	53
	26.5	26.5	
Change of a lexical unit	29	25	54
	27	27	
Lexical substitution	19	29	48
	24	24	
Semantic borrowing	43	32	75
	37.5	37.5	
Modulation	48	29	77
	38.5	38.5	
Implication	24	18	42
	21	21	
Expansion	29	45	74
	37	37	
Transformation	35	45	80
	40	40	
Mutation	74	30	104
	52	52	
Explication	35	27	62
	31	31	
Total	500	500	1000

The results of the Chi-square test (Pearson p<0.001) for translation methods and translator groups indicate that the above differences in translation methods between professional and student translators are significant (see Table 4).

Table 2: Chi-square test of translation methods and translator groups

N	DF	-LogLike	RSquare (U)
1000	14	24.912579	0.0359
Test	**ChiSquare**	**Prob>ChiSq**	
Likelihood Ratio	49.825	<.0001*	
Pearson	48.886	<.0001*	

Previous research has found that identifying and applying metaphors is an important facilitator for learners to improve their second language writing and develop cross-cultural communicative competence and a global awareness of context and discourse. This is just as important in the learning process of translation. While translation teaching focuses on the transformation of words, sentences and passages in different language contexts, the metaphorical translation method focuses on the associative nature of objects in different contexts. The associative nature of metaphors facilitates students to develop a dynamic sense of context and an awareness of the overall construction of the discourse. Translation teachers need to develop students' ability to spot metaphors in texts. Language comes from life and is above life, and metaphor is an ability that arises in the process of understanding the world. There are many metaphors to be found in texts, and this requires learners to enhance their metaphorical thinking and their ability to find metaphors in texts.

In addition, both translation and metaphor have both linguistic and cultural expressions, so in order to appreciate the translated content, we must not only mechanically translate the language directly, but also pay attention to the metaphorical content behind the language, and in translation teaching, we must pay attention to the

balanced development of the macro and micro structures of the teaching content. Focusing on the balanced development of macro discourse and micro structure, Danesi (1993) once points out that the essence of metaphor is the interaction between the metaphorical expression and the context. It is important to focus on the balanced development of translation in the process of translation. On the one hand, the process of translation should pay attention to the accuracy of word and phrase translation. The difference in language structure between Chinese and English leads to differences in the expression of utterances. In the process of teaching, teachers should strengthen students' ability to use and transform words and sentences, paying particular attention to the metaphorical expressions in utterances, so as to enhance students' translation ability. On the other hand, it is important to focus on the balanced development of macro and micro. Macro refers to the macro aesthetics of the overall discourse, as well as aspects such as linguistic expressions from a cultural perspective.

Research question 3

Research question 3 is about whether there are differences between the professional translators and student translators in the various stages of translation process of metaphorical translation. Many previous translation process studies focus on the variable of pause time because it reflects the translator's cognition and thinking in a certain way (Angelone 2016; Balling, Hvelplund, and Sjørup 2014; Cifuentes-Ferez and Rojo 2015). This study adopts the general practice of the previous translation process research and sets the threshold value of effective pause at 200ms. By analysing the keyboard records of Inputlog, the overall translation processes of the two groups of translators are described. Figures 1 and 2 plot the effective pauses and keystrokes of the translation process for the professional and student translators, respectively.
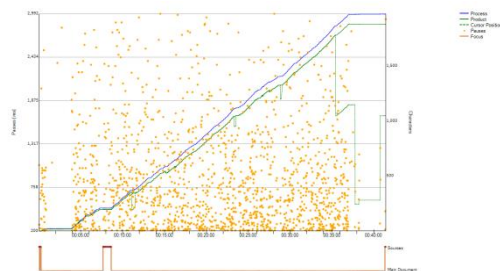

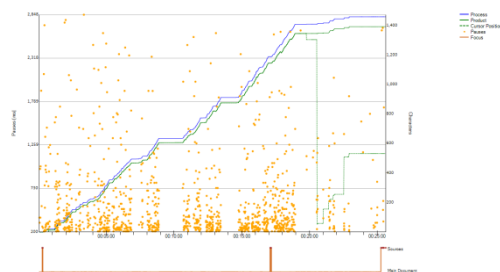**Figure 1: Professional translator translation process**

