

Non-fluency and language-pair specificity in Chinese-English consecutive interpreting: A corpus-driven study

Bing Zou – Binhua Wang
Guangdong University of Foreign Studies / China
University of Leeds / United Kingdom

Abstract – Language-pair specificity, which refers to linguistic and cultural differences between the language pair, has been hypothesized as one of the variables shaping the interpreting performance and product. The current study adopts a corpus-driven paralinguistic approach to testifying the language-pair specificity hypothesis. The corpus is a bilingual parallel corpus of *Chinese-English Interpreting for Premier Press Conferences*, which consists of 200,000 words/characters in total. The original and interpreted discourses are aligned at the sentential level and annotated at linguistic, paralinguistic, and extra-linguistic levels. The paralinguistic analysis focuses on non-fluency, specifically the different types of pauses and self-repairs. It is found that a majority of non-fluencies in the interpreted utterances are syntax-driven, which means that most of the pauses and self-repairs in Chinese-English interpreting are related to syntactical structures in the original speeches. The finding implies that language-pair specificity should be considered an important variable in research and training of interpreting between syntactically-contrastive languages.

Keywords – non-fluency; language-pair specificity; consecutive interpreting; Chinese-English interpreting

1. INTRODUCTION¹

Translation and interpreting are conducted between two languages and cultures, so their products are shaped by the two distinct linguistic and cultural systems. On the one hand, it is this distinctness that endows translation and interpreting with possibility and necessity and, on the other, it is the very distinctness that poses challenges to translators and interpreters, and sometimes even makes them despaired to claim the sad fact of

¹ We would like to express our sincere gratitude to the editors for their efforts in revising the language and format of our paper. We also appreciate the support from the *Research Fund of Center for Translation Studies* (CTS202209), the *Guangdong Five-Year Plan Project on Philosophy and Social Science* (GD22WZX02–04; GD20WZX01–09), and the *Fujian Social Science Fund Youth Project* (FJ2021C111).



untranslatability or uninterpretability. The distinct linguistic (majorly syntactic) and cultural differences between the paired languages in the act of translation and interpreting are labelled as ‘language specificity’ or ‘language-pair specificity’ by previous scholars (Wilss 1978; Setton 1993; Gile 2004). Among previous studies, only a few (Setton 1993; Guo 2011; Wang and Gu 2016; Wang and Zou 2018, among others) examined problems in the English/Chinese language pair. The English and Chinese language pair is a typical representative of European and non-European language pairs, and the large linguistic and cultural divergence between them highlights the potential effects of language-pair specificity on English/Chinese interpreting. As empirical studies are still scarce on language-pair specificity in the English/Chinese language pair, issues are still awaited to be explored, such as causes of language-pair-specific problems and effects of them on the interpreting performance and product. The current study seeks to explore the relation between language-pair specificity and the interpreter’s performance and product in Chinese-English interpreting by adopting a corpus-driven paralinguistic approach with a focus on whether and how non-fluency relates to language-pair specificity.

2. LANGUAGE-PAIR SPECIFICITY IN INTERPRETING

The discussion of language-pair specificity issues in interpreting started with observational studies, which identified language-pair-specific phenomena as problem triggers in interpreting between two languages and cultures that are different or distant from each other in linguistic structures and cultural conceptualization (Wang and Gu 2016; Wang and Zou 2018).

As one of the fundamental conceptualizations in interpreting studies, however, the *théorie du sens* (‘The Interpretative Theory of Translation’) did not treat language-pair specificity as a problem trigger in interpreting, and posited that interpreters’ output “is, in principle, independent of the source language” (Seleskovitch 1978: 98). Although this assumption might represent a worthwhile effort to encourage interpreting practitioners to break away from the bound of the source language and not to be confined by the formal divergences between the source and target languages, other scholars (Moser 1978; Wilss 1978; Uchiyama 1991; Gile 1992, 2005, 2011; Riccardi 1996; Seeber 2007; Al Zahran 2021) have found that problems are triggered by language-pair specificity in interpreting. Among them, Wilss (1978: 343) proposed that “[a]ny transfer” (including translation and interpreting) is to a certain degree affected by the structural asymmetry (on morphemic,

lexemic, syntagmatic and/or syntactic levels) between the two languages involved. Wilss (1978: 350) even pointed out that “[a]ny SI process is language-pair-specific” due to the structural asymmetries or divergences, which is in line with the observations by Moser (1978) and Gile (1992). Uchiyama (1991) and Riccardi (1996) analyzed difficulties in interpreting triggered by syntactic differences in the Japanese-English and German-Italian language pairs, and proposed some coping strategies. Seeber (2007) and Gile (2005, 2011) further examined specific features of the difficulties and cognitive loads caused by language-pair specificity in interpreting. Al Zahran (2021) observed real-life data of English-Arabic simultaneous interpreting and found that the syntactic asymmetry between the English-Arabic language pair led to form-based processing by the interpreters.

As seen from the previous studies summarized above, the effect of language-pair specificity on interpreting cannot be neglected. According to Setton (1993) and Ra and Napier (2013), language-pair-specific problems are more salient between European-Asian language pairs (i.e., English-Chinese or English-Japanese) than European-European language pairs (i.e., English-French). In other words, interpreting between European and Asian languages poses special difficulties for interpreters. Setton (1993: 253–255) further suggested that the very differences between distant language pairs should be treated as “a catalyst” for invigorating future research and encouraged more researchers to investigate the language-pair-specific problems in interpreting between (Indo-)European and non-(Indo-)European language pairs.

