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## **An Evidence-based Exploration into the Effect of Language-pair Specificity in English-Chinese Simultaneous Interpreting**

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**Abstract:** Whether and how language-pair specificity affects the process and product of interpreting is a recurring implicit topic of debate in interpreting studies. Previous discussions have touched upon this issue in Japanese/English and German/English interpreting, with little attention to its role in Chinese/English interpreting. This study focuses on the effect of structural asymmetry between English and Chinese on English-Chinese simultaneous interpreting performance, which is exemplified by right-branching structures in English and left-branching structures in Chinese. Based on a naturalistic observation of three professional interpreters' on-site simultaneous interpretations of the same speech, it investigates two major questions: a) Does structural asymmetry between English and Chinese constitute particular difficulties in the interpreters' interpreting performance? b) If yes, how does such language-pair specificity affect their interpreting product? While previous interpreting studies generally consider that the interpreting product is shaped by three major variables including the interpreter's interpreting competence, cognitive conditions on the site and norms of interpreting, findings of the present study suggest that language-pair specificity functions as another variable in English-Chinese interpreting. It implies the necessity of considering it in the theoretical account of interpreting between languages such as English and Chinese that involve significant contrasts in linguistic structure and cultural conceptualization.

**Key Words:** Language-pair specificity; Structural Asymmetry; English-Chinese Simultaneous Interpreting; Observational Study

### **1. Introduction**

The effect of language-pair specificity in interpreting is a recurring implicit topic of debate in interpreting studies. Setton (1999: 53) referred to it as one of the "controversies in interpretation research". What underlies this controversy is, as Bartłomiejczyk (2004) pointed out, a fundamental question whether some combinations of specific source and target languages require different interpreting strategies than other combinations.

While discussing the role of language-pair specificity in interpreting, it is noteworthy that the controversy over it has always been of fundamental significance in the conceptualization and theorization of interpreting. According to the Interpretive Theory (*théorie du sens*) – one of the few "theories" in interpreting studies, the interpreting process is not language-specific: "Everything that is said in one language can be expressed in another, provided that the two languages belong to societies which have attained comparable levels of development" (Seleskovitch, 1978: 87). The core concept of deverbalisation in the theory implies that the message delivered by the interpreter does not show any trace of the original form or structure in the source

language: “What the interpreter says is, in principle, independent of the source language” (Seleskovitch, 1978: 98).

The underlying motivation of such a language-independent view of interpreting may be “a will to present interpretation as an intellectual activity rather than a mechanical language-to-language transcoding operation” (Gile, 2004: 772). There may also be the reason that the *théorie du sens* was based on the proponents’ experience with Intra-European languages. As Setton (1993) pointed out:

European writings are based on a body of experience consisting almost entirely of instances of communication between speakers of European languages, mostly with European cultural backgrounds or within European communication paradigms. But however universal the workings of a competent interpreter’s brain might be in processing information, local conditions at both ends of the process significantly alter the overall picture: on the input side, there are significant differences in the nature of discourse; in some ‘extra-IE’ interpreting situations, certainly involving Chinese, probably Japanese, cultural, social and even linguistic factors are of an order such that they cannot be as easily dismissed as in the intra-IE sphere; on the output side, a doctrine of training and practice which relies entirely on the interpreter’s ability to ‘spontaneously reformulate’ (the SL processed/interpreted message in the TL) is marred by the fact that, again for historical reasons most non-IE interpreters have to work into a B language. (Setton, 1993)

Daniel Gile (2004) devoted a particular section to the issue of language-pair specificity in his chapter written for *An International Encyclopedia of Translation Studies*, in which he pointed out that “The prevailing opinion today is that the features of the source language and of the target language, as well as syntactic and other differences between them, do affect interpretation. This is based mostly on cognitive considerations, but also on intercultural comparisons, which suggest that more or less adaptation work is required depending on the language pair involved” (Gile, 2004: 772). Gile (2005: 9-26) also stated that although differences between languages may play a negligible role in everyday communication, they may influence the work of the simultaneous interpreter, who experiences very high cognitive load, incomparable with language comprehension or production under normal conditions. Among the several factors that he listed as constituting difficulty in interpreting, differences in syntax contributes to extra cognitive load associated with comprehension or with production, because it requires more processing capacity to interpret between languages which have different word order and force the interpreter to wait longer before being able to reproduce the target language sentence.

It is also interesting to note that according to Bacigalupe (2009), evidence from psycholinguistics supports existence of the role of language-pair specificity in translation and interpreting, as illustrated by studies which demonstrate: “a) that the mental processes during translation cannot be properly compared to monolingual production arising from spontaneous thought, since the simultaneous activation of two language systems results, among other things, in an overload of tasks and in the emergence of interference; and b) that there are more than sufficient indicators that in all the stages of the process direct links between languages are established, so that the

syntactic structure of the source text (ST) will have a clearly visible influence on the surface structure of the target text (TT)” (Bacigalupe, 2009: 304-308).

