Revisiting the Function of Background Information in Sight Translating Metaphor: An Analysis of Translation Product and Process

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Introduction

Metaphor, as a typical feature of utterance expression, is "treated as illustrating the entire complexity of language communication" (Dobrzyńska 1995, 595). It presents a particular challenge for interlingual and intercultural communication, as confirmed by Dobrzyńska (1995, 598): "difficulties in interpreting metaphors are particularly conspicuous in the case of a contact between two languages in a situation when a metaphorical utterance is translated into another language". The difficulties, according to translation scholars, lie in the fact that "transferring (metaphors) from one language and culture to another may be hampered by linguistic and cultural differences" (Schäffner 2004, 1253).

A number of cross-linguistic studies (e.g., Dobrzyńska 1995; Newmark 1988; Schäffner 2004; Tirkkonen-Condit 2002) have at a theoretical or empirical level investigated this translation problem and its corresponding solutions, providing valuable contributions both to the study of translation and to metaphor processing in general. In this research, however, our focus lies not on what strategies should be applied to translate metaphors, but rather on the impact of introducing relevant materials to help bridge the cultural gap and thus assist translators in translating metaphorical expressions. Empirical in its nature, this research builds on a

between-subjects experiment in which background information (BI) serves as the only independent variable, and aims to explore whether the acquisition of BI influences the product and process of metaphor translation. Before proceeding to a detailed analysis, we feel it necessary to clarify some of the basic concepts underlying this research.

Some basic concepts

Sight translation

Sight translation (STR) is modeled by Gile (1995) as a process consisting of the Reading Effort (understanding a message written in one language) and the Production Effort (reformulating the message orally in another language) (Gile 1995, 183; Lambert 2004, 298). Despite the various differences compared with consecutive and simultaneous interpreting (Agrifoglio 2004, 44), it has been treated as being closer to interpreting than to written translation, because sight translators "are able to apply largely the same strategies that they use when they perform oral-to-oral interpreting" (Dragsted and Hansen 2007, 254). For many scholars, STR is just a pedagogical exercise for getting started on the techniques of interpreting; however, researchers have shown that the cognitive demands it exerts on the interpreter are no less than those of consecutive and simultaneous interpreting (Agrifoglio 2004; Shreve *et al.* 2010). Hence, in this study, STR was adopted as the vehicle for examining the effect of BI on metaphor translation.

Background information

Gile (2002) suggests that professional behaviour in real-life interpretation should include the study of relevant materials, the clarification of terminological doubts and the preparation of a glossary. The acquisition of BI in advance is "regarded

unanimously as an important part of working conditions" (Gile 1995, 147). In practice, in training or in experimental research, interpreters expect to be provided with BI in various forms: speech transcripts, drafts of papers, abstracts, outlines, headings, information on the setting, the topic and the participants, etc. (Diaz-Galaz 2011, 176; Gile 1995, 147). In this research, BI refers to the cultural context of the source text (a speech), or more specifically, the social and historical background to the time in which the speech takes place, as an example of the internal manifestations of a culture.

Linguistic metaphors

The groundbreaking work *Metaphors We Live By* (Lakoff and Johnson 1980) revived interest in metaphor, or more exactly, conceptual metaphor, redefining it as "a cross-domain mapping in the conceptual system" (Lakoff 1993, 202-203). Despite the public enthusiasm for metaphor at a conceptual level in the field of Translation Studies (e.g., Andersen 2000; Jensen 2005; Schäffner 2004;Tirkkonen-Condit 2002), our study chooses to focus on metaphor at a the linguistic level, distinguished by Lakoff (1993, 202-203) as "individual linguistic expressions (words, phrases or sentences) that are the surface realization of cross-domain conceptual mappings". We feel it is equally important to investigate metaphorical expressions (MEs) in language use, since the study of them "may provide a good clue to finding the systematic conceptual correspondences between domains (i.e. to conceptual metaphors)" (Kövecses 2005, 32).

Background

The function of BI in translation and interpreting

The function of BI, which can be operationalized as 'speech transcripts', 'summary of the speech' or 'prior topic knowledge', has attracted great interest on the part of translation and interpreting researchers. A number of studies have designed empirical experiments to explore whether BI has a significant impact on the results and processes of translation and interpreting.

Griffin (1995) measured the production times, correctness and appropriateness of the word translations in two different conditions, i.e. with relevant or irrelevant BI. The results supported the viewpoint that relevant BI had a positive effect on the quality of translation, though it might consume more time in translation.

Lamberger-Felber (2003) examined the impact of a transcript of the speech on interpreters' performance, revealing that transcripts of the speech had a positive impact on interpreting performance. A similar study by Kim (2006) focused on the effect of BI on translators' performance. Results indicated that having access to BI had a more significant influence on translation quality than prior English reading proficiency. Diaz-Galaz (2011) examined the effect of previous preparation on the process and product of simultaneous interpreting as performed by advanced interpreting students. The author concluded that "preparation supports a more efficient processing, as students who prepared were able to produce more accurate, complete and correct target speeches within a similar period of time than students who did not prepare" (2011:186) .