Among the very few studies on English/Chinese interpreting (a typical representative of interpreting between the (Indo-)European and non-(Indo-)European languages), Setton (1993) observed the linguistic structural and morphological differences between English and Chinese, and discussed the difficulties caused by these differences in English/Chinese interpreting practice and training. Guo (2011) and Wang and Zou (2018) explored the effect of Chinese-English structural differences on simultaneous interpreting and consecutive interpreting respectively; they revealed that in Chinese-English interpreting the interpreter has to re-order Chinese front-loaded sentence structures into English back-loaded structures, and analyzed how such re-ordering efforts would cause extra difficulties and cognitive overloads to Chinese-English interpreters. Wang and Gu (2016) also observed the effect of language-pair specificity in English-Chinese simultaneous interpreting, and found that right-branching structures in English,

with corresponding information chunks that are syntactically different (left-branching) in Chinese, caused a lot of long pauses, information loss, and errors in the interpreting process and product. These studies suggest that language-pair specificity should be considered as one of the variables shaping the interpreting performance and product especially in the English/Chinese language pair.

It is worth noting that all these studies are based mainly on the analysis of linguistic features while a paralinguistic analysis might produce more evidence. It is also important to note that paralinguistic features (including filled/unfilled pauses, self-repairs, etc.) are typical of interpreting processes and products, and are explicit representations of interpreters' on-site performances, so a paralinguistic analysis of interpreted discourses would probably provide a new window for exploring the relationship between language-pair specificity and interpreters' performance. Therefore, the current study explores non-fluency as a typical paralinguistic feature of interpreting and an indicator for interpreters' on-site performance and discusses how it relates with language-pair specificity in consecutively-interpreted discourses in the Chinese-English language pair.

3. NON-FLUENCY IN INTERPRETING

The assessment of interpreters' performance is different from that of translators' due to the fact that interpreting involves a lot of non-verbal or paralinguistic elements. In other words, assessing interpreters' performance relies on multiple dimensions of evidence including not only linguistic (lexis, syntax, discourse, etc.) and extralinguistic (background information about the interpreter, speaker, audience/user, patron/organizer, etc.) aspects, but also paralinguistic (non-fluency, prosody, body gestures, etc.) aspects of the interpreting process and product (Zou and Wang 2014). As Setton (2011: 35) mentions, it is "pointless to attempt any realistic model of the process [of interpreting] without taking into account factors such as ... features of live speech like prosody," because these paralinguistic factors and features "give us ideas to explain the phenomena [in interpreting] —recasting, anticipation, added cohesive devices and so on" (*ibid.*: 68).

Among previous interpreting studies from the paralinguistic perspective, non-fluency remains a focus of discussion and has been considered an important indicator of interpreters' performance by multiple scholars (Mead 2000; Tissi 2000; Cecot 2001; Ahrens 2005; Pradas Macías 2006, among others). According to Tissi (2000) and Cecot

(2001), non-fluencies in interpreting can be subdivided into two major categories: 1) silent or unfilled pauses —including (non-)communicative pauses, (non-)grammatical pauses, segmentation/(non-)juncture pauses, etc.— and 2) disfluencies, including filled pauses, parenthetical sentences, utterance interruptions like repetitions, restructuring (self-correction/self-repair), false starts, etc. Mead (2000) and Tissi (2000) conducted experiments on student interpreters whose first language is Italian and asked the subjects to simultaneously interpret from German into Italian and consecutively interpret between English and Italian, respectively. Tissi (2000) found that compared to source texts, interpreters' target texts contain fewer but longer silent pauses, more grammatical pauses, and more vowel and consonant lengthening. Mead (2000) concluded that interpreting into the second language is more fluent and involves significantly more total pauses and higher filled pause times, and put forward that the causes of pauses include difficulties with formulation (of lexis/grammar) and notes, as well as logical doubts. Cecot (2001) and Pradas Macías (2006) carried out experiments by inviting professional interpreters to finish simultaneous interpreting tasks in the English-Italian and German-Spanish language pairs, respectively. Cecot (2001) revealed that segmentation pauses are most frequently used by the subjects, while Pradas Macías (2006) discovered that frequent silent pauses negatively influence users' assessment of interpreting quality. Ahrens (2005) examined natural data of English-German simultaneous interpreting by professional conference interpreters and found that, compared to the source-text speaker, interpreters have a lower rate of articulation, and make less but longer pauses.

In the English/Chinese language pair, particularly, a number of scholars have cast light on the issue of (non-)fluency in interpreting practice and training. Fu (2013) and Yuan and Wan (2019) examined the impact of directionality on student interpreters' fluency in consecutive and sight interpreting tasks respectively, and found that directionality significantly correlates with fluency performance. Jiang and Jiang (2019) and Song *et al.* (2021) invited student interpreters to finish sight interpreting and simultaneous interpreting tasks respectively, and concluded that maximum dependency distance and input rate have a significant impact on fluency performance. Tang (2020) proposed a framework of categorizing student interpreters' self-repairs in consecutive interpreting. Xu (2010) and Qi (2019) investigated the causes of professional interpreters' pauses: Xu revealed that the triggers of pauses in consecutive interpreting include organizing information, retrieving target language, and modifying production, while Qi