However, in spite of the significance of this issue to the conceptualization of interpreting theories, there were only a few initial discussions about the effect of language-pair specificity in German and Japanese interpreting. Wilss (1978) discussed the syntactic differences between German and English and the necessity of utilizing the strategy of anticipation in German-English simultaneous interpreting. Uchiyama (1991) identified two major characteristics of Japanese syntax which contrast with English syntax and can cause problems in interpreting. According to Daniel Gile’s observation, which is still valid now, “Opinions expressed in this respect tend to be holistic and it appears no systematic study of language-specific interpreting problems has been undertaken to date, though some studies on syntactic and other transformations in interpretation from source language to target language have been published lately with some comments on the difficulties generated by mandatory transformations” (Gile, 1992).

More recent studies in recent years have shown resurfacing research interest in this issue and they are more data-based. Seeber (2007) examined the cognitive load in German-English SI with reference to their differences in syntactically symmetrical and asymmetrical structures. He used an experiment to uncover the differences between direct measures of cognitive load during simultaneous interpreting of symmetrical and asymmetrical linguistic structures. His findings support the idea that simultaneous interpreting of a verb-final German syntactic structure to English, in which the verb occupies the second place, causes a higher maximum cognitive load than the corresponding construction in German with the verb in the second position. Gile (2011) compared the occurrences of omission, errors and infelicities among French, German and Japanese renditions of Obama’s inaugural speech and found that “language-pair-specific differences can indeed have an impact on the difficulty of interpreting” (Gile, 2011: 213).

Although research interest in this issue has been recurring in recent years, it is noted that the previous discussions and explorations have focused mainly on Japanese, German or French interpreting. The role of language-pair specificity in Chinese/English interpreting has received little systematic examination and evidence-based research, except for the initial explorations made by Dawrant (1996) and more recently by Guo (2011) and Wang & Gu (2014). Dawrant (1996) identified that English interpreting of Chinese structures requiring a significant reordering of information is associated with the use of specific processing-capacity-saving strategies in simultaneous interpreting. Guo (2011) conducted an experimental research to analyze the word order pattern in the target language produced by Chinese interpreters in English-Chinese simultaneous interpreting, which also identified the necessity of re-ordering in interpreting between this language pair. Wang & Gu (2014) did an observational study into the OEs (omissions, errors and infelicities) of professional interpreters’ on-site simultaneous interpreting and explored major variables shaping the interpreting product of English/Chinese SI and found language specificity is a major inducer of OEs in English/Chinese SI.

## 2. Research Questions

This paper intends to investigate through naturalistic observational studies the effect of structural asymmetry between English and Chinese on interpreters' performance in English-Chinese (E-C) simultaneous interpreting (SI). Two research questions are explored: a) Does structural asymmetry between English and Chinese constitute particular difficulties to the interpreters' interpreting performance? b) If yes, how does such language-pair specificity affect their interpreting product?

## 3. Methodology

### 3.1 Research data: Three on-site professional interpretations of the same speech

In order to have good representativeness in data collection, the research data in this study was deliberately chosen as including three professional interpreters' on-site simultaneous interpretations of the same speech live-broadcast on three Chinese TV channels. With such choice of data, it is hoped to avoid the results of analysis being attributed to idiosyncrasy of individual interpreters.

The English source text of the simultaneous interpreting under study is the inaugural speech delivered by President Obama after he was sworn in as the U.S. president in 2009. The President spoke for approximately 18 minutes with a moderately fast speed of 133 words per minute. The speech is relatively dense for spontaneous interpreting with constant use of complex sentence patterns and rhetorical devices. The interpretations of the speech into other languages such as French, German and Japanese have given rise to several studies, e.g., Gile (2011) on omissions, errors and infelicities in broadcast interpreting.

The speech was live-broadcast on three major Chinese TV channels: the Phoenix TV, the China Central Television (CCTV) and the Television Broadcasts Satellite (TVBS). While the Phoenix TV is a Hong Kong-based television broadcaster targeting Chinese audience throughout the world, the CCTV is the predominant state television broadcaster in mainland China and the TVBS is a major satellite television channel in Taiwan.

The three live-broadcasts were interpreted simultaneously into Chinese by three different interpreters, who are all professional interpreters with rich experience in TV interpreting. For the sake of convenience and consistency, the interpreters are presented as Interpreter 1, 2 and 3 in the following sections of data analysis.