The function of BI in translating metaphor

Although very few studies have investigated the effect of BI on translating metaphorical expressions in texts, there has been interest in exploring the function of BI in understanding metaphors in sentences. In these studies, the construct of BI has

been operationalized as 'context', be it linguistic or cultural.

A series of empirical studies were designed by Ortony and his colleagues (Ortony *et al*. 1978; Ortony 1983) to observe the subjects' different responses to sentences containing MEs by manipulating prior sentential context. One of the major findings was that "the thematic relatedness of the idea expressed to the preceding context makes a big difference to the ease with which a metaphor can be understood both by adults and by children" (Ortony 1983, 28). This observation was echoed by Martin (2006). His examination of the subjects' comprehension of sentences containing MEs after having processed a short span of the text gave clear evidence of the predictive value of contextual cues for future metaphors.

This branch of research is not confined to monolingual settings. McDonald and Carpenter (1981), for example, explored cross-linguistic communication. Their experiment, in which the subjects were engaged in a simultaneous translation task, revealed that the identification and interpretation of an ambiguous phrase (an idiom or a ME) was closely connected with the preceding context.

Other studies focused on the effect of cultural background on metaphor comprehension, which naturally deals with subjects who do not share the same first language (L1) as the speaker or writer. Littlemore (2003) asked a group of Bangladeshi students to explain the metaphors used by their British lecturers, and found that a disparity in value systems was a stumbling block for the students in trying to make sense of the metaphors. Jensen (2005) examined the translation process of metaphorical and metonymic expressions by expert translators and concluded that a knowledge of the cultures of both the source and target domains was essential for the translation of such expressions.

Our research attempts to assess the impact of BI on the product and process of

sight translating MEs in texts rather than sentences, as this mode is much closer to real-life practice. To that end, we designed a between-subjects experiment which included an STR task and a post-task interview. The two groups of subjects were asked to sight translate a source speech containing ten MEs, but only the experimental group was given time in advance to read materials introducing related BI.

Experiment

Subjects

The research was conducted with 68 4th-year English major undergraduates at a Chinese university. All the subjects were of a similar age (around 22) and had a similar language background (Chinese as L1, English as L2). They had all passed Test for English Majors Band 4, and were taking an intermediate interpreting course when they participated in the experiment. We cross-grouped the subjects into an experimental group (EG) and a control group (CG) based on their scores in the most recent interpreting exam to ensure that both groups' interpreting abilities were as near equal as possible.

Materials

Source speech

The source text was specifically chosen to contain expressions with figurative elements. It was an excerpt from Bill Clinton's 2001 farewell speech (see Appendix I), since modern political discourse is permeated with metaphors for their communicative and persuasive effect. Feedbacks from our previous pilot study indicated that the text was of acceptable length (241 words) and difficulty, and would be unfamiliar to the subjects.

Metaphorical expressions

The identification of MEs should "not be based on our own intuition, but on the definitions provided by dictionaries" (Krennmayr 2008, 113) and the linguistic context. In our effort to identify the ten MEs in the source speech, we used several dictionaries for reference and double-checking, among which *The Macmillan Dictionary for Advanced Learners* (MED) and the *Oxford Advanced Learner's English-Chinese Dictionary* (OALD (E-C)) were the most frequently consulted. In the end, ten metaphors were identified within the source speech (see Appendix II).

Preparation material

The EG was given ten minutes to read a topic-related text[1] as a form of BI before the STR task. They were supplied with pens and markers so that they could take notes, mark the document or write comments. However, they were not given access to any external source of information, such as the Internet or dictionaries. The text given is mainly about Clinton's approach to dealing with other countries, and his aim of harnessing the benefits of globalization to advance American's objectives of spreading democracy and achieving shared prosperity and peace. While offering a glimpse of the social background to the Clinton presidency, this passage is not directly related to the source text of the experiment.

Experimental procedure

Both the pilot and formal experiments were carried out in a simultaneous interpreting lab, an environment familiar to the subjects. The experimental procedure included the following steps: (1) The chief examiner described the task and briefed the subjects on

the occasion of Clinton's speech, as in a real life translation scenario. (2) The examiner distributed questionnaires asking about the subjects' knowledge of this speech and its social background.[2] (3) The CG left the lab for ten minutes while the EG was offered the preparation material. (4) The CG reentered the lab and was assigned a warm-up task together with the EG. (5) Both groups completed the STR task while the source text appeared using moving window presentations monitored by the examiner (Macizo and Bajo 2009). The subjects read the screen in front of each of them and sight translated each paragraph within a defined time span (150% of normal reading time). (6) After the STR was completed, all the subjects were asked to retrospectively report on their processing of the ten metaphors during the STR. Both the STR sessions and retrospective reports were recorded and transcribed afterwards.