discovered that the causes include loosening compact structures, segmenting long information units, and explicating logical connectors. Fu (2012) and Wang *et al.* (2019) investigated pauses in student interpreters' consecutive interpreting products: Fu found that directionality has a significant impact on the frequency of silent pauses rather than on that of filled pauses, while Wang *et al.* (2019) revealed that the level of interpreting competence significantly impacts the frequency of silent and filled pauses. Wang and Li (2015) compared the fluency performances of expert and trainee interpreters in a simultaneous interpreting experiment. They discovered that, compared to trainees, experts have more pauses for monitoring production and adopting strategies, fewer pauses for formulating, waiting, conceptualizing and split attention, and more pauses occurring at major syntactic junctures. Shen *et al.* (2019:135) examined the natural data of expert interpreters' consecutive interpreting products and found that experts' pauses are motivated for "retrieving lexical and morphological information, eliminating logical doubt, and explicating cultural connotation."

The review of previous studies above comes up with some common findings: 1) non-fluency has an impact on interpreters' performance and users' evaluation, 2) directionality and levels of competence have an effect on interpreters' fluency, 3) patterns of interpreters' and speakers' fluency are not the same, and 4) possible causes of interpreters' non-fluency include lexical/morphological, syntactic/grammatical, and logical and cultural difficulties. These findings, especially the last one, imply that interpreters' performance, as measured by fluency indicators (like pauses, self-repairs, etc.), is prone to challenges posed by the features of the source-language discourse which are distinct from that of the target-language discourse, or specifically, the language-pair-specific differences. It is a pity that these studies did not move further to explore the link and interaction between language-pair specificity and interpreters' non-fluency, which enlightens and motivates us to conduct the current study for a further investigation.

4. RESEARCH DESIGN

4.1. Research questions

As mentioned above, the current study takes a paralinguistic approach to testifying the language-pair specificity hypothesis in Chinese-English consecutive interpreting. The objective of the study is to investigate the effect of language-pair specificity, as reflected

by linguistic (syntactic) changes or shifts in interpreting products, on interpreters' performance, which is measured by such non-fluency indicators as filled/silent pauses, juncture/non-juncture pauses and self-repairs. Two research questions are examined:

- 1) What are the patterns of interpreters' non-fluencies in the Chinese-English consecutive interpreting products?
- 2) What are the causes of interpreters' non-fluencies in the Chinese-English consecutive interpreting products?

4.2. *The corpus and the processing of data*

The two questions are explored through a corpus-driven approach. The corpus employed is the *Chinese-English Interpreting for Premier Press Conferences* corpus, a self-built corpus consisting of original Chinese political discourses (with 121,877 characters) and corresponding consecutively interpreted English discourses (with 97,239 words). The bilingual corpus materials were collected from the annual 'Premier Meets the Press' conferences during China's 'Two Sessions' of the congress from 1998 to 2012. The speakers involved include Premier Zhu Rongji (from 1998 to 2002), Premier Wen Jiabao (from 2003 to 2012), and journalists from news agencies all around the world. The seven interpreters involved are all from China's Ministry of Foreign Affairs, and their interpreting services adopt a consecutive mode for the press conferences which take the form of questions and answers. The corpus materials are aligned at the sentential level (using the alignment tool *ABBY Aligner 2.0*)² and annotated at linguistic (part-of-speech, using the tagging tools *TreeTagger 2.0*³ for English and *Yacsi 0.96*⁴ for Chinese), manually annotated paralinguistic (pauses, self-repairs, etc.) and manually annotated extra-linguistic (information about involved speakers and interpreters, etc.) levels.

In the current study, two types of non-fluencies are manually annotated, retrieved, and analyzed: pauses and self-repairs. Among them, four types of pauses were detected: 1) silent pauses, namely a period (over 0.25 seconds in the current study) of no articulation by the interpreters, marked with the symbol '...', 2) filled pauses (a vocalized but non-word period, marked with the symbols 'ah, eh, em, er, uh, um'), 3) juncture pauses (the

² <https://www.abby.com/>

³ <https://cis.uni-muenchen.de/~schmid/tools/TreeTagger/>

⁴ <http://corpus.bfsu.edu.cn/TOOLS.htm>

filled and filled plus silent pauses that occur at grammatical junctures or between syntactic units, including the phrase and clause, but excluding the sentence), and 4) non-juncture pauses or the silent and filled pauses that do not occur at grammatical junctures.

Besides pauses, three types of self-repairs were detected and manually annotated: 1) repetitions (namely the cases where interpreters repeat his/her preceding discourse), 2) self-corrections (cases where interpreters correct a mistake in their preceding discourse), and 3) reformulations, which are the cases where interpreters reformulate or restructure their preceding discourse.

Table 1 shows the corpus annotation scheme. The set of annotation symbols adopts a simplified method by using initials of the annotated non-fluency phenomenon. For instance, SJPY represents ‘Silent Juncture Pauses-Yes’, while SJPN stands for ‘Silent Juncture Pauses-No’ referring to silent non-juncture pauses. SRRF is an abbreviation of ‘Self-Repairs Re-Formulations’ referring to reformulations, a subtype of self-repairs.

