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An empirical study of pauses in Chinese-English simultaneous interpreting

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This empirical study explores the characteristics of and motivations for pauses in Chinese-English (C-E) simultaneous interpreting (SI). The data were collected from a simultaneous interpreting task in which five expert interpreters and five trainee interpreters interpreted an authentic speech from Chinese into English. A bilingual corpus was built comprising transcripts of the speech and the interpretations and pauses were codified for analysis. Retrospective interviews were conducted to stimulate subjects' recall of their motivations for unnatural pauses in SI production. The major findings are: First, pauses are less frequent but longer in C-E simultaneous interpreting than in the original speech. Second, there is a hierarchical distribution of pauses corresponding to syntactic complexity, except that pauses inside phrases are disproportionately frequent. Third, major motivations for unnatural pauses in C-E simultaneous interpreting can be attributed to SI-specific strategies such as waiting, formulating and restructuring. Fourth, compared with trainees, expert interpreters have fewer and shorter pauses and their pauses tend to be more appropriate and occur mainly at major syntactic junctions. Although both groups share major motivations for unnatural pauses, expert interpreters have remarkably fewer pauses due to formulating, waiting, conceptualising and split attention but more pauses due to monitoring and adoption of strategies.

Keywords: Chinese-English simultaneous interpreting; pauses; characteristics and motivations; empirical study

1. Introduction

Good¹ interpreters are assumed to be proficient public speakers (Herbert, 1952, p. 59) and are supposed to interpret in a natural way as if they were making a speech of their own (Seleskovitch, 1978, p. 97). In order to do so, they must not only take care of the content but also of the prosodic aspect of their delivery. However, bound by the time and cognitive constraints of simultaneous interpreting (SI), interpreters often find it hard to be a genuine 'natural' speaker. As Barik (1975) pointed out, Authors writing about the way interpreters speak tended to assume that it is the same as in spontaneous monolingual production. He refuted such an assumption and viewed simultaneous interpreting as being 'less smooth than natural speech' (p. 294). Such a view was also partially echoed by Shlesinger (2008), who considered simultaneous interpretation as a special type of discourse with its distinctive characteristics that she named 'interpretese'.

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To better understand the discourse produced by simultaneous interpreters, pauses can be studied as an important parameter of orality, a typical feature of interpreted discourse. The occurrence of filled and unfilled pauses as a salient feature of SI production is best summarised by Pöchhacker (2004) as follows:

A dimension of orality which is most immediately linked with the production process in interpreting is the limited scope of planning and its reflection on the interpreter's product in the form of hesitation phenomenon or 'dis-fluencies', the most general index of which is filled and unfilled pauses. (p. 125).

This study seeks to explore the characteristics of 'interpretese' in SI by conducting an experimental study on three dimensions of the parameter of pauses: frequency, duration and syntactic distribution. It also explores the motivations for pauses in Chinese-English SI through retrospective interviews with the interpreters.

2. Research background

A pause means a break in speaking or a moment of silence. In order to define a pause, the length of the break or silence must be clearly established. Dechert and Raupach (1980) first determined that for a break to be considered a pause, it has to have a minimum duration of 0.3 seconds. This has since become the adopted standard in linguistic studies and has thus been adopted in the present study.

2.1 Characteristics of pauses in spontaneous speech

Characteristics of pauses in spontaneous speech are related to several variables including speech rates, syntactic positions and discourse types. Relevant studies are reviewed below.

2.1.1 Pauses and speech rates and syntactic positions

According to previous studies (e.g., Grosjean & Collins, 1979; Cenoz, 1998), duration and frequency of pauses are dependent both on the rate of speaking and on the syntactic positions of pauses.

Grosjean and Collins (1979) found that linguistic categories are good predictors of frequency and duration of pauses. Examining the percentage of pause slots at each of the seven linguistic locations at five reading rates, they found that the frequency of pauses is a function of both speech rates and linguistic locations of pauses. The mean duration of pauses is longer at the end of the sentence than at other locations and as the linguistic importance of breaks diminishes, so does the duration of pauses. That means a hierarchical distribution of pause duration according to the complexity of the linguistic structure.