Data collection

The answers to pre-test questionnaires revealed that 4 out of 68 subjects had had some knowledge of the Clinton presidency and 3 had heard about this speech before the experiment. Out of concern that their long term background knowledge might be activated and thus give them an advantage over the other subjects, we decided to remove these seven samples. Another random sample from the CG was dropped to ensure the numbers would be even. In all, there were a total of 60 valid samples employed in the ensuing data analysis, 30 for each group.

The study triangulated the following three streams of data: (1) transcriptions of the recordings, based on which the translation errors were classified and assessed; (2) recordings of the subjects' acoustic outputs, which were then imported into the open-source program Audacity (2.0.3) so that both silent and filled pauses when dealing with the MEs could be calculated; and (3) the subjects' retrospective

interviews, from which was obtained a clearer picture of how each subject coped with the metaphors.

Data presentation and discussion

The evaluation of the translation products consists of 'macro assessment' and 'micro error analysis', while the investigation into the translation process is presented through the analyses of silent and filled pauses. A qualitative analysis will be incorporated to help explain the quantitative results.

Analysis of the translation products

Our attempt to evaluate the contribution of BI to the translation performance is complicated by the absence of a clear-cut definition of 'translation quality': "Quality is an elusive concept, if ever there was one" (Shlesinger 1997, 123), and quality assessment in translation and interpreting "immediately raises the question of quality for whom and from which perspective" (Dragsted and Hansen 2009, 592). The evaluation of metaphor translations in our research was carried out on the basis of 'error observation', as recommended by Agrifoglio (2004) and Lambert *et al.* (1995).

Assessment score-a global picture

First, we defined three categories of performance as the basis for evaluating each ME sight translation product, namely 'successful translations', 'faulty translations' (or 'translation with minor errors') and 'failed translations' ('translation with major errors' and 'omissions'). Two external assessors were asked to group all metaphor translations into the designated three categories, without attempting to evaluate or grade the performances. When discrepancies occurred, they discussed them until

agreement was reached.

The second step was to give each unit of translation (i.e. a metaphor translation) a score from 1 to 5. 'Successful translations' were given a score of 5, while 'failed translations' a score of 1, and 'faulty translations' a score from 2 to 4 according to the number of minor errors. As the majority of translation units in this category contained no more than three minor errors, we gave a score of 4 to the unit with one minor error, 3 to the unit with two minor errors, and 2 to the unit with more than two minor errors. The operational definition for each marking category, together with some specific examples can be found in Table 3.1, and the results of the assessment are listed in Table 3.2.

Table 3.1 Operational definition for marking categories used in quality assessment

Category	Operational definition	Examples: M4. (ST: a powder keg); M9. (ST: weave the threads . . . into the fabric of one America)
Failed translations (a score of 1)	The translation of the ME displays 'a high degree of explicit divergence from the source text' (Al-Qinai, 2000, p. 500) or sounds 'alien to the target language recipients' (p. 507), or the ME was completely omitted.	M4. was translated as '面粉盒' (a box used to contain flour); M9. was translated as '把各种材料跏进一个美国的纤维' (to weave all materials into an American fabric).
Faulty translations[a] (a score from 2 to 4)	The translation of the ME displays errors including 'missing information' and 'added mistakes' (Lambert et al., 1995, p. 42)	M4. was translated as '是一个，是一个，**(6. RE)** 火药，额，导火线 **(12. CC)**' (a, a powder, well, a blasting fuse); M9. was translated as '将…(7 seconds' pause) **(10. LH)** 各种人跏合成一个美国 **(3. IM)**' (to … melt all people into one America)
Successful translations (a score of 5)	The translation of the ME has successfully achieved functional equivalence (Nida and Taber, 1969, p. 12) as it operates in the source text	M4. was translated as '火药桶' (powder keg), '炸药包' (explosive cartridge); M9. was translated as '将美国境内，所有人团结在一起'(to unite all people within the United States)

a.Faulty translations include twelve types of errors based on Lambert et al. (1995, p. 42) with some adjustments. They are errors of lexis (abbr. as 1. EL), partial omissions (2. PO), imperfections (3. IM), calques (4. CA), additions (5. AD), repetitions (6. RE), morphosyntactic mistakes (7. MM), slips of the tongue (8. ST), false starts (9. FS), long hesitations[b] (10. LH), wrong corrections (11. WC) and correct corrections (12. CC).

We counted those pauses lasting longer than five seconds as minor errors of long hesitation. This is supported by Aguilar (2000, p. 107) who proposes that silences should not be too long, to avoid losing the attention of the audience, and suggests that on the radio, for example, a silence of over five seconds can have a negative effect on listeners' attention.