### 3.2 Focus of analysis: Right-branching structures in English vs. left-branching structures in Chinese

This study aims to investigate the effect of syntactic differences on interpreters' information processing efforts in E-C simultaneous interpreting. To this end, a specific type of syntactic structure is examined, i.e., right-branching structures commonly used in the English language, as opposed to the left-branching structures used pervasively in Chinese. According to Robin Setton's observation, among the ten most popular languages used for simultaneous/conference interpreting, some (e.g. Chinese, Japanese and Arabic) pose special difficulties as they "have a significant amount of left-branching structure" (Setton, 1999: 53). By definition, the right-branching structure refers to the head-modifier structure which contains a modifier to the right of its headword or kernel sentence (Berg, 2011: 354); while the left-branching structure

features the modifier-head word order. It should be noted that the definitions used in the present study is a rather broad one, which is different from traditional ones. For example, in a right-branching sentence, the modifier can be a single word or a phrase or long and complex constituents such as relative clauses, adverbial clauses, etc. The following are two examples taken from President Obama's speech illustrating such right-branching structures, with the modifiers shown in bold.

(1) I thank President Bush for his service to our nation, as well as the generosity and cooperation **he has shown throughout this transition.**

(2) The words have been spoken **during rising tides of prosperity and the still waters of peace.**

In Example 1 the sentence contains a right-branching modifier ("he has shown throughout this transition") to the right of its headwords ("generosity and cooperation"). It should be noted that in English long and complex modifiers are usually placed after their headwords, while in Chinese no matter how long the attributive modifiers are, they normally precede their headwords.

In Example 2, the sentence includes a right-branching modifier ("during rising tides of prosperity and the still waters of peace") which provides supplementary information indicating the location where "the words [of the presidential oaths] have been spoken". In a typical English sentence construction, temporal or spatial information, usually in the form of adverbial clause, can be placed either before or after the kernel sentence. In Chinese, however, the obligatory position for the same adverbial modifier is to the left of its kernel sentence.

As shown by the above examples, syntactic differences regarding the position of modifiers do exist between English and Chinese. In the following sections, observations will be conducted to examine possible effects of such syntactic differences on the performance of the three interpreters in E-C simultaneous interpreting and how they have coped with such structural differences.

### **3.3 Codification of pauses, waiting and segmentation**

A small parallel corpus was built comprising the English source text of President Obama's inaugural speech and three target texts transcribed from the live-broadcast simultaneous interpretations by three Chinese interpreters. Through manual examination, all the 16 right-branching sentences in the source text and their interpretations of three versions were extracted from the corpus. To reflect the features of synchronicity and linear segmentation in simultaneous interpreting and facilitate the identification of coping tactics, or on-line decisions and actions or immediate deliberate reactions of the interpreter aimed at preventing or solving problems (Gile, 2009: 201), the 16 sentences and their interpretations were aligned in parallel according to their respective temporal positions in the three double-soundtrack recordings. To ensure synchronicity and accurate segmentation of the source and target texts, the computer software of CoolEdit (Version 2.4) is used to process the video-recordings. Figure 1 is an example of the SI corpus and its codification.

TABLE 1

#### **Parallel alignment of the SI corpus and its codification**

ST	But in the words of Scripture	the time has come	to set aside	childish things;	<1.61s>	the time has come	to reaffirm	our enduring	spirit;	...
TT (Interpreter 1)		<0.65s> 但是 [But]	<1.56s> 现在我们应该再没有任何天真的想法。[S] [now we should not have any childish thoughts anymore]		<0.85s>	现在, [Now]	<0.59s> 我们要重新地[Wp] [we have to again]	<0.31s>	继续凝聚我们的团结的精神。 [continue to strengthen our unity spirit]	
TT (Interpreter 2)	<2.63s>		但是 [But]	<1.00s> 我们必须 要[Ww] [we must]	<0.85s>	克服一些幼稚的东西, [overcome some childish things]		<2.56s>而是传承历史上一些<1.63s> 优良的传统。[Ww] [but carry on some historical good tradition]		
TT (Interpreter 3)	...	<0.82s>	但是 [But]	<1.00s> 就像圣经说的一样 [as the Bible says]	<0.5s> 我们要把幼稚的东西放下。[Ww] [we must put down childish things]		<1.13s>	时间到了。<2.02s> [S] 我们要重申我们永续的精神。 [The time has come, we must reiterate our enduring spirit]		

As shown in Table 1, each sentence in both the source text and target texts is segmented into different blocks in such a way as to reflect their respective temporal positions and the different blocks of ST and TTs are synchronized to reflect the feature of synchronicity in SI. For instance, the second block of the source text “the time has come” is corresponding in time to the utterance of “但是” by Interpreter 1 and silent pauses by Interpreter 2 and 3. The ellipsis “...” is used to signify word chunks that appeared either before or after the right-branching sentence. For example, the first ellipsis in the row of Interpreter 3 means that at the time when the speaker was saying “But in the words of Scripture”, the interpreter was still interpreting the previous sentence.