Cenoz (1998) divided pauses into juncture (or natural) pauses and non-juncture (or unnatural) pauses. Juncture pauses mark the boundaries between syntactic units such as phrases, clauses and sentences while non-juncture pauses are those within the syntactic units and are deemed to be unnatural.

2.1.2 Pause and discourse types

Previous studies found that features of pauses vary among different types of discourses. Barik (1968) found that when a speech is read out, pauses occurring at grammatical

junctures become much shorter than in the original spontaneous speech. He explained that reading-aloud represents a situation where the reader does not have to perform the same searching and encoding operation as the original speaker, so that juncture pauses in reading are free of the hesitation component which may accompany them in the spontaneous speech.

Duez (1982) investigated pause features in three types of speech: political interviews, casual interviews and carefully prepared political speeches. He found higher frequency and longer duration of silent pauses in carefully prepared political speeches and a correlation of silent pauses with syntactic structures, particularly at clause and phrase boundaries. He also found frequent and long non-silent pauses in interviews, which are rarely seen in political speeches. These findings point to stylistic differences of pauses and the rhetorical effect of silent pauses in political speeches. Gustafson-Capková and Megyesi (2001), who studied the length, frequency and position of various types of pauses in three different speaking styles, i.e. elicited spontaneous dialogues, professional reading and non-professional reading, also found varying patterns of pausing across speaking styles.

2.2 Characteristics of pauses in interpreting

Based on the previous discussion, we can see that frequency, duration and syntactic distribution of pauses are related to speech rates, syntactic positions and discourse types. In interpreting studies, it is found that there exists an additional variable, i.e., the source text (ST). The influence of the ST on target text (TT) production is self-evident in that production of the TT must depend on the ST. Therefore most studies on pauses in interpreting have taken a ST-TT comparative approach.

Alexieva (1988), in her research on pause patterns in simultaneous interpreting performed by student interpreters, found lower frequency and shorter duration of pauses in SI output than in the source speech. Pöschhacker (1995) confirmed the findings and found that pauses are significantly less frequent in the German interpretation than in the English source speech.

Tissi (2000) found that the occurrence of silent pauses in interpreters' delivery is related to those in the ST. In her experiment, both the ST and TTs have a high incidence of pauses between 0.25 and 1.25 seconds but the TTs also have a remarkable incidence of pauses between 2.5 and over 5 seconds that do not exist in the ST.

Ahrens (2005), in the analysis of prosodic patterns in a corpus of authentic professional simultaneous interpretations from English to German, found that prosodic features in the target texts show 'certain characteristics that are specific to simultaneous interpreting' (p. 51) and that there are fewer but proportionally longer pauses in TTs than in the ST.

In addition to the variable of the ST, pauses are also found to be related to interpreting expertise and interpreting directionality. Mead (2000, 2002) studied filled and unfilled (silent) pauses as related to production skills at different levels of expertise. In his experiment with three groups of subjects at different levels of expertise interpreting consecutively between English and Italian, it was found that the duration and frequency of pauses are functions of interpreting expertise and directionality. As interpreting expertise was enhanced or directionality was shifted from A-B to B-A, both the duration and frequency of pauses were reduced.

Yang (2011) compared novice and expert interpreters in their decision-making process in tasks of sight interpreting and SI with text and came to a similar conclusion

that novice interpreters pause more often than expert interpreters. She also studied the distribution of pause positions in SI by examining frequencies of pauses (>2s) at six syntactic positions: before sentences, before clauses, between the subject and the predicate, between the predicate and the object, between phrases, and inside phrases. She found that compared with novice interpreters, expert interpreters had ‘proportionally fewer pauses’ (p. 56) before sentences and clauses and within phrases, and ‘much fewer pauses’ (p. 56) between the subject and the predicate.

In summary, the occurrence of pauses in simultaneous interpreting can be related to several variables: speech rates and discourse types of the ST, levels of expertise of interpreters and interpreting directionality. That requires certain variables to be controlled in the experiment design of tasks in order to reveal the features of pauses under study. And since the ST is another variable that is specific to studies on pauses in SI, findings on features of pauses in interpreting can be meaningful only when they are compared with those in the ST.