Table 3.2 Assessment of translation products based on error observation (full score = 50)

| Subject code	Metaphor STR score	Subject code	Metaphor STR score	Subject code	Metaphor STR score	Subject code	Metaphor STR score
EG1	36	EG16	32	CG1	27	CG16	18
EG2	25	EG17	15	CG2	16	CG17	31
EG3	42	EG18	23	CG3	16	CG18	25
EG4	25	EG19	22	CG4	24	CG19	27
EG5	35	EG20	18	CG5	18	CG20	22
EG6	23	EG21	27	CG6	25	CG21	22
EG7	17	EG22	22	CG7	21	CG22	17
EG8	26	EG23	20	CG8	28	CG23	19
EG9	28	EG24	21	CG9	25	CG24	31
EG10	19	EG25	20	CG10	27	CG25	24
EG11	33	EG26	34	CG11	25	CG26	17
EG12	35	EG27	26	CG12	25	CG27	12
EG13	26	EG28	17	CG13	18	CG28	21
EG14	32	EG29	21	CG14	21	CG29	18
EG15	32	EG30	28	CG15	11	CG30	20
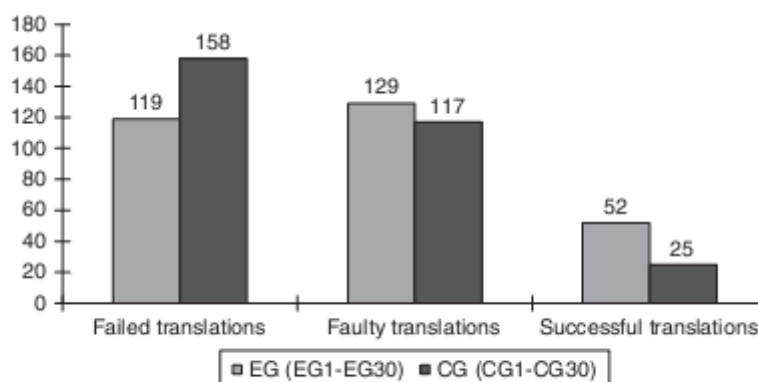
Figure 3.1 Number of metaphor translations in each category.

Figure 3.1 reveals that the EG produced more than twice as many successful metaphor translations as the CG, while having many fewer failed translations than CG. The tabular presentation of the individual subjects' scores and the t-test results serve as reinforcing indicators of the EG's superior performances. As Table 3.3 indicates, the mean score for the EG's metaphor translations is 26, which is much higher than the CG (21.7). The two-tailed t-test result (t=2.79, p=0.007) reveals that the difference is statistically significant. The quantitative results lead to the conclusion that the

provision of BI enabled the EG members to come up with better metaphor translations than CG members within the same time span. The subjects' retrospective reports echo this conclusion: the majority of the EG members were keenly aware of the assistance afforded by the BI when trying to decipher M2, M3, M6, M7, M9 and M10, the six expressions on which they performed better with more instances of successful translation and fewer major errors.

Table 3.3 t-Test comparing EG and CG metaphor STR scores

t-Test: Two-Sample Assuming Unequal Variances

	Variable 1(EG)	Variable 2(CG)
Mean	26	21.7
Variance	45.44827586	25.73448276
Observations	30	30
Hypothesized Mean Difference	0	
df	54	
t Stat	2.79152599	
p(T = t) one-tail	0.003619146	
t Critical one-tail	1.673564907	
p(T = t) two-tail	0.007238291	
t Critical two-tail	2.004879275	

Error analysis-a closer investigation

Major errors and omissions

Our focus in this section is on the failed translations, represented by a detailed analysis of 'major errors' and 'omissions'. Based on the transcriptions of the subjects' recordings and their retrospective reports, we analysed the reasons for failed translations as below in Table 3.4.

Table 3.4 Number and distribution of major errors in STR of the MEs

	Divergent understanding (percentage)	Alienated expression (percentage)	Omitted translation (percentage)	Total
EG(1–30)	65 (54.62%)	44 (36.97%)	10 (8.40%)	119 (100%)
CG(1–30)	91 (57.59%)	41 (25.95%)	26 (16.46%)	158 (100%)
Two-tailed t-test	t = -2.84, p = 0.006	t = 0.46, p = 0.64	t = -2.78, p = 0.008	

Table 3.5 Number and distribution of major errors in STR of M2 and M3

		Divergent understanding	Alienated expression	Omitted translation	Total
M2 STR	EG(1-30)	6	5	1	12
	CG(1-30)	11	6	4	21
M3 STR	EG(1-30)	3	3	1	7
	CG(1-30)	11	3	2	16

As is clear from Table 3.4, most failed translations were caused by divergent understanding (in the Reading phase) rather than alienated expression (in the Production phase). This result echoes one of our previous findings (cf. Zheng and Xiang, forthcoming) that the origin of failed ME translations in STR does not lie in the intrinsic difficulty of the expression, but rather in the incomplete or incorrect understanding of the source language and the resultant imbalanced distribution of processing capacity.