Figure 2: Student translator translation process

The process diagram of professional translators (Figure 1) shows that the pauses (yellow dots in the diagram) of professional translators throughout the translation process present a relatively homogeneous distribution, with more pauses below 1,317ms (1.3 seconds), indicating relatively short periods of reflection. Since the purpose of the process diagram is to provide an intuitive picture, some of the longer pauses are outliers and are not presented. The process diagram for student translators (Figure 2) shows that the student translators' pauses are mostly densely distributed below 730ms and seem to be divided into 3-4 blocks. Pauses of 2-3 seconds or so are significantly less than those of professional translators and are scattered. Pauses of 700ms can hardly be attributed to their thinking about translation strategies but are more likely due to their slow typing speed. The blue process and green product lines corresponding to the blank sections between blocks are horizontal, indicating that there is no keyboard activity at the time. This may indicate that the translator is taking a break. Similarly, some anomalous values for longer pauses are not shown in the graph.

Comparing the product lines (green) in the two figures, we can see that the professional translator's blue process line reaches the top (horizontal) and then goes through two cycles of falling, rising, falling, and rising again, while the student translator's product line only goes through one cycle of falling and rising after its blue process line reaches the top. This means that the professional translators may have made two revisions to the translation at the end of the whole translation, while the student translator made only one. In addition, the professional translator's green product line goes back to the previous translation several times during the ascending process, a signal of making changes to the translation, while the student translators review the entire text only after finishing the translation and do not go back to the translated text to make changes during the translation.

Next, we merged the data output of Inputlog according to the translator groups. We then described the three major stages of the translation process (Orientation, Draft, and Revision) in detail, and used t-testing to compare whether there is a significant difference in the length of time spent on these three stages between the two groups of translators. In describing the length of time spent at each stage by the two groups of translators, we compared the translations of A and B texts by the translators.

Orientation time

Table 5 shows that the time (in milliseconds) spent by the professional translators was much higher than that of the student translators in both the orientation stage of text A and text B. In particular, the orientation stage of text B took longer for both groups, with the average time spent by the professional translators being about 15 seconds. This may indicate that the opening sentence of the article is not easy to translate.

Table 3: Pause time in orientation stage

| | Text A | | | | | Text B | | | | |
| | Orientation time | | | | | Orientation time | | | | |
Group	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max	N
A	77148	48613	10312	179652	25	154275	95356	18718	288651	25
B	11782	3991	5131	17637	25	32426	11454	12290	48647	25

Table 6 shows the t-test results of the pause time in the orientation stage for the two groups of translators. The two-tailed $p < 0.001$ indicates that there is a significant difference in the orientation time between the two groups of translators.

Table 4: T-test of pause time in orientation stage

Difference	-93607	t Ratio	-7.742
Std Err Dif	12091	DF	51.48372
Upper CL Dif	-69340	Prob > |t|	<.0001*
Lower CL Dif	-117875	Prob > t	1.0000
Confidence	0.95	Prob < t	<.0001*

Draft time

Table 7 has shown that the time spent by the professional translators (in milliseconds) in the Draft stage of texts A and B was not significantly different from that spent by the student translators. The average time spent by both groups was less than 30 minutes. The average translation time for student translators was about 20 minutes for text B, which was much lower than the average translation time for their first draft of text A (25 minutes). The difference between the Draft time of the professional translators was not significant. This indicates that the difficulty of the original text or some other factors had a greater impact on the draft stage of the student translators. These factors need to be further studied in the future.

Table 5: Pause time in the draft stage

		Text A						Text B			
		Draft time						Draft time			
Group	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max	N
A	1445624	160979	1228398	1755488	25	1503297	137269	1252420	1764173	25
B	1509779	205315	1238585	1805184	25	1194566	575732	265378	2119543	25

Table 8 shows the t-test results for the translation time of the first drafts of the two groups of translators. The two-tailed p = 0.0771, which is larger than 0.005, indicates that although there is some difference between the first draft translation time of professional translators and that of student translators, the difference is not significant.