2.3 Motivations for pauses

2.3.1 Motivations for pauses in spontaneous speech

According to relevant theories of speech production, the origin of speech dis-fluencies can be linked to certain stages of speech production (Toth, 2011). Goldmann-Eisler (1968) analysed the occurrence of hesitation pauses in interviews and found that hesitation pauses in interviews indicate content, syntactic and lexical planning. Cenoz (1998), who studied pauses and communicative strategies in second language speech, categorised the motivations for pauses into lexical, morphological and planning pauses.

Employing Cenoz’s categorisation, Miao (2009) studied three groups of Chinese students with English as their second language but at different proficiency levels and found that a majority of pauses are planning pauses and that as English proficiency improves, planning pauses decrease but lexical and morphological pauses increase.

2.3.2 Motivations for pauses in interpreting

Previous research in this regard has touched upon the motivations for pauses in both consecutive and simultaneous interpreting but explored the issue in different breadth and depth.

As for consecutive interpreting, He (2007) summarised causes of filled pauses in it as including: a) high density of information; b) unfamiliar proper nouns; c) syntactic difference between the ST and TT; d) external factors such as noise, strong accent or poor English on the part of the speaker; and e) idiosyncrasies of the interpreter. Xu (2010) explored motivations of pauses in consecutive interpreting by trainee interpreters in an experimental study. Based on Levelt’s speech production theory (Levelt, 1989), he classified pauses in consecutive interpreting into four categories: pauses in conceptualisation, pauses in formulation, pauses due to the adoption of interpreting strategies and other types. He found that frequent pauses are related to note reading, followed by conceptualisation, formulation, repair and the adoption of interpreting strategies.

In simultaneous interpreting, Goldmann-Eisler (1968) found that syntactic and lexical planning and restructuring of the ST structure by the interpreter in particular, led to increased hesitations in SI. Ahrens (2005) attributed long pauses in SI to two factors: the requirement of certain ST input before corresponding TT output and additional cognitive capacity needed for the formulation effort in the target language. Cecot (2001)

incorporated communicative pauses into his scope of research, whose study showed that interpreters tend to follow the speaker's pattern of communicative pauses unconsciously and that there is the occurrence of hesitation pauses in the TT, which have no counterparts in the ST.

In summary, while pauses in spontaneous speech are linked to difficulties at certain stages of language production and content planning, in interpreting, motivations that are specific to this activity need to be considered. Some are input-generated, others can be attributed to structural differences, and still others can be related to employment of interpreting strategies, all of which will be explored systematically in the present study.

3. Research questions

In order to explore the characteristics of and motivations for pauses in Chinese-English simultaneous interpreting, we focus our study on the following three questions:

- (1) What are the characteristics of pauses in C-E simultaneous interpreting in terms of their frequency, duration and syntactic distribution?
- (2) What are the major motivations underlying the occurrence of unnatural pauses in C-E simultaneous interpreting?
- (3) What are the differences in the patterns of and motivations for pauses between trainee interpreters and expert interpreters?

4. Research design

4.1 Control of variables

Based on the above review, characteristics of pauses in interpreting are related to several variables including speech rates, syntactic positions, discourse types of the ST, levels of expertise and directionality. In order to obtain meaningful results, some variables have to be properly controlled.

In this research, controlled variables include speech rates, discourse types and directionality, so that it can represent the typical situation of C-E simultaneous interpreting. The independent variable is the levels of interpreting expertise and dependent variables include characteristics of pauses (frequency, duration and syntactic distribution) and motivations for pauses. Considering that the ST is another variable that is specific to studies on pauses in interpreting, the ST-TT comparative approach is adopted in the research.

4.2 Experiment

4.2.1 Subjects

The research subjects include five expert interpreters and five trainee interpreters in China. The five professionals are all freelance conference interpreters, who have a minimum of ten years' experience. The five trainee interpreters have just completed three years' training in conference interpreting in a School of Interpreting and Translation Studies. They are all Chinese native speakers and have learned English as a foreign language for over ten years prior to the training. In terms of interpreting competence, they have received training in the same program and there was no statistically significant difference in their scores in the final SI examination (see [Table 1](#)). In addition, as trainee interpreters they had little field experience in conference interpreting.