The t-test results reveal that the differences between the EG and CG in terms of 'divergent understanding' (t=-2.84, p=0.006) and 'omitted translation' (t=-2.78, p=0.008) are statistically significant, supporting the argument that the provision of BI exerts some facilitating impact on Reading Effort, as it would be revealed later that omission was largely caused by insufficient understanding. This finding is supported by a well-established dynamic view of comprehension: "processing new information requires the active construction of some form of mental representation by integrating the input with various kinds of pre-existing knowledge—lexical, syntactic, pragmatic, encyclopedic, etc." (Pöchhacker 2004, 119).

Taking as our examples the translations of M2 ('the cutting edge') and M3 ('the

knife's edge'), Table 5 surveys the number and distribution of major errors in the translations of these two units by the EG and CG. It is clear that the EG members had similar numbers of divergent understanding and alienated expression errors, while the CG members made more errors in understanding than in expression. When vertically comparing the number of divergent understandings, the CG failed in as many as twice, or even three times, the number of cases as the EG. The quantitative data indicate that the availability of BI provided the EG members with positive support in grasping the metaphorical meaning when translating. The retrospective data collected soon after the STR task reveal that 70% of the EG members were instantly aware that both metaphors were describing the chasm between developed and developing countries when they read the words 'trade' and 'gap' in the first sentence of the source text. This instant reaction was greatly facilitated by relative BI such as "economic integration advances both our interests and our values, but also accentuates the need to alleviate economic disparity". The activation of the BI steered their comprehension of M1 ('close the gap') along the correct path; at the same time, it served to generate expectations which guided the comprehension process of M2 and M3. By contrast, with no BI in mind as cognitive schemata, the CG members often had to make arbitrary associations in decoding metaphorical expressions. 11 of them constructed wrong mental representations in interpreting 'the knife's edge'. Some connected the image of a 'knife' to 'western-style cuisine' and then inferred 'being rich', while others jumped from 'edge' to 'bordering areas'.

Meanwhile, omissions as an indicator of semantic loss that can be attributed to the complexity of the task (Pöchhacker 2004; Pym 2009) are calculated and presented in Table 4. The figures show that omitted translations were much more frequent in the CG (16.46%) than in the EG (8.40%). The t-test result (t=-2.78, p=0.008) shows that

the difference between the two groups was statistically significant. When it comes to the specific cases of M2 and M3, the ratio of omitted translations was also higher for the CG than the EG. The retrospective reports reveal that most omitted translations were the results of failures to activate proper mental representations when decoding metaphorical meanings. Hence, the 'omitted translation' observations lead to the conclusion that the availability of BI has an effect in reducing the degree of information loss.

Minor error analysis

In this section, a comparative analysis of minor errors focuses on the most frequent errors made by the EG and the CG in their metaphor sight translations. It is worth noting that minor errors included in failed translations were not counted, since such translations had already been identified as failures; and there might be more than one minor error found in each faulty ME translation.

Table 3.6 Number (percentage) of top five minor errors for EG and CG in metaphor STR

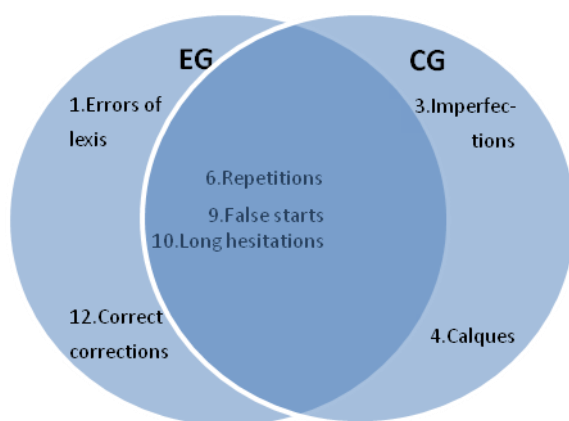|	1. EL	3. IM	4. CA	6. RE	9. FS	10. LH	12. CC
EG	**16**	15	8	**62**	**21**	**36**	**32**
	(7.84%)	(7.35%)	(3.92%)	**(30.39%)**	**(10.29%)**	**(17.65%)**	**(15.69%)**
CG	7	**17**	**21**	**56**	**31**	**19**	16
	(3.59%)	**(8.72%)**	**(10.77%)**	**(28.72%)**	**(15.90%)**	**(9.74%)**	(8.21%)

Figure 3.2: Top five minor errors made by the EG and the CG

As can be seen from Figure 3.2, there are some overlaps between the EG and the CG in terms of the top five minor errors, i.e. repetitions, false starts and long hesitations, all of which can be identified as symptoms of disfluency, "phenomena that interrupt the flow of speech and do not add propositional content to an utterance" (Gósy 2007, 93). These linguistically detectable faults are considered as manifestations of the (cognitive) efforts of reasoning and formulation which accompany linguistic production (Goffman 1981, 172).