Non-fluency indicators		Annotation examples
Major types	Subtypes	
Pauses	Silent juncture pauses	<SJPY>...</SJPY>
	Silent non-juncture pauses	<SJPN>...</SJPN>
	Filled juncture pauses	<FJPY>ah</FJPY>
	Filled non-juncture pauses	<FJPN>ah</FJPN>
Self-repairs	Repetitions	<SRRP> </SRRP>
	Self-corrections	<SRCR> </SRCR>
	Reformulations	<SRRF> </SRRF>

Table 1: The corpus annotation scheme

The processing of the data adheres to four principles:

- 1) Pauses between sentences, including both silent and filled ones, are not counted as juncture pauses in the current study, since the major function of this type of pauses is either striving for breathing or holding the floor. Only pauses at phrasal and clausal junctures are counted as juncture pauses.
- 2) Silent pauses that co-occur with filled pauses in neighboring positions are counted in the statistics, since they contain information about interpreters’ struggle against difficult situations.
- 3) Self-repairs are counted as an independent indicator of non-fluency, rather than as a subtype of pauses.

- 4) Only self-repairs that co-occur with pauses are counted in the current study, while those that occur without pauses in their neighboring positions are not included in the statistics, because the self-repairs that appear alone reflect the fact that the repairing process is not a big cognitive trouble for the interpreters.

The process of data retrieval involves: 1) using *ParaConc 296*⁵ to withdraw concordances that contain non-fluency indicators, 2) (manually) excluding cases that disobey the principles of data processing, 3) (manually) marking the causes of the non-fluency cases. The cause-marking process adopts a data-driven approach, that is, the categorization of the causes is gradually formulated along the process of marking. The specific categories of the causes are to be further discussed below.

5. RESULTS AND DISCUSSION

5.1. Patterns in the interpreters' non-fluencies

Altogether 643 interpreter pauses were found in the corpus data, including 249 filled pauses (38.72%) and 394 silent pauses (61.28%), as well as 206 juncture pauses (32.04%), and 437 non-juncture pauses (67.96%). Table 2 presents the raw figures of different types of interpreters' pauses.

	Juncture pauses	Non-juncture pauses	Total
Filled pauses	94	155	249
Silent pauses	112	282	394
Total	206	437	643

Table 2: Interpreters' pauses in the corpus

In Table 2, it is seen that filled/silent pauses, silent juncture pauses (112; 54.37%), and silent non-juncture pauses (282; 64.53%) are more frequently attested than filled juncture pauses (94; 45.63%) and filled non-juncture pauses (155; 35.47%), respectively. This fact reflects that interpreters tended to make silent pauses more often than filled pauses, whether at juncture or non-juncture positions in their utterances. This implies that the professional interpreters might try to minimize the influence of their vocalized filled pauses and show a preference for keeping silent pauses as short as possible rather than producing articulated filled pauses.

⁵ <https://paraconc.com/>

As regards juncture/non-juncture pauses, silent non-juncture pauses (282; 71.57%) are far more than silent juncture ones (112; 28.43%). An explanation for this result might be that the current study excludes those silent juncture pauses that occur alone at junctures and do not co-occur with filled pauses in their immediate adjacent positions. But the fact that filled non-juncture pauses (155; 62.25%) are more than filled juncture ones (94; 37.75%) shows that interpreters came across cognitive difficulties when they had uttered parts of a phrase or clause more often than the occasion when they had uttered a complete phrase or clause and started uttering the next phrase or clause. It is at the point of the filled non-juncture pauses when the interpreters ‘suddenly’ realized the cognitive challenge and tried to figure out a solution to that challenging situation or made a remedy for a mistake in the preceding discourse. The level of difficulties rises when the interpreters were ‘in the process’ of organizing a target utterance than when they had already ‘finished the process’ of uttering the target discourse.

In terms of the interpreters’ self-repairs, a total of 225 self-repairs are identified in the corpus, including 41 repetitions, 86 self-corrections and 98 reformulations. Table 3 summarizes the distribution of self-repairs that co-occur with four different types of pauses. It should be noted that, as mentioned above, statistics in the current study merely include those self-repairs that co-occur with pauses, so there are some more cases of stand-alone self-repairs not reported in the statistics. As is shown in Table 3, all the three types of self-repairs tend to co-occur more often with silent pauses (183; 81.33%) than filled pauses (42; 18.67%) and co-occur more frequently with non-juncture (181; 80.44%) pauses than juncture pauses (44; 19.56%).

	Filled/Silent pauses		Juncture/Non-juncture pauses		Total
	Filled	Silent	Juncture	Non-juncture	
Repetitions	9	32	7	34	41
Self-corrections	9	77	14	72	86
Reformulations	24	74	23	75	98
Total	42	183	44	181	225

Table 3: Interpreters’ self-repairs in the corpus

Examples (1) to (3) present a demonstration of the concordance of the annotated three types of self-repairs retrieved from the corpus data. Provided together with the source and target discourses are literal translations of the source discourses. The literal English translations try to deliver word-for-word information about the source Chinese discourse

and maintain the original sequence of the Chinese words and punctuations. Some words are added in the literal translations for the sake of making the clause or sentence complete and comprehensible. The added words in square brackets correspond to what is missing in the source Chinese discourse in the same position. The underlined and double-underlined signs mean that the causes of the non-fluent phenomena in the marked parts are lexis-driven and syntax-driven respectively, which will soon be discussed below.