Table 6 T-test of pause time in draft stage

Difference	-122288	t Ratio	-1.79868
Std Err Dif	67988	DF	59.58416
Upper CL Dif	13727	Prob > |t|	0.0771
Lower CL Dif	-258303	Prob > t	0.9614
Confidence	0.95	Prob < t	0.0386*

Revision time

Table 9 shows that the time (in milliseconds) spent by professional translators was much lower than that of student translators in both text A and text B revision stages. In the revision stage of text A, student translators spent an average of 316 seconds (more than 5 minutes), while professional translators spent an average of 252 seconds (more than 4 minutes). In the revision stage of text B, the student translators spent an average of 349 seconds (again, more than 5 minutes) and the professional translators spent an average of 272 seconds (again, more than 4 minutes). On the surface, it seems that the student translators spent more time on revision than the professional translators and should have made more revisions to the translation. However, comparing figures 1 and 2, one can see that the student translators did not actively revise their translations, while the professional translators were able to complete two revisions in a much shorter period.

<div align="center">Table 7: Pause time in revision stage</div>

	Text A					Text B				
	Revision time					Revision time				
Group	Mean	Std Dev	Min	Max	N	Mean	Std Dev	Min	Max	N
A	251515	32688	188569	308310	25	272554	52237	191869	348645	25
B	316453	153282	70462	598555	25	348869	112098	160131	510523	25

Table 10 shows the T-test results of the revision time for the two groups of translators. The two-tailed p = 0.0008 < 0.005 indicates that there is a significant difference in the revision time between professional and student translators, with student translators spending more time in the revision phase.

<div align="center">Table 8: T-test of revision time</div>

Difference	70627	t Ratio	3.53986
Std Err Dif	19952	DF	59.65337
Upper CL Dif	110541	Prob > |t|	0.0008*
Lower CL Dif	30712	Prob > t	0.0004*
Confidence	0.95	Prob < t	0.9996

From comparing the differences between the translation processes of professional translators and student translators, we can see that the translation method of metaphor represents translation competence. All metaphorical translations have the function of cultural communication, and the application of metaphors to translation can form a shift in meaning of metaphors between languages, thus enhancing the accuracy of language translation and promoting cross-cultural communication. In the process of translation practice, it is easy to form a mechanical translation mode by relying only on translation skills, and to only understand but not appreciate the translated language, thus lacking the ability of metaphorical thinking will make it difficult to become an excellent translator.

Language comes from life and is higher than life, and metaphor is an ability that arises in the process of understanding the world. There are many metaphors to be discovered in real life, and second language translators need to train themselves in metaphorical thinking and cultivate the ability to think metaphorically in real life. In addition, translators need to develop the ability to translate using creative and novel metaphors. On the basis of cognitive metaphors, they should learn to push the boundaries and explore new concepts of metaphorical translation so that they can apply them to their own translation practice. Finally, teachers need to develop students' ability to spot real-life metaphors.

Identifying and applying metaphors is an important contribution to translation teaching. On the one hand, this facilitates students to develop cross-cultural communication skills. It helps students to develop a global awareness of context and discourse. While translation teaching focuses on the transformation of words, sentences and passages in different language contexts, the metaphorical translation method focuses on the associative nature of objects in different contexts. The associative nature of metaphors facilitates students to develop a dynamic sense of context and an awareness of the overall construction of a discourse. Finally, teachers need to develop students' ability to discover metaphors in real life. Language comes from life and is above life, and metaphor is an ability that arises in the process of understanding the world. There are many metaphors to be discovered in real life, and this requires training students to think metaphorically and to develop their ability to think metaphorically in real life.

CONCLUSION

Based on the classification system of translation strategies and translation methods proposed by Schreiber (2006), this study identifies and describes the strategies and translation methods of two groups of translators, professional translators and student translators, to present the diversity, frequency, and quantity of metaphorical translation strategies and translation methods used by the two groups. Our Chi-square results of the translation strategies of the two groups show that there are significant differences in the use of translation strategies between professional and student translators, with student translators using more lexical and syntactic strategies than professional translators, while professional translators use more semantic translation strategies than student translators.

In addition, this study has also conducted a detailed analysis of the three stages of the translation process, namely, orientation, draft translation, and revision, for both groups of translators. Using the data from the keyboard records, the pause times of these three stages are described, and the translation activity process of the translators is inferred from the keyboard records. The results of the T-test on the pause times of the three translation stages show that there are statistically significant differences between the two groups in the pause times of orientation and revision stages, but not in the draft stage.

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