Non-overlaps in Figure 2 drew our attention as well, and the results of a closer investigation proved them worthy of attention. 1. Errors of lexis (EL) and 12. Correct corrections (CC) were more frequently made by the EG, while 3. Imperfections (IM) and 4.Calques (CA) more frequently occured with the CG.

Table 3.7 Examples of non-overlapping minor errors in Figure 3.2

Error type	Source text	Subjects	Translation scripts
12. Correct corrections	M9 & M10: weave the threads of our coat of many colors into the fabric of one America	EG5	额，用，用各种颜色来编织，编织我们的衣服 …那，那就是作为一个整，作为一个整体 (well, to use all colors to weave our coat … that is, that is, we as a united entity)[a]
		EG23	我们一起…除非所，额，所有种族的人来一起编织美国，美国…抛弃种族观念，一起来创建美国 (we together … unless, all races together weave America, America … discard the race prejudice, join hands and build up America)
4. Calques	M3: live on the knife's edge	CG2	在幸存，嗯，刀刃边缘的，很贫穷的 (live on the edge of the knife, being very poor)
		CG4	生活在存活边缘，嗯，挣扎的刀刃上 (live on the edge of survival, well, the knife's edge of struggling)

[a] Back translations in brackets were provided by the authors

"Because of the time constraints present in interpreting, including sight translation, interpreters have to start producing TL output simultaneously with comprehending SL input" (Gile 1995, 169). Sight translators' flow of production can be viewed as a mirror of their mental processing of the source language input. In this sense, 12.CC mirrors the latter two STR passes suggested by McDonald and Carpenter (1981, 236-237): "verbal translating and error recovery". EG5 and EG23 are typical examples. At the first stage, 'weave', 'colors' and 'coat' were combined into a configuration, and thus the initial translations were delivered. BI intervened soon after the first step, and a discrepancy was consequently detected. The subjects hesitated for a few seconds, reread the phrase, and from the phrases 'many colors' and 'one America', activated the two BI components: 'America is a melting pot with many nationalities and diversified cultures' and 'people of all nationalities are united'. At that point, a complete and accurate understanding was achieved. By contrast, with no helpful BI available, the CG could only resort to bottom-up processing and became entrapped in the 'weaving a coat' schema or introduced some irrelevant or erroneous sayings from Chinese culture, such as '闭门造车(work behind closed doors)' (CG12), or '自扫门前雪(sweep the snow from one's own doorstep)' (CG22). 60% of their

translations of M9 and M10 include major errors.

The percentage of calques (4.CA) for the CG is higher than the EG. Calques are assumed to be more common in STR than other branches of interpreting, since the sight translators are constantly distracted by the continuous presence of the source text. Both the EG and CG were exposed to this risk, but as indicated above, the provision of BI could help translators arrive at a meaning-driven understanding so that the EG members were more likely to de-verbalize the derived message in a flexible way. Thus, some were able to think outside the 'edge' component and seek different metaphorical images in the target language which could express a similar meaning, such as '水深火热(in deep water and scorching fire)' (EG2, EG13) and '勒紧裤带(tighten one's belt)' (EG20). By contrast, the CG processing was more superficial; thus they were more likely to produce a rigid word-for-word translation with obvious residue from the source language, which was not "adequate vis-à-vis the 'normal' standard usage of native speakers in a given situation" (House 1997, 18). An example is '挣扎的刀刃上 (the knife's edge of struggling)' (CG4).

In short, our error analysis leads to the conclusion that for subjects with equal translation capability, the provision of BI brought about a perceptible difference in the ME translation products, especially in the Reading phase. The EG members used the BI as 'frames' to predict, select, absorb and assimilate the input message, in all, to "make inferences and build mental models of message content" (Pöchhacker 2004, 120). There is no doubt that the interplay of input message and the BI enabled subjects to get closer to the true meaning of the MEs than lexical processing alone.

Analysis of translation process-an investigation into pauses

This section presents a process-oriented investigation of the ME STR based on a

pause analysis of the subjects' acoustic recordings. As McDonald and Carpenter (1981, 233) point out,

> unlike oral interpreters, (sight) translators are starting from written text. They can control the rate of input and determine their own junctures in the material. It will be shown that where the translators pause and what they reread indicates the component processes of translation.

Pauses have long been considered a 'window' on the cognitive planning activity intrinsic to speech production in psycholinguistic research on spontaneous speech and interpreting (Goldman-Eisler 1967; Erman 2007). Furthermore, it is quite common to operate with a distinction between filled and unfilled/silent pauses (Duez 1982). Filled pauses typically consist of hesitation markers ('ums and ahs'), while unfilled pauses are defined as silence intervals (Dragsted and Hansen 2007, 261).