In Example (1), the interpreter made a repetition when encountering a lexical problem with ‘吃掉’ (*chi diao*: ‘have eaten’). The interpreter realized that it would not be appropriate to collocate the noun ‘deficit’ with the verb ‘eat’, and during the period of a silent non-juncture pause, he quickly figured out a solution after repeating the words ‘it’s not’.

1. Source discourse:

[02-27] 至关重要 的 是 ， 我 这 个 赤 字 不 是 用 在 弥 补 经 常 性 的 预 算 方 面 ， 没 有 把 它 吃 掉 ， 是 用 在 基 础 设 施 建 设 方 面

Literal translation:

Most importantly, this deficit is not used on the aspect of making up the regular budget’s deficiency, [we] have not eaten it, [but] used [it] on the aspect of infrastructure development.

Target discourse:

[02-27] Most importantly, the deficit is not incurred to make up the deficiency in our regular budget. <SRRP>It’s not <SJPN>...</SJPN> it’s not</SRRP> consumed; rather the deficit is used to develop infrastructure projects.

In (2), the interpreter first came across a null-subject clause and added the subject ‘we’ after a filled non-juncture pause. Then, the interpreter found that there is no tense marker either, so he decided to add the modal verb ‘should’; the uttering of this word is incomplete (as seen in the transcription ‘sh-’), possibly due to the fact that he found modal verb ‘should’ not to be a proper choice in the linguistic context. As a result, the interpreter changed his idea and made a self-correction by using the modal verb ‘would’. This is also an example of lexical challenge to interpreters. It reflects that modal auxiliary verbs are often troublemakers for interpreters especially in political settings, which is in line with the findings in previous studies on political interpreting (Li 2018).

2. Source discourse:

[99-146] 第二是开放中国的电信市场，让外国资本进入中国的电信市场

Literal translation:

Secondly [it] is [to] open China's telecommunications market, let foreign capitals enter into China's telecommunications market.

Target discourse:

[99-146] Secondly, <FJPY>er</FJPY> we <SRCR>sh- <SJPN>...</SJPN> would</SRCR> open the telecommunications market in China to foreign investors.

In (3), the interpreter also ran into a null-subject clause and attempted to adopt a different way of handling the situation. He tried to use a passive sentence by placing the object 'students [and minors]' in subject position, but soon found that the result of such an endeavor would be problematic. The passive sentence, if completed, would be 'no students and minors are allowed to engage in dangerous activities'. In this situation, the problem is that the students and minors would be described as being self-voluntary to take the action, which is illogical and against the fact that they were actually forced or seduced to engage in those dangerous activities. It is based on these considerations during the period of a silent non-juncture pause that the interpreter decided to make a reformulation by restructuring the whole utterance. The process of making such a decision did cause a lot of cognitive overload to the interpreter. The underlying reason behind this is that Chinese is a connotative language which usually conceals the real actor of an action, and that the addressee always has to dig it out after a cognitive process of reasoning. In the example, the actor 'anyone' is not found in the source discourse, so that the interpreter had to reason it out by consuming his own cognitive resources. The very example reveals the possible cognitive overload that might be exerted on interpreters due to the language-pair specificity in the English-Chinese language pair.

3. Source discourse:

[01-221] 也就是说，绝对不能允许学生和未成年的儿童进行危险生命危险的劳动

Literal translation:

Also [that] is to say, [we] definitely cannot allow students and minors/children to engage in activities dangerous to life.

Target discourse:

[01-221] That is, <SRRF>no students <SJPN>...</SJPN> we will never allow anyone to ask the students</SRRF> or minors to engage in activities and work that will pose a danger to their life.

5.2. Causes of interpreters' non-fluencies

In order to find out what caused the above non-fluencies in interpreting, this section examines the structural changes or shifts made by the interpreters in relation to all types of non-fluency.

By means of a data-driven method of cause-marking, as mentioned above, the causes for interpreters' non-fluencies in the current study are finally categorized into three types: lexis-driven, syntax-driven, and other types, which include sensitive topics, cultural factors, etc. Table 4 presents the figures for the three types of causes of the interpreters' seven types of non-fluencies.

		Syntax-driven	Lexis-driven	Other	Total
		causes	causes	causes	
Pauses	Filled pauses	173	76	0	249
	Silent pauses	221	166	7	394
	Juncture pauses	152	48	6	206
	Non-juncture pauses	242	194	1	437
Self-repairs	Repetitions	22	17	2	41
	Self-corrections	19	67	0	86
	Reformulations	64	34	0	98

Table 4: Totals of interpreters' pauses

As seen in Table 4, syntax-driven causes constitute the largest proportion among all the four types of pauses, that is, 69.48 percent for filled pauses (173), 56.09 percent for silent pauses (221), 73.79 percent for juncture pauses (152), and 55.38 percent for non-juncture pauses (242). Among all the three types of self-repairs, most of the causes of repetitions (22; 53.66%) and reformulations (64; 65.31%) are syntax-driven, while most of the causes of self-corrections are lexis-driven (67; 77.91%). The reason why most self-corrections are caused by lexical problems could be noticed in example (2), in which the self-correction by the interpreter is to solve a simple lexical problem. Actually, most cases of self-corrections found in the corpus data are related to the treatment of lexical problems such as that illustrated in (2).