Table 1. Scores of the five trainee interpreters in the final SI examination

Trainees	1	2	3	4	5
Scores	88	85.5	84	86	83

Although the subjects of this study include five expert interpreters and five trainee interpreters, the size of the corpus itself is still limited. That is mainly because manual transcription of interpretation recordings and manual codifications of prosody features are extremely time-consuming. As Ahrens (2005) pointed out, 'Although computer-aided analysis is very helpful, analysing prosody remains difficult and time-consuming for the researcher' (p. 70). Pöchhacker (2004) also noted that:

Until advances in speech signal detection and electronic text encoding make it easier to overcome the written-language bias of corpus linguistics, studies of paralinguistic features of orality in interpreting will have to rely on intensive manual analysis of limited scale corpora, albeit with more advanced technological support. (p. 140)

4.2.2 Experimental materials

The material used in the simultaneous interpreting task is typical of conference speeches in terms of speech rate and discourse types. It is a video-recorded spontaneous speech of twelve minutes in Chinese, delivered at an average speech rate (120 words per minute) at the Roundtable Meeting of the Sixth China-Shenzhen Consumer Goods Procurement Fair. It is about general topics in business and trade and is deemed to be of medium level in difficulty and technicality by the expert interpreters in retrospective interviews.

4.2.3 Procedure

Before the interpreting task, the subjects were given 30 minutes for pre-task preparation, during which they were briefed about the background knowledge of the conference speech and the speaker and were given a glossary list in written form. In addition, to mimic the scenario of on-site interpreting, a small audience was invited to the site.

After preparation, all the subjects were asked to interpret the video-recorded speech in the simultaneous mode and their interpretations were recorded on double-track recordings with the software of Adobe Audition 3.0.

4.3 Retrospective interviews

In order to corroborate the data generated from the interpreting task, retrospective interviews were conducted with the subjects immediately after the experiment. In the interviews, recorded interpretations were played back to the subjects and they were stimulated to recall their motivations for the unnatural pauses in interpreting. The interview questions were left open deliberately in order to solicit 'objective' answers from the subjects. It is interesting to note that not all pauses could be accounted for by the subjects in the interviews. Natural pauses (usually very short pauses) were considered by them as associated with normal breaks in breathing and normal speech segmentation, so the focus of the interviews was on unnatural pauses.

4.4 Corpus and its codification

Recordings of both the original speech and the interpretations in the experiment were transcribed later and pauses were classified and assigned codes indicating their types (filled or unfilled), durations and syntactic positions. Recordings of the retrospective interviews were also analysed and pauses in the transcripts of interpreted speeches were classified and codified again in terms of their motivations.

All the utterances in the ST and TTs were transcribed in such a manner as to represent the features of spoken discourse, which include but are not limited to false starts, repetitions and filled pauses, such as 'ahh, eh', etc. A bilingual parallel corpus of approximately 15,000 words was built from the transcripts, which contains one Source Text and 10 Target Texts. The corpus were codified and marked according to the rules of codifications shown in Table 2.

Table 2. Codifications of the corpus

	Methods of Codification	Examples of Codifications
Unfilled pauses	(duration)	(0.5s), (2.3s)
Filled pauses	(duration-ahh), (duration-ehh)	(0.5s-ahh), (0.5s-ehh)
Syntactic positions of pauses	[syntactic position]	[1] [2] [3] [4] [5] [6]
Motivations for pauses	[motivation]	[C] [F] [M] [W] [R] [G] [S]

Note: [1] before sentences, [2] before clauses, [3] between subject and predicate verb, [4] between predicate verb and object, [5] between parallel structures, [6] inside phrases [W] Waiting; [F] Formulating; [R] Restructuring; [C] Conceptualising; [M] Monitoring; [S] Split attention; [G] Generalisation and simplification

5. Findings and discussion

In order to explore the characteristics of pauses in Chinese-English simultaneous interpreting, three parameters are observed and statistically measured in the corpus: frequency, duration and syntactic distribution of pauses (research question one). Motivations for pauses are also analysed in the codified corpus, which will be discussed and explained with reference to the data obtained from the retrospective interviews (research question two, see below).