In our study, both categories were counted and analysed. To start with, we imported the subjects' recordings into Audacity (2.0.3) so that they could be digitally processed, and the pauses counted. Since the 10 MEs were scattered through the source text, we had to determine the beginning and ending of the processing of each of them before the pauses could be identified and calculated. The segmentation was conducted by two external assessors, who reached a consensus after referring to Jakobsen *et al.* (2007, 236): "pauses appearing in the production stream at the point of entry to an idiom being formulated are in fact reflections of processing targeted at producing the downstream idiom" and thus should be included in the production process; whereas, pauses immediately after the processing of MEs (if there were any) were not included.

Our operational definition of a silent pause is an interruption in the speech process of one second or more. Not every pause was viewed as a fault or imperfection, because of the dual roles they play: "as a positive element of fluency and as a negative element if their presence is 'abundant or frequent'" (Macías 2006, 27).

For a detailed comparison, we grouped the silent pause measurements into three different ranges of duration: short pause (1-2 seconds), medium pause (2-5 seconds) and long pause (over 5 seconds). The short pause was described as perceivable but not negative, "as 1-2 seconds have been shown to indicate some translation task-related cognitive processing" (Dragsted and Hansen 2007, 260). The medium and long pauses were described as having a negative impact on the listeners' perceptions (Macías 2006, 31). Silent pause frequencies (in three duration ranges) and filled pauses indicated by Chinese hesitation markers (such as 呃 'er' and 嗯 'en') were calculated and are presented in Table 3.8.

Table 3.8 Silent pauses (in three duration ranges) and filled pauses: number and t-test result

	Short pause (1–2 sec)	Medium pause (2–5 sec)	Long pause (>5 sec)	Filled pause
EG (EG1–EG30)	47	32	67	86
CG (CG1–CG30)	54	81	69	149
two-tailed t-test	t = –1.4, p = 0.17	t = –8.24, p = 0.00	t = –0.28, p = 0.78	t = –6.18, p = 0.00

As shown in Table 8, the CG produced many more medium pauses and filled pauses than the EG. The t-test results show that both differences are statistically significant. By contrast, the CG produced slightly more short pauses and long pauses than the EG, but the t-test results show that neither difference is statistically significant.

The number of long pauses includes the number of long hesitations (pauses for over 5 seconds) occurring in both 'faulty translations' and 'failed translations', which explains why the number listed here exceeds the 'long hesitations' classification in the minor error analysis. While the number of long pauses was almost equal for both the

EG and CG, we discovered another interesting difference from the STR recordings. The majority of long pauses for the EG members occurred at the initial phase of metaphor processing, which indicates that these long pauses were used for planning and structuring their subsequent translation outputs. We tend to attribute this observation to the "trade-off between the resource cost of holding and using a schema, and the benefit of using the schema to predict the incoming text" (Britton *et al.* 1985, 241). However, on the whole, we witnessed a prevalence of pros over cons in the schemata activated by the BI, as the processing of the downstream ME was characterized by fewer silent and filled pauses. In contrast, for the CG members, most of the long pauses were inserted in their fragmentary speech, indicating that they were searching for solutions as they were suddenly struck by "the disharmony between lexical access and articulatory planning" (Tóth 2011, 29). The different positions of the long pauses indicate that access to relevant BI might influence subjects' approach to ME-related translation problems.

The CG produced many more filled pauses the than EG. This result is closely related to our previous observation that the EG utilized long pauses (>5 sec) in planning for metaphor translations. According to Yin (2011, 464), "with a lack of adequate planning (in consecutive interpreting), a rushing start may lead to the abuse of fillers and repeated words".

Medium pauses (2-5 sec) were not identified as errors in the present study in consideration of the audience's 'charity principle' (Bühler 1990, 541); thus they were regarded as 'tolerable yet negative' pausing behaviour, and could serve as one of the indicators of painstaking cognitive efforts spent in searching for equivalents. Our data reveal that the CG produced significantly more medium pauses than the EG. This result, from the perspective of pause study, supports the argument that the availability

of BI could to some extent alleviate cognitive effort in ME STR. However, as the understanding and reformulation of metaphors involves a complex cognitive system, a more specific research project should be designed to investigate the relationship between the availability of BI and the cognitive effort cost.

Conclusion

The preceding quantitative and qualitative analyses indicate that the acquisition of BI impacts on the quality of sight translating metaphor products. The number of translation errors and the mean scores for metaphor translations reveal that the quality of the EG's translations were, in general, greatly superior to those of the CG. Further analysis of the major error features shows that BI exerts a positive effect largely on the Reading phase, helping the EG members to apprehend the metaphorical meaning much more quickly and accurately. Furthermore, analysis of the omitted translations reveals that BI functions by reducing the proportion of information loss. Such an observation is further substantiated by the comparison of the numbers of minor errors made by the two groups.