Overall, except for the cases of self-corrections, the results about the causes of interpreters' non-fluencies are inspiring, for it implies that syntactic problems seem to be the major causes of the interpreters' pauses, repetitions and reformulations as discovered through the corpus data. In other words, syntactic differences between the source language (Chinese) and the target language (English) cause most of the challenges to interpreters. In what follows, the current study will discuss the interactive relationship between language-pair specificity and interpreters' performance as reflected by non-fluency indicators, and some characteristic examples will be provided.

In (4), below, the interpreter first made a silent pause between the words 'we' and 'need to', all of which are words added by the interpreter. The addition of 'we' is made for the consideration that the first part of the source discourse is a null-subject clause, so the interpreter had to add an appropriate subject by referring to the context. The addition of 'need to' is due to the fact that the clause does not have an obvious tense marker, so the interpreter had to figure out a solution and finally chose the modal auxiliary verb 'need to' without clearly mentioning the tense. All these complex thoughts and actions of the interpreter happened in a flash, or exactly during the period of the silent pause, on the very site of the interpreting activity. Actually, null subject and absence of tense markers are typical features of Chinese but are rarely seen in English. Completing the clause or sentence by adding a proper subject and a tense marker (or a substitute for tense markers) did consume a lot of the interpreter's cognitive resources, as is reflected by the silent non-juncture pause that interrupted the interpreter's fluency. It is interesting to compare the second part with the first part of the source discourse. The second part is also a null-subject clause with no specific tense marker, but the interpreter went smoothly, without any pauses, by adding the subject 'we', the modal verb 'need to' (as a substitute for tense markers) and the conjunctive words 'and' and 'also'. The reason for the smoothness of the second part may be that the interpreter had just overcome the cognitive challenge in the first part and immediately drew experiences from it.

4. Source discourse:

[07-120] 减少权力过分集中的现象，加强人民对政府的监督

Literal translation:

[We] reduce the phenomenon of over-concentration of power, [and] enhance people's oversight over the government.

Target discourse:

[07-120] We <SJPN>...</SJPN> need to reduce the over-concentration of power, and we also need to enhance the oversight <FJPN>er</FJPN> <SJPN>...</SJPN> <SRRF>of <SJPN>...</SJPN> over</SRRF> the government by the people.

The other three non-juncture pauses in the second clause of the target discourse have something to do with a syntactic structure specific to Chinese, that is, the left-branching modifying structure marked with the character ‘的’ (*de*, similar to the possessive ‘s in English). In English, possessive ‘s always goes after a noun while, in Chinese, preceding the character *de* there can be a noun, a phrase, a simple clause, or even a complex clause. This language-specific difference often causes trouble to Chinese-English interpreters (Wang and Zou 2018). As is shown in (4), a word-for-word rendering of the second part of the source discourse is ‘enhance people-toward-government ‘s oversight’. The long left-branching structure before the word ‘oversight’ makes the rendering awkward and grammatically incorrect. It is a common practice for translators and interpreters to either render the *de* structure (like ‘人民的利益’, literally translated as ‘people ‘s interests’) into the possessive ‘s structure (like ‘the people’s interests’), or render the *de* structure into the possessive *of* structure (like ‘interests of the people’) if a noun precedes the character *de*. However, if what precedes the character *de* is a phrase or a clause, the situation becomes complicated and has to be treated carefully in a case-by-case manner. In the very example, the interpreter should have easily rendered the second part like ‘enhance people’s oversight over the government’, but since the interpreter had already uttered the word ‘oversight’ beforehand, the interpreter had no choice but to keep moving and adopting another solution (‘enhance the oversight over the government by the people’), possibly for the sake of avoiding a whole restructuring of the already uttered words. It is also noticeable that the interpreter first used the word ‘of’ after the word ‘oversight’: probably at that moment in the interpreter’s mind came out the expression ‘oversight of the people’, but he soon realized that this might not be a correct rendering, so he just changed the structure into ‘oversight ... by the people’. All these complicated thoughts and actions took place within the short period of one filled pause and two silent pauses, just as the annotation in the target discourse shows. The restructuring of the *de* structure, together with the addition of the missing subject and tense marker, helps reveal the cognitive difficulties, underlying the interpreter’s performance, that language-pair specificity in the English-Chinese language pair might give rise to.

In (5), below, the interpreter made two reformulations. Both of the self-repairs are accompanied by filled or silent pauses, which serves as triangulated evidence of the cognitive challenge that the interpreter was experiencing. In this example, the first reformulation was made due to the fact that the second clause of the source discourse (literally translated as ‘affected some Japan’s Banks’ debts’) does not have a subject, which results in a silent pause during which the interpreter had to add an appropriate subject (‘this problem’). It is within the period of this pause that the interpreter might have had a quick search in his memory or a quick check of his notes. Absence of subject is a typical phenomenon in Chinese, but rarely seen in English. Finding out what the missing subject is greatly relies on the reasoning and even guessing of the readers or listeners from the context. In the example, at the moment when the speaker (i.e., the Premier) quoted and responded again to the journalist’s question about Japanese banks’ debts, it is already 28 sentences away from the moment when the question was proposed by the journalist. So, the interpreter had no choice but to search his memory or check his notes in order to tackle his uncertainty about what the journalist mentioned before, that is, what affected Japanese Banks’ debts. Such a process, taking place in a very short period of time though, requires a huge amount of cognitive efforts.

5. Source discourse:

99-123] 对于刚才你的提问，影响了一些日本银行的这个债务，我也感到遗憾，但是我想，今后可能也不会再有了吧

Literal translation:

Regarding just now your question, [the problem] affected some Japanese banks’ debts, I also feel regretful, but I think, in the future maybe [such problem] will not arise anymore.