To explore the first research question of this study, i.e., to determine whether SL-TL structural asymmetry constitute difficulties to the interpreters, the parameter of pause is observed, as unnatural or long pauses can be seen as sign indicating interpreters’ processing difficulties. In the corpus the symbol of “< >” is used for the codification of pauses, which includes a number that signifies the pause duration. For example, <0.85s> in the row of Interpreter 1 in Table 1 means that there is a pause of 0.85 seconds between the interpreter’s utterance of Chinese characters “想法” to its left and “现在” to its right.

To answer the second research question, i.e., to find out how the interpreters cope with problems brought about by SL-TL structural asymmetry and how such language-pair specificity affects their interpreting product, the coping tactics adopted by the interpreters in interpreting the 16 right-branching sentences are identified and the target-texts of their interpreting are analyzed. As will be elaborated in Section 4.2, two major coping tactics have been identified in the corpus including waiting and segmentation, which are codified as [W] and [S] for data analysis. Upon closer observations of the corpus, the tactic of waiting can be further divided into two sub-types: waiting for the whole right-branching modifier and waiting for part of the right-branching constituent, codified as [Ww] and [Wp] respectively. For the sake of logical clarity, definitions and descriptions of these coping tactics will be presented in Section 4.2.

## 4. Findings

### 4.1 Effect of structural asymmetry on English-Chinese simultaneous interpreting

#### 4.1.1 Frequency and duration of pauses in interpreting

As stated above, to investigate whether the English right-branching structures cause problems in E-C simultaneous interpreting, the parameter of pause is employed as

indicating the interpreters' mental efforts in information processing. Normally, the longer and the more frequent pauses are, the greater burden they indicate on the interpreters' information processing. A pause means a break in speaking or a moment of silence. According to relevant studies on speech production (Dechert and Raupach, 1980), a break with a minimum duration of 0.3 second is considered a pause. This has since become the adopted standard in linguistic studies (ref. Macías, 2006), and thus is also adopted in the present study. To be more specific, two indicators, i.e., frequency and duration of pauses are used in the observation of the three simultaneous interpretations. Statistics about frequency and duration of pauses observed in the interpretations of the 16 sentences are shown in Table 2 and Table 3.

TABLE 2

**Frequency of pauses in the interpretations of the 16 sentences**

	Frequency of pauses	Average frequency of pauses in each sentence
Interpreter 1	37	2.5
Interpreter 2	34	2.3
Interpreter 3	38	2.5

Regarding the frequency of pauses (Table 2), similar patterns are found in the three interpretations, in which 37, 34 and 38 pauses occurred in the three interpreters respectively when they interpret the 16 sentences. On average, approximately 2-3 pauses occurred in each sentence they interpreted. These figures seem to suggest that in the interpretations of the 16 sentences, the language flows of the three interpreters were substantially interrupted by unnatural pauses, most of which are either long or occur where there were no corresponding pauses in the ST. That can be considered as an indication of the existence of cognitive saturation and excessive burden on their information processing capacity.

In terms of duration of pauses in their interpretations, Table 3 is a summary of pause duration in different ranges: 0.3-2 seconds, 2-4 seconds and 4-6 seconds. The first range is determined according to the above-mentioned figure of 0.3 seconds for pauses and the average pause duration among the three interpreters (approximately 1.46 seconds).

TABLE 3

**Frequency of pauses in different ranges of duration**

	0.3-2 seconds	2-4 seconds	4-6 seconds	Total
Interpreter 1	31	5	1	37
Interpreter 2	22	10	2	34
Interpreter 3	30	4	4	38

As shown by Table 3, while most of the pauses are between 0.3-2 seconds, the interpreters do have to pause much longer in some sentences, especially Interpreters 2 and 3, with 10 pauses at the range of 2-4 seconds and 4 pauses at the range of 4-6 seconds. Once again, such long pauses point to the increased pressure on the interpreters while they encountered the right-branching sentences. To further illustrate this, the longest pause of 5.65 seconds which occurred in Interpreter 3's interpretation is analyzed here for illustration.

(3)

ST	Nor is the question before us	whether the	market	is a force	for good or ill.	...
TT (Interpreter 3)	<5.65s>					那么另外<0.6s>很多人说呃市场可能是好的可能坏的。那其实并不是这样一个问题。 [So other many people say, eh, the market can be good or bad. That actually is not such a problem.]

In Example 3, there is an excessively long pause in the interpreting of the right-branching structure of the ST, which contains a nominal relative clause in which the headword “question” is followed by a long modifier “whether the market is a force for good or ill”. It can be inferred that when the interpreter heard “Nor is the question before us”, he might not have any idea of what the “question” was and had to wait for more information. This situation is complicated by the fact that the sentence is an inverted one beginning with “Nor is...”. Understanding the meaning of the whole sentence, therefore, became more difficult. As shown by the example, Interpreter 3 had to wait for 5.65 seconds before he could start interpretation of the sentence. In simultaneous interpreting, especially in live-broadcast situations, such a long silent pause would heavily disrupt the information flow and as a consequence affect the audience’s confidence in the interpreter.