5.1 Frequency of pauses in C-E simultaneous interpreting

Statistics of the mean frequencies of pauses in the source text and target texts are shown in Table 3.

Three findings can be deduced as follows from a comparison of the mean frequencies of pauses between the ST and TT and between the two groups:

Table 3. Mean frequency of pauses in each group as compared with ST

	Mean frequency of pauses
ST	231
tt	160.4
TT	184.2

Note: tt: the expert group; TT: the trainee group

- (1) The frequency of pauses in SI is reduced as compared with the source speech. The mean frequency of pauses in both expert interpreters (160.4) and trainee interpreters (184.2) are lower than that of the ST (231). This confirms previous findings that the average number of pauses in the TT is lower than that in the ST (e.g., Alexieva, 1988; Tissi, 2000). Tissi (2000) attributed reduced frequency of pauses in SI to the fact that what the interpreter delivers in SI is spontaneous speech based on the ST, so regardless of the number of pauses per minute in the original texts, the interpreter always tries to maintain the same numbers of utterances per minute in the production of the TT. He also added that it might also be because the interpreter’s average pauses are longer than the speaker, a point that will be discussed in the following section.
- (2) Expert interpreters have fewer pauses (160.4) than trainee interpreters (184.2), which indicates that with increased expertise expert interpreters become more fluent in their production and more proficient in the control of pauses. This finding echoes that of Yang (2011), who concluded that as interpreters’ expertise develops pauses will decrease proportionately and that reduced frequency of pauses can be regarded an important sign of expertise enhancement.
- (3) Statistics show that frequencies of unfilled pauses far outnumber filled pauses in all subjects (see Table 4), which suggests that simultaneous interpreting is a highly stressful activity. In terms of the proportion of filled and unfilled pauses, the subjects, professional and trainee interpreters alike, show strong idiosyncrasies. It seems that the proportion of filled or unfilled pauses for each subject is more of an individual feature.

Table 4. Frequencies of filled and unfilled pauses in ST and TTs

	Filled pauses	Unfilled pauses	Pauses in total
ST	5	226	231
tt1	15	134	149
tt2	2	158	160
tt3	1	171	172
tt4	27	113	140
tt5	48	131	181
TT1	43	133	176
TT2	1	209	210
TT3	26	158	184
TT4	2	175	177
TT5	2	172	174

Note: ST: source text; tt1–tt5: target texts of expert interpreters; TT1–TT5: target texts of trainee interpreters

5.2 Duration of pauses in C-E SI

It is found that the mean duration of pauses in simultaneous interpreting is shorter than in the original spontaneous speech. As can be observed from Table 5, the mean duration of pauses in TTs across the two groups is 1.11s, which is longer than the ST (1.03s). This might substantiate earlier findings by Ahrens (2005) and Tissi (2000).

Moreover, a clear difference is found in the mean duration of pauses between trainee and expert interpreters. The mean duration of pauses in expert interpreters is 1.06s, much shorter than that of trainee interpreters (1.15s), which suggests that expert interpreters,

Table 5. Mean duration of pauses in each group as compared with ST

Mean duration of pauses	
ST	1.03s
tt	1.06s
TT	1.15s

Note: tt: the expert group; TT: the trainee group

with their developed professional competence, are better able to avoid long pauses that may affect communication.

That might be explained by the fact that expert interpreters are more proficient in segmentation skills and have better command of what might be termed as the principle of ‘syntactic linearity’ (Zhong, 2001), i.e., following the syntactic structure of the ST in SI. The benefit of following ‘syntactic linearity’ is that the interpreter can make the best of the syntactic structures of the original speech so as to save the effort of restructuring (Zhong, 2001). To do that, the interpreter needs to cut the sentence in the original speech into segments and ‘to start a sentence with a small segment of the ST’, which is called ‘the salami technique’ (Jones, 1998, p. 100). By doing so, the interpreter can avoid long pauses due to waiting. The present finding provides empirical support for the principle and technique that are useful in simultaneous interpreting training.