Target discourse:

[99-123] I regret that <SRRF>this question <SJPN>...</SJPN> this problem</SRRF> has somewhat affected <FJPN>er</FJPN> some Japanese banks. <SRRF>And <FJPY>er</FJPY> <SJPY>...</SJPY> but</SRRF> I guess maybe there will not be such situation in the futures.

In (5), after solving the problem with the missing subject, the interpreter came across a syntactic problem which is caused by the *de* structure, as is seen in the second clause of the source discourse. A literal translation of this structure would be ‘some Japanese banks’ debts’. The interpreter might have checked his memory and notes, and finally was sure that the word ‘debts’ did not appear in the journalist’s question. So, the interpreter

decided to delete it in the target discourse after a period of filled non-juncture pause. This reflects that in political settings, interpreters might play the role of monitoring and checking the authenticity of the source discourse by the speaker, whose role also brings to interpreters lots of cognitive overloads, as is seen from the occurrence of the filled non-juncture pause. In the second clause of the target discourse, the interpreter made the second reformulation, which is caused by a logic doubt. There are two explanations for the interpreter's use of the word 'and': one is that it serves as just a language filler which might help the interpreter gain some seconds for breath, the other is that it is a mistake made by the interpreter. Whatever the truth is, the filled and silent non-juncture pauses after the word do reveal that the interpreter immediately realized that the coordinating conjunction might not be appropriately appearing in the position. So, after a period of two pauses' time, the interpreter reformulated the logical link between the two clauses by using the contrasting conjunction 'but', whose process is in fact also in great demand of the interpreter's cognitive efforts.

The discussion of examples (4)–(5) above might help explain why most of the causes of interpreters' non-fluencies are syntax-driven. The language-pair-specific differences between English and Chinese, especially syntactic differences such as null-subject clauses, absence of tense markers, the *de* structures and invisibility of the actor of an action verb, did cause plenty of trouble to the interpreters who had to stop for a while to seek the most appropriate solutions. The very solution-seeking process demands that interpreters invest a lot of cognitive resources, leading to the fact that the interpreters had no choice but to sacrifice the fluency of their target utterances for the sake of gaining enough time for (re-)thinking, memory-retrieving, notes-checking, information-(re)organizing, repeating, self-correcting, reformulating, or restructuring. That is when the non-fluencies happen. In a word, the journey from language-pair specificity to interpreter's non-fluencies is a time-consuming and cognitive effort-consuming process which should be considered as an important factor in the evaluation and assessment of interpreters' on-site performance.

6. CONCLUSION

The current study conducted a descriptive corpus-driven investigation to identify the relationship between language-pair specific issues and non-fluency in interpreting. It is found that the language-pair-specific structural differences between English and Chinese

function as a cause for interpreters' non-fluencies including such pauses as filled/silent pauses and juncture/non-juncture pauses, as well as such self-repairs as repetitions and reformulations. The finding implies that, in addition to other major variables such as interpreter competence, on-site cognitive conditions and norms of interpreting (Wang and Gu 2016), language-pair specificity should be considered as one of the variables shaping the interpreting performance and product, especially for language pairs that contrast sharply in syntactic structures.

REFERENCES

- Ahrens, Barbara. 2005. Prosodic phenomena in simultaneous interpreting: A conceptual approach and its practical application. *Interpreting* 7/1: 51–76.
- Al Zahran, Aladdin. 2021. Structural challenges in English>Arabic simultaneous interpreting. *Translation & Interpreting* 13/1: 51–70.
- Cecot, Michela. 2001. Pauses in simultaneous interpretation: A contrastive analysis of professional interpreters' performance. *The Interpreter's Newsletter* 11: 63–85.
- Fu, Rongbo. 2012. Pausing in two-way E-C consecutive interpreting: A contrastive analysis of trainee interpreters' performance. *Foreign Language Teaching and Research* 3: 437–447.
- Fu, Rongbo. 2013. Directional effects on disfluencies in consecutive interpreting. *Modern Foreign Languages* 2: 198–205.
- Gile, Daniel. 1992. Predictable sentence endings in Japanese and conference interpretation. *The Interpreters' Newsletter Special Issue* 1: 12–23.
- Gile, Daniel. 2004. Issues in research into conference interpreting. In Harald Kittel, Armin P. Frank, Norbert Greiner, Theo Hermans, Werner Koller, José Lambert and Fritz Paul eds. *An International Encyclopedia of Translation Studies (Vol. I)*. Berlin: Mouton de Gruyter, 767–779.
- Gile, Daniel. 2005. Directionality in conference interpreting: A cognitive view. In Rita Godijns and Michaël Hinderdael eds. *Directionality in Interpreting: The 'Retour' or the Native?* Ghent: Communication and Cognition, 9–26.
- Gile, Daniel. 2011. Errors, omissions and infelicities in broadcast interpreting: Preliminary findings from a case study. In Cecilia Alvstad, Adelina Hild and Elisabet Tiselius eds. *Methods and Strategies of Process Research: Integrative Approaches in Translation Studies*. Amsterdam: John Benjamins, 201–218.
- Guo, Liangliang. 2011. *An Analysis of the Word Order Pattern in the SI Target Language and its Underlying Reasons in the Language Combination of English and Chinese*. Shanghai: Shanghai International Studies University dissertation.
- Jiang, Yue and Xinlei Jiang. 2019. Effect of maximum dependency distance of source text on disfluencies in interpreting. *Foreign Languages Research* 1: 81–88.
- Li, Xin. 2018. *The Reconstruction of Modality in Chinese-English Government Press Conference Interpreting: A Corpus-based Study*. Singapore: Springer Nature Singapore.
- Mead, Peter. 2000. Control of pauses by trainee interpreters in their A and B languages. *The Interpreter's Newsletter* 9: 199–209.