#### 4.1.2 Information loss and errors in interpreting

In addition to pause frequency and pause duration, another aspect indicating that right-branching structures cause problems in E-C simultaneous interpreting is that the tactics adopted by the interpreters to cope with these structures, in the form of either waiting or segmentation, are often accompanied with information loss or errors in the interpretations. A typical example of information loss is analyzed for illustration.

(4)

ST	And so to all other peoples and governments	who are watching today	from the grandest capitals to the small village where my	father was born:	know that America	is a friend of each nation	and every man, woman, and child who seeks	a future of peace	and dignity, and that we are	ready to lead once more.	(Applause)
TT (Interpreter 1)	.....	<1.07s>	对于所有 [To all]	<2.07s> 观看我们这场演讲的政府和人民来说[Ww]	[governments and people watching this address]	<0.44s>美国是每一个国家，每一个人	[American is, to every nation and every person]	<0.42s>争取自由和尊严的人们的朋友。 [Ww]我们<0.43s>愿意做，再一次作为世界的领袖。	[who seeks freedom and dignity, a friend. We would like to, once again, the world leader.]		
TT (Interpreter 2)	.....	<2.69s>	对全世界， [To all the world]	<0.48s>在	<1.29s>看我们的人们， [people watching us]	<0.82s>	不管是来自于哪个首都，不管是在大城市还是在小城市， [Ww] [whether from any capital or from a big city or a small town]	<1.02s>只要你们希望有尊严有和平，我们愿意和你们一起努力。 [if you hope to have dignity and peace, we would like to make efforts with you.]			
TT (Interpreter 3)	.....	<3.83s>	我们针对呢全球， [We, to eh the global]	<1.35s>	各国， [each nation]	<0.79s> 各国的观众在着今天这个，这个演说 [Ww]	[audience of each nation who are watching this... this]	<0.56s>我要让你知道， [I would like you to know]	<2.28s>	美国是一个和平的国家。<1.29s>我们美国是一个可以让任何人成功的地方。而且美国已经有准备好要重新领导世界。 [America is a peaceful nation... Our America is a place for anybody to succeed in. And American is ready to lead the world again.]	

Example 4 is a long and complex sentence that contains three attributive clauses: a) “all other peoples and governments who are watching today”; b) “the small village where my father was born”; and c) “each nation and every man, woman and child who seeks a future of peace and dignity”. In the three interpretations, loss of information occurs fairly common with the right-branching structures. For example, in Interpretation 1 information contained in clause b) was missing while the headword “every man, woman and child” was simplified as “每一个人” (every person). In Interpretation 2 information contained in clause b) was missing while the headwords

“people and government” in a) and “every man, woman and child” in c) were generalized as “人们” (people) and “你们” (you). The biggest information loss occurred in Interpretation 3, where information contained in clauses b) and c) was completely missing and the headword “peoples and governments” in clause a) is rendered as “各国的观众” (audience of each nation). Another fact worth noting is that clause b) was missing in all the interpretations. This is probably because clause b) is in fact an attributive clause inserted in clause a), which is also an attributive clause: “peoples and governments who are watching today, from the grandest capitals to the small village where my father was born”. Such sentence construction was likely to increase burden on interpreters’ processing efforts and result in information loss or errors.

In order to further validate such an observation, we examined the number of errors and omissions (EOs) in the three Chinese interpreters’ interpretations utilizing the micro-unit analysis approach proposed by Gile (2011) and found that the mean value of EOs in English-Chinese interpreting is higher than in English-French interpreting and comparable to English-German and English-Japanese interpreting (Table 4). It confirms that “language-pair-specific differences can indeed have an impact on the difficulty of interpreting” (Gile, 2011: 213).

TABLE 4

**The number of micro-units affected by EOs in Chinese interpreting as compared with French, German and Japanese interpreting**

Language pairs	Findings of Gile (2011)			Findings of the present study
	English-French	English-German	English-Japanese	English-Chinese
Mean value of EOs by language	13.7	25.5	42.2	25.75

Based on the three reasons presented above, namely frequency of pauses, duration of pauses and the problems of information loss and errors, a tentative conclusion can be drawn that structural asymmetry does constitute difficulty for the simultaneous interpreters in their information processing efforts.