Another possible explanation for shorter pauses in expert interpreters might be that expert interpreters tend to have longer EVS (ear-voice-span), so that they have less constraint from the speaker and a larger context for information processing and concise expression, which enables them to avoid the occurrence of long pauses. As is shown in Table 6, the average waiting time for expert interpreters before they start a sentence is 1.15s, notably shorter than that of trainee interpreters (1.32s).

Table 6. Pauses before sentences in TTs

	Total frequency	Mean duration
tt	295	1.15s
TT	323	1.32s

Note: tt: the expert group; TT: the trainee group

5.3 Syntactic distribution of pauses in C-E simultaneous interpreting

Statistics on the syntactic distribution of pauses in C-E simultaneous interpreting are shown in Table 7, which indicate that the frequency of pauses at different syntactic positions occurs in the following order: before sentences, inside phrases, before clauses, between subject and predicate verb, between predicate verb and object and between parallel structures.

We can also see from Table 7 that about 50% of pauses in each group occur before sentences and before clauses, which confirms earlier findings on both spontaneous speech and SI that pauses are mainly located at major sentence junctures, in particular sentence boundaries and before clauses. For example, Grosjean and Collins (1979) and Cecot (2001) both found that the frequency of pauses is higher at the end of sentences than at any other location and that as the linguistic importance of breaks diminishes, so does the

Table 7. Distribution of pauses at different syntactic positions

	[1]	[2]	[3]	[4]	[5]	[6]
tt	36.9%	16.7%	9.8%	6.4%	7.5%	22.5%
TT	35.6%	13.9%	10.9%	8.1%	5.8%	25.7%

Note: [1] before sentences, [2] before clauses, [3] between subject and predicate verb, [4] between predicate verb and object, [5] between parallel structures, [6] inside phrases tt: the expert group; TT: the trainee group

frequency of pauses. Yang (2011) also found that in SI both into A and into B languages, most pauses occur before sentences and clauses.

Between 22.5–25.7% pauses in both groups occur inside phrases, which would be deemed unnatural in spontaneous speech. Findings on spontaneous speech revealed that there is a hierarchical distribution of pause frequency based on linguistic structure complexity (Grosjean & Collins, 1979) and that such a hierarchical distribution helps the listener to identify the relations between components of the discourse (Cecot, 2001). That is to say, pauses inside phrases in interpreting may affect listeners' understanding and influence communication effect negatively. That may help to explain why simultaneous interpreting is considered being 'less smooth than natural speech' (Barik, 1975).

Regarding the variable of expertise, the following observations can be made by comparing expert interpreters with trainee interpreters. Generally speaking, expert interpreters, in comparison with trainee interpreters, have a higher percentage of pauses at [1] before sentences and [2] before clauses, but lower percentage of pauses at [3] between subject and predicate verb, [4] between predicate verb and object and [6] inside phrases. As data shows, 53.6% of expert interpreters' pauses are found at major syntactic positions such as [1] before sentence and [2] before clauses, higher than the percentage value of trainee interpreters, which stands at 49.5%. While at other positions that are often considered as not so suitable for pauses, such as [3] between subject and predicate verb and [4] between predicate verb and object, expert interpreters have lower percentage of pauses: 16.2% of their pauses are at [3] and [4], in comparison with 19.0% in trainee interpreters. Such a difference is also found with pauses inside phrases: 22.5% for the professionals as opposed to 25.7% for the trainee interpreters.

To sum up, expert interpreters' pauses tend to occur at major syntactic junctures, which suggests that as expertise develops, pauses of interpreters become more appropriate.

5.4 Motivations for unnatural pauses in C-E SI

Based on observation of the corpus and retrospective interviews with the subjects, the motivations for unnatural pauses (research question two) are categorised in the following two aspects:

- (1) Pauses caused by difficulties with certain effort(s) of cognitive processing in SI, which include: [C] pauses due to difficulties in the effort of *conceptualising* in listening comprehension and logic analysis; [F] pauses due to difficulties in the effort of *formulating*, i.e., searching for certain expressions or optimising their usage; [M] pauses arising from the effort of *monitoring*, which is the process of detecting and correcting errors in conceptualisation, formulation and articulation.
- (2) Pauses related to SI-specific strategies, which include: [W] *Waiting*, i.e., pauses in waiting for the 'headword' after a long modifier or for a complete sense unit;

[R] *Restructuring*, i.e. pauses in restructuring of output segments in order to cope with the grammatical and syntactic differences between Chinese and English; [G] *Generalisation and simplification*, i.e., pauses before adopting the strategies of generalisation and simplification; [S] *Split attention*, i.e. pauses related to division of attention or multitasking in SI.