- Moser, Barbara. 1978. Simultaneous interpretation: A hypothetical model and its practical application. In David Gerver and H. Wallace Sinaiko eds. *Language Interpretation and Communication*. New York: Plenum, 353–368.
- Pradas Macías, Macarena. 2006. Probing quality criteria in simultaneous interpreting: The role of silent pauses in fluency. *Interpreting* 8/1: 25–43.
- Qi, Taoyun. 2019. Pause frequency characteristics of professional interpreter's English-Chinese simultaneous interpreting and their cognitive processes: A case study based on a small-sized corpus with dual modalities. *Foreign Languages and Their Teaching* 5: 135–146, 151.
- Ra, Sophia and Jemina Napier. 2013. Community interpreting: Asian language interpreters' perspectives. *Translation & Interpreting* 5/2: 45–61.
- Riccardi, Alessandra. 1996. Language-specific strategies in simultaneous interpreting. In Cay Dollerup and Vibeke Appel eds. *Teaching Translation and Interpreting 3: New Horizons*. Amsterdam: John Benjamins, 213–221.
- Seeber, Kilian. 2007. *Cognitive Load in Simultaneous Interpreting: A Psychophysiological Approach to Identifying Differences between Syntactically Symmetrical and Asymmetrical Language Structures*. Geneva: University of Geneva dissertation.
- Seleskovitch, Danica. 1978. *Interpreting for International Conferences: Problems of Language and Communication*. Washington: Pen and Booth.
- Setton, Robin. 1993. Is non-intra-IE interpretation different? European models and Chinese-English realities. *Meta* 38/2: 238–256.
- Setton, Robin. 2011. Corpus-based interpretation studies (CIS): Overview and prospects. In Alet Kruger, Kim Wallmach and Jeremy Munday eds. *Corpus-based Translation Studies: Research and Applications*. London: Continuum International, 33–75.
- Shen, Mingxia, Qianxi Lv and Junying Liang. 2019. A corpus-driven analysis of uncertainty and uncertainty management in Chinese premier press conference interpreting. *Translation and Interpreting Studies* 14/1: 135–158.
- Song, Shuxian, Dechao Li and Jianshe Zha. 2021. An empirical and corpus-based study on the effects of input rate on fluency in simultaneous interpreting. *Foreign Language Research* 3: 103–108.
- Tang, Fang. 2020. Features of interpreting learners, self-repairs in English-Chinese consecutive interpreting. *Chinese Translators Journal* 3: 67–77, 188.
- Tissi, Benedetta. 2000. Silent pauses and disfluency in simultaneous interpreting: A descriptive analysis. *The Interpreters' Newsletter* 10: 103–127.
- Uchiyama, Hiromichi. 1991. Problems caused by word order when interpreting/translating from English into Japanese: The effect of the use of inanimate subjects in English. *Meta* 34/2: 404–413.
- Wang, Binhua and Tao Li. 2015. An empirical study of pauses in Chinese-English simultaneous interpreting. *Perspectives* 23/1: 124–142.
- Wang, Binhua and Yukui Gu. 2016. An evidence-based exploration into the effect of language-pair specificity in English-Chinese simultaneous interpreting. *Asia Pacific Translation and Intercultural Studies* 3/2: 146–160.
- Wang, Binhua and Bing Zou. 2018. Exploring language specificity as a variable in Chinese-English interpreting: A corpus-based investigation. In Mariachiara Russo, Claudio Bendazzoli and Bart Defrancq eds. *Making Way in Corpus-based Interpreting Studies*. Singapore: Springer Nature Singapore, 65–82.
- Wang, Jiayi, Defeng Li and Liqing Li. 2019. A study of pauses in EFL learner's interpreting based on PACCEL-S corpus. *Foreign Language Education* 5: 78–83.

- Wilss, Wolfram. 1978. Syntactic anticipation in German-English simultaneous interpreting. In David Gerver and H. Wallace Sinaiko eds. *Language Interpretation and Communication*. New York: Plenum, 343–352.
- Xu, Haiming. 2010. Pauses in conference consecutive interpreting from English into Chinese: An empirical study. *Foreign Languages Research* 1: 64–71.
- Yuan, Shuai and Hongyu Wan. 2019. The impacts of directionality on the fluency of sight translation. *Shanghai Journal of Translators* 1: 30–37.
- Zou, Bing and Binhua Wang. 2014. Transcription and annotation of paralinguistic information in interpreting corpora: The status quo, problems and solutions. *Shandong Foreign Language Teaching Journal* 4: 17–23.

Corresponding author

Bing Zou

Guangdong University of Foreign Studies

School of Interpreting and Translation Studies

Center for Translation Studies

North Baiyun Avenue 2

510420 Guangzhou

China

Email: zoubing@gdufs.edu.cn

received: November 2022

accepted: February 2023