#### **4.2 Tactics employed by the interpreters to cope with structural asymmetry**

It was found that two coping tactics, i.e. segmentation [S] and waiting [W], are employed by the interpreters to cope with the right-branching structures. Segmentation, also called “salami technique” (Jones, 1998: 101), refers to the interpreter’s action of cutting the sentence into segments in order to avoid long pauses. It is found in the current study that this tactic is used by the interpreters in dealing with right-branching sentences when a right-branching modifier has not yet appeared to avoid long pauses and subsequent burden on their short-term memory. The second tactic, waiting, involves the interpreters’ action of pausing in order to get a complete unit of sense for better information processing. It is found in the current study that this tactic is adopted by the interpreters in order to wait until the right-branching modifier appears so that they are able to gain a better understanding of the source speech and reproduce sentences that conform to the syntax of the target language. The tactic of waiting can be further divided into two sub-types according to whether the interpreters wait for the

whole or part of the right-branching modifiers: a) [Ww], which refers to the interpreters' waiting for the whole right-branching modifier to appear in the source speech before interpreting it; and b) [Wp], which refers to waiting for part of the right-branching modifier. Table 5 shows the frequency of the coping tactics adopted by the interpreters while dealing with the 16 right-branching sentences.

TABLE 5

**Frequency of coping tactics adopted by the interpreters**

	Waiting for the whole	Waiting for part	Segmentation
Interpreter 1	6	4	6
Interpreter 2	8	4	4
Interpreter 3	10	4	2
Total	24	12	12

Through a comparison between the tactic of waiting (Ww and Wp combined) and segmentation, it is found that the former tactic is adopted much more often (36 times) than the latter (12 times). A similar contrast is observed in individual interpreters, particularly in Interpreter 3 who opted for waiting (14 times) much more than segmentation (2 times) while dealing with right-branching sentences. Such a contrast once again points to the effect of the right-branching structures as problem triggers in English-Chinese interpreting. The interpreters often have to wait until they hear the whole or part of the right-branching modifier in order to reproduce a sentence that conforms to the syntax of the target language, i.e., putting modifiers to the left of the headword or kernel sentence.

This finding can be further substantiated by a closer examination into the frequency of the two sub-types of Waiting: Ww (24 times) and Wp (12 times), which indicates that the interpreters tend to wait for the whole right-branching modifier more frequently than for part of it. It is observed in the corpus that the adoption of the former tactic, i.e., waiting for the whole modifier, is accompanied with higher incidence of information inaccuracy. That can be seen as an indicator that the adoption of such tactics in coping with the right-branching structures often induces greater risks of cognitive saturation, which also echoes Gile's "Tightrope Hypothesis" postulating cognitive saturation as a problem trigger in interpreting (ref. Gile, 1999).

**4.3 Problems concurring with the adoption of the coping tactics**

It is observed that four types of problems in the interpreters' interpreting performance can be related to the adoption of the coping tactics discussed above, including: 1) information loss and errors in rendering the right-branching sentences or the subsequent sentences; 2) simplification of information in the right-branching or the subsequent sentences; 3) dis-fluency in delivery; 4) awkward expressions<sup>1</sup>. Statistics concerning the four kinds of problems are listed in Table 6.

TABLE 6

**Problems concurring with the adoption of the coping tactics**

	Waiting for the whole	Waiting for part	Segmentation
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<sup>1</sup> Although such categorisation is mainly of observational and descriptive nature, the categories have been codified by two experienced conference interpreters and verified through cross-examination.

Info loss and errors	14	7	1
Info simplification	3	2	0
Dis-fluency	1	2	0
Awkward expressions	1	1	3
Total	19	12	4

As illustrated by Table 6, altogether 31 occurrences of problems accompany the adoption of tactic of waiting (Ww and Wp combined), as compared to 4 occurrences of problems that are associated with segmentation. The contrast is particularly evident in the problem of information loss and errors: 21 occurrences related to waiting as opposed to 1 related to segmentation. Such a contrast seems to suggest that while waiting enabled the Chinese interpreters to better process and reformulate the right-branching structures in the speech, it tends to induce much higher risk of cognitive saturation or even failure in interpreting performance. Another comparison between the numbers of information loss and errors as related to Ww (14) and Wp (7) suggests further that the longer the interpreters waited, the more inaccurate their interpretations tend to be. Compared with the tactic of waiting, while segmentation sometimes associated with awkward expressions (3 instances), it helped to reduce information loss and errors by relieving burden on the interpreter's short-term memory. Furthermore, while 5 instances of information simplification and 3 instances of dis-fluency are found as related to the tactic of waiting (Ww and Wp combined), there are no similar problems with the tactic of segmentation. Regarding the problem of awkward expressions, no significant differences are found between the tactic of waiting and that of segmentation.

Following the quantitative analysis presented above, a qualitative analysis were conducted on three typical right-branching sentences to demonstrate the problems accompanying the adoption of the coping tactics. Given the paramount importance of information accuracy in the quality of interpreting (ref. Bühler, 1986; Zwischenberger and Pöchhacker, 2010), a special focus will be laid on the problem of information loss and errors.