Statistics on different motivations for pauses in C-E SI are shown in Table 8.

Table 8. Percentage of pauses with different motivations in each group

	W	F	R	C	M	S	G
tt	32.7%	25.9%	14.9%	3.7%	8.9%	4.5%	9.4%
TT	31.3%	30.9%	13.3%	7.8%	4.8%	8.0%	3.9%

Note: [W] Waiting; [F] Formulating; [R] Restructuring; [C] Conceptualising; [M] Monitoring; [S] Split attention; [G] Generalisation and simplification tt: the expert group; TT: the trainee group

In order to discover the underlying mechanism of different motivations for pauses, analysis is also conducted in a qualitative manner and illustrated with examples. Along with the analysis, possible explanations of the motivations will be provided in the light of relevant theories.

The main reason for pauses in C-E simultaneous interpreting is [W] waiting. In SI interpreters often have to wait, as the working mode of simultaneous interpreting requires certain ST input before the corresponding TT production (Ahrens, 2005). Such input can be as short as a sense group or as long as half or one to two sentences. Therefore, waiting is often adopted as a strategy by the interpreter to get a complete unit of sense or larger context for information processing. For example:

Example 1

ST: 我今天非常高兴应邀参加中国深圳第三届 消费商品啊采购大会的	(0.5s)	高层圆桌会 议。	
[Gloss: I today am very pleased to be invited to attend the Third China-Shenzhen Consumer Goods Procurement Fair's]		[high-level roundtable meeting.]	
TT: I'm very happy to be invited to the Third China-Shenzhen Consumer Goods Procurement Fair	(0.5s) [W]	(1.2s) [W]	to this high-level round-table meeting.

Pauses in Example 1 are composed of two parts. The first part is shadowing the pause in the ST (which is observed from the sound waves of dual tracks) and the second part is a lag, which means waiting for the complete sense unit ‘高层圆桌会议’ before delivery.

The second major reason for unnatural pauses in C-E SI is [F] formulating or searching for expressions. According to Levelt's Speech Production Model (Levelt, 1989, p. 9), the formulating process is composed of grammatical encoding and phonological encoding. Grammatical encoding consists of procedures of lemma accessing and syntactic construction. In C-E interpreting, the speed of lemma accessing and syntactic construction is directly related to interpreters' English language proficiency. As Liu (2012) pointed out, processing speed and expression quality of lexical units in C-E interpreting is positively related to second language proficiency. The higher the proficiency, the faster and better the lexical access will be.

Example 2

ST: 第一, 我介绍一下, 用一组数据来说明	中国的市场容量大
[First I'll introduce with a set of data to illustrate]	[that China's market capacity is big.]
TT: First of all I want to	(0.8s) [F] illustrate some data to you.

Example 3

ST: 我衷心希望深圳的采购大会	能越办越好。
[I sincerely hope that Shenzhen's Procurement Fair]	[can be run better and better.]
TT: And I sincerely hope the	procurement fair will grow stronger and stronger.
	(1.5s) [F]

As interview data reveals, in Example 2 the student interpreter understood what ‘说明’ meant but encountered difficulty in accessing the mental lexicon. It took him 0.8s to come up with the English expression ‘illustrate’. In Example 3 the expert interpreter understood the meaning of ‘越办越好’ and had an easily accessible expression ‘better and better’ at his command, but he tried to search for a better expression. When he finally came up with ‘grow stronger and stronger’, which was not readily accessible, that resulted in a long pause.