In addition, the acquisition of BI has a significant impact on the processing of sight translating metaphors, as indicated by the numbers of silent pauses and filled pauses. Our data show that, supported by BI, the EG produced significant fewer medium and filled pauses than the CG. There was no significant difference in the number of long pauses between the two groups. However, the different position of the long pauses reveals that BI might have influenced the subjects' approach towards translation problems, helping the EG members to plan their metaphor translations at the beginning of each unit. Concomitantly, such planning for metaphor translations led to a reduction in filled pauses. Based on our preliminary analysis of medium

pauses, the availability of BI might be helpful in alleviating the cognitive effort in STR; however, the exact relationship between BI and cognitive effort awaits further examination through a specific research project targeting this aspect.

The present empirical study revisits the function of social-cultural BI in sight translating metaphor with the aim of providing new insights into the cross-lingual and cross-cultural study of metaphor. Although the 10 metaphors identified for observation were strictly based on linguistic metaphor definitions, a complex cognitive system was broadly involved in the process of understanding and reformulating metaphors from one language into another. This is explicitly discussed from the perspectives of translation product and process. Even so, more effort could, and should, be devoted to this topic, such as further examining the impact of BI on the translation of 'congruent metaphors' and 'alternative metaphors' based on their cross-cultural variations (Kövecses 2006; Boers 2004). This will mark our next stage in endeavouring to advance the study of metaphor from the perspective of the discipline of Translation Studies.

Appendix I. Source texts: excerpt from Clinton's Farewell Speech (2001)

Slide 1

- The expansion of trade hasn't fully closed the gap between those of us who live on the cutting edge of the global economy and the billions around the world who live on the knife's edge of survival. This global gap requires more than compassion. It requires action. Global poverty is a powder keg that could be ignited by our indifference.

Slide 2

- In his first inaugural address, Thomas Jefferson warned of entangling alliances. But in our times, America cannot and must not disentangle itself from the world. If we want the world to embody our shared values, then we must assume a shared responsibility.

Slide 3

- If the wars of the 20th century, especially the recent ones in Kosovo and Bosnia, have taught us anything, it is that we achieve our aims by defending our values and leading the forces of freedom and peace. We must embrace boldly and resolutely that duty to lead, to stand with our allies in word and deed, and to put a human face on the global economy so that expanded trade benefits all people in all nations, lifting lives and hopes all across the world.

Slide 4

- Third, we must remember that America cannot lead in the world unless here at home we weave the threads of our coat of many colors into the fabric of one America. As we become ever more diverse, we must work harder to unite around our common values and our common humanity.

Appendix II. The identification of linguistic metaphors in the source text

Linguistic Metaphors	Source semantic domain	Target semantic domain	Identification method
M1*. close the gap /global gap	cover the opening or break in something or between two things	bridge the separation between two parts	OALD (E-C)
M2. the cutting edge	the cutting surface of a blade	the most modern and advanced point in the development of something	MED
M3. the knife's edge	cutting edge of the blade of a knife	at a critical point	OALD (E-C)
M4. a powder keg	a small barrel for holding gunpowder	potentially dangerous or explosive situation	OALD (E-C)
M5. be ignited by our indifference	a powder keg be ignited by fuse	global poverty be triggered by indifference	Definition and context
M6. entangling alliances	becoming twisted, tangled or caught (in something)	involving somebody/oneself (in difficult or complicated circumstances)	OALD (E-C)
M7. disentangle itself from the world	free something/somebody from something that impedes it/him	free something/somebody from a relationship with something/somebody	OALD (E-C)
M8. put a human face on the global economy	connect things to an actual person.	make something seem more real and easier to understand	MED
M9. weave the threads …into the fabric of one America	weave threads into a fabric	make America into a melting pot with many nationalities and diversified cultures	Definition and context
M10. coat of many colors	the name for the multicolored garment that Joseph owned (in the Hebrew Bible)	people of all ethnic groups	Definition and context

* The 10 metaphors are encoded from M1 to M10 (M for <u>M</u>etaphor).

Notes:

1. The passage "The Clinton Presidency: A Foreign Policy for the Global Age" is excerpted from 'Record of Progress' on a website launched by Bill Clinton himself. [Accessed on 16 Jan 2012] http://clinton5.nara.gov/WH/Accomplishments/eightyears-10.html.

2. The questionnaire is composed of one closed-ended and two open-ended questions: 1. Have you ever heard about this speech? 2. Would you make a list of whatever you know about Bill Clinton? 3. How much do you know about Clinton's achievements in his presidency?

3. We counted those pauses lasting longer than 5 seconds as minor errors of long hesitation. This is supported by Aguilar (2000, 107) who proposes that silences should not be too long, to avoid losing the attention of the audience, and suggests that on the radio, for example, a silence of over five seconds can have a negative effect on listeners' attention.

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