(5)

ST	Their memories are short,	for they have forgotten what this country	has already done	what free men and women can achieve when	imagination is joined to common purpose	and necessity	to	courage.	...
TT (Interpreter 1)	.....	但是他们已经忘了我们这个国家已经取得的成就, [But they have forgotten the achievement this country has already made.]			<0.35s> 自由的人们 [Free people]		<1.32s>在想象力和共同的目标的结合下, [Wp] [with a combination of imagination and common goal]	<0.76s>	他们取得的成就。 [made achievement]
TT (Interpreter 2)	.....	<2.28s>	我想他们的记性可能太短了。他们忘记了美国先辈曾经做过的事。 [I think their memories may be too short. They forgot what the American ancestors had done.]			<0.67s>	自由的男女他们曾经实现的伟大的 [great achievement made by free men and women]		
TT (Interpreter 3)	.....	.....	其实他们的记忆太短了。 [In fact their memories are too short.]		<0.87s>他们都忘了过去美国做过哪些事情, [They've forgotten what the U.S. has done,]		<0.6s> 美国人共同努力 [Ww] [American people's joint efforts]		<0.65s> 达成哪些目标。 [have achieved which goals]

In Example 5 the right-branching sentence contains an adverbial clause “when imagination is joined to common purpose, and necessity to courage” that signifies the condition under which “free men and women can achieve [great things]”. While the English language allows for two possible positions for the adverbial clause, that is,

either before or after the kernel sentence it modifies, the Chinese language only sees the first option as linguistically acceptable. This means that when encountering such a right-branching structure, the interpreters have to either segment the English sentence or wait until the adverbial clause appears in order to reproduce a sentence that conforms to the Chinese linguistic rules. As illustrated by the example, all the three interpreters resorted to the tactic of waiting, which are accompanied by a series of problems in information completeness and accuracy. For example, while the kernel sentence “what free men and women can achieve” was retained in all the three interpretations, the right-branching adverbial clause was mistranslated (Interpreter 3) or even omitted (Interpreter 2). Even Interpretation 1, which is the relatively complete version, omitted one of the key information segments “necessity to courage” in the clause. A further evidence of the problematic nature of such a right-branching adverbial clause is that in the subsequent sentence “what the cynics fail to understand is that the ground has shifted beneath them” two of the three interpreters mistranslated the important noun “cynics” as “他们” (they). Such mistranslation distorts the dialogic nature of the following sentences in which President Obama intended to retort his opponents with a series of counter-arguments.

(6)

ST	What the cynics fail to understand is that the ground	has shifted beneath them,	that the stale political arguments <b>that have consumed us for so long</b>	<b>no</b> longer apply.	...
TT (Interpreter 1)	.....	他们没有了解到 [They have not realized]	<0.49s>他们地下的土地已经发生了转变。 [the land beneath them has changed]	<1.16s>我们一直以来进行的政治方面的讨论实际上已经<0.83s>不再适合时宜。[Ww] [the political discussions we have long been doing have in fact become outdated.]	
TT (Interpreter 2)	.....	这些 [These]	<1.89s>心存怀疑的人可能忘了这个国家经历过多大的改变。[Ww] [cynics may have forgotten how much change the country has undergone.]		...
TT (Interpreter 3)		<2.63s>	他们不了解的是他们脚下的这个 <0.67s> [What they don't understand is that under the feet]	地都已经 [the land already]	<1.19s>就已经变质了。 [has changed;] 他们过去的价值观已经, 已经没办法再适用了。[Ww] [their past values have, have no longer applied.]

The sentence presented in Example 6 contains an attributive clause “that have consumed us for so long” following its headword “the stale political arguments”. As discussed above, all attributive modifiers in Chinese, regardless of their lengths, are left-branching, i.e., placed before their headwords. Therefore, interpreting an English sentence with right-branching attributive clause into Chinese normally requires the interpreter to restructure the sentence in the source language. Moreover this attributive clause is inserted in one of the two object clauses following the main clause of the whole sentence “what the cynics fail to understand is”. It seems that such an embedded structure induces problems both in understanding and in restructuring for the interpreters, as all the interpreters resorted to the coping tactic of waiting (Ww).

A close examination into the example reveals that the right-branching attributive clause “that have consumed us for so long” was completely omitted in two of the interpretations and its headword “the stale political arguments” was either omitted (Interpretation 2) or mistranslated as “价值观” (values) in interpretation. Further observation shows that while the subsequent sentence “The question we ask today is not whether our government is too big or too small, but whether it works” was interpreted quite accurately by Interpreters 1 and 2, its core key word “government”

was interpreted into a meaningless pronoun “这” (this) by Interpreter 3, which rendered the sentence virtually meaningless as the word “government” had not been mentioned by President Obama in the previous context.

(7)

ST	Each day brings further evidence <b>that the ways we</b>	<b>use energy strengthen our adversaries</b>	<b>and threaten our planet.</b>	...	...
TT (Interpreter 1)	...	每一天我们都看到[S] [Each day we all see]	<0.56s> 使用了 能源 [we used energy]	但是却有利于我们的敌人, 有害于我们的星球。 [but benefit our enemies and do harm to our planet.]	
TT (Interpreter 2)		<5.1s>		而我们的能源政策 [Ww] [And our energy policies]	<1.51s> 只是让我们对手更加强 大, 让我们的星球更加不安宁。 [simply make our opponents even stronger and our planet even more unsafe.]
TT (Interpreter 3)	.....	.....	.....	<0.96s>	那么每一天, <1.30s> 每天使用的能源 <0.89s>太多了。[Ww] [So each day, each day we use too much energy.]

In Example 7, the right-branching structure contains a long right-branching nominal relative clause “the ways we use energy strengthen our adversaries and threaten our planet” that modifies its headword “evidence”. To cope with this sentence, Interpreter 1 adopted the tactic of segmentation while the other two opted for waiting for the whole structure, with Interpreter 2 taking an abnormally long pause of 5.1 seconds. As the example illustrates, both tactics are accompanied by interpreting problems. In interpretation 1, while the tactic of segmentation helped reduce burden on the interpreter’s short-term memory, information accuracy suffers, especially in the third segment. In the other two interpretations, information loss or errors occur with the adoption of the tactic of waiting (Ww). As Interpretation 2 suggests, while waiting for 5.1 seconds helped the interpreter reproduce a Chinese sentence both accurate and structurally appropriate, the consequently extended EVS resulted in high pressure on the interpreter’s short-term memory and led to a major loss of information contained the subsequent sentence “There are the indicators of crisis, subject to data and statistics”, which was completely omitted in the interpretation. Similarly in Interpretation 3, the tactic of waiting was accompanied by grave information errors of the right-branching sentence “Each day brings further evidence that the ways we use energy strengthen our adversaries and threaten our planet”, which was interpreted as “每天使用的能源太多了” (Too much energy is consumed each day).

## 5. Conclusion and implication

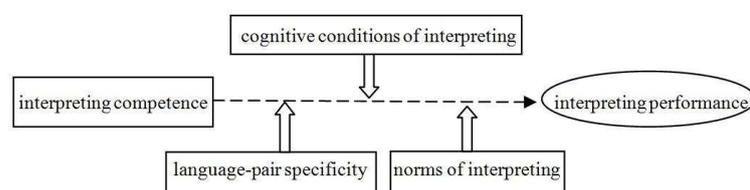
The present study confirms the role of language-pair specificity in English-Chinese simultaneous interpreting and provides evidence for its effect. It is found through analysis of the above section that structural asymmetry between the language pair of English and Chinese constitutes difficulties in E-C simultaneous interpreting, which is indicated by the high frequency of pauses and unnatural long pauses in their interpretations. In order to cope with the problems triggered by structural asymmetry, the interpreters employed the coping tactics of waiting and segmentation, with a predominance of the former tactic. Observation also shows that while waiting helps to earn more time for the interpreters to process and restructure the right-branching sentences, it is employed with a high risk of cognitive saturation which more often than not causes such problems as information loss or errors in their interpretations. This

demonstrates the problematic nature of the SL/TL structural asymmetry in E-C simultaneous interpreting. In other words, while interpreters are compelled to employ problem-solving tactics to cope with the SL-TL structural asymmetry, they have to put up with a subsequent risk of information inaccuracies.

While previous interpreting studies generally consider that the interpreting product is shaped by three major variables: a) the interpreter's interpreting competence, b) cognitive conditions on the site, and c) norms of interpreting (ref. Wang, 2012), findings of the present study suggest that language-pair specificity functions as another variable in English-Chinese interpreting (as shown in Figure 1). It also implies the necessity of considering it in the theoretical account of interpreting behaviors and activities between languages such as English and Chinese that involve wide differences in linguistic structure and cultural conceptualization.

FIGURE 1

### Variables shaping the interpreting product in English-Chinese SI



It must be pointed out that this study was conducted through the method of naturalistic observation. Although it has representative significance with its systematic analysis into the authentic data of on-site interpretations of the same speech by three professional interpreters under the similar cognitive conditions, it is still insufficient in controlling the other variables that shape the interpreting product. Such deficiency can be complemented by future experimental studies. While this study has explored only one direction of interpreting, examining the other interpreting direction (i.e. Chinese -English interpreting) is expected to bear equally interesting findings.

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