As two major motivations for pauses in SI, [W] waiting and [F] formulating account for about 60% of the unnatural pauses. This result coincides with the finding of Ahrens (2005), who attributed longer pauses in the SI to two factors: the requirement of certain ST input before corresponding TT production and additional cognitive capacity needed for formulation effort in the target language. Mead (2000) and Xu (2010) also found that target language formulation, a non-automatic process in interpreting, is one of the major reasons for pauses.

The third major reason, which accounts for about 13–15% of all unnatural pauses, is [R] restructuring, a strategy adopted to cope with the grammatical and syntactic differences between the source language (Chinese) and the target language (English). As is discussed above, ‘following syntactic linearity’ is often adopted as a principle in SI in order to maintain synchronicity (Zhong, 2001). ‘Following syntactic linearity’ in simultaneous interpreting is made possible by grammatical and syntactic similarities between languages. However, Chinese and English are two languages with significant grammatical and syntactic differences, which, more often than not, pose problems and challenges for simultaneous interpreters between Chinese and English. A typical example is the difference in the positions of attributes between ‘left-branching’ and ‘right-branching’, which means Chinese often has long attributes placed before the noun while in English they are placed after the noun. In that case, the interpreter often has to either wait for the headword after the long attribute or try to restructure the output, both of which lead to long pauses. Here are two examples:

Example 4

ST: 同时呢, 我们的新闻媒体已经加大了对我们广大群众	进行保护知识产权的知识方面的	教育。
[Meanwhile, our media has already expanded to the public]	[knowledge about IPR protection]	[education.]
TT: ...their connections with us. And the media	(3.2s-ahh)[R]	is also helping improve people's awareness and help educate the public in IPR protection.

In Example 4, the Chinese source language has a very long attribute (‘对我们广大群众进行保护知识产权的知识方面的’) before the headword (‘教育’) and the interpreter had no other choice but to pause 3.2 seconds for the headword before producing a restructured sentence.

Example 5

ST: 这是没有国界的沟通和合作, 是	千万中国中小企业与国内和跨国	零售集团的牵手。 [retailing groups' joining hands.]
[This is borderless communication and cooperation, is]	[tens of thousands of China's SMEs and domestic and multinational]	
TT: Such cross-border communication and cooperation	(1.8s) [R]	made tens of thousands of SMEs join efforts with retailers from home and abroad.

In Example 5 the situation is similar, but the interpreter did not wait until he heard the headword. Instead he made a prediction for ‘牵手’ (join efforts) and restructured the sentence when he heard the segment in the middle ‘千万中国中小企业与国内和跨国’. However, there is still a 1.8s pause between the subject and the predicate verb, which may be deemed unnatural by the audience.

In addition to waiting, formulating and restructuring, motivations also include [C] *conceptualising*, [M] *monitoring*, [S] *split attention* for multitasking and [G] *generalisation and simplification*. These motivations can be explained with Levelt's Speech Production Model and Gile's Effort Model on SI.

In light of Levelt's Speech Production Model (Levelt, 1989, p. 9), difficulties in listening and analysis can lead to failure in the conceptualising process and thus halt of the following processes. In the case of simultaneous interpreting, the interpreter has to listen to the speaker and analyse the speaker's communicative intention and information for the purpose of conceptualisation.

The impact of failure in listening and analysis on the conceptualising process can also be explained with Gile's Effort Model on SI. According to Gile (1995, pp. 169–171), $SI = L + P + M + C$ (L: Listening; P: Production; M: Memory; C: Coordination). For the simultaneous interpreting task to go smoothly, the following requirements must be met: (1) $TR = LR + MR + PR + CR$ (LR: capacity requirement for L; MR: capacity requirement for M; PR: capacity requirement for P; CR: capacity requirement for C), (2) $TR < TA$ (TA: total available processing capacity) and (3) $LR < LA$ (LA: capacity available for L).

If the interpreter has difficulty in listening comprehension of the source speech, then $LR > LA$, which means listening and analysis requires more than the processing capacity available for listening. That will lead to pauses in simultaneous interpreting, as shown in Example 6.

Example 6

ST: 一个是, 今年我们的内外贸销售总...内外贸总额将超过一 万亿美元。		
[One thing is that this year our total domestic and foreign trade ... total domestic and foreign trade volume will exceed one trillion U.S. dollars.]		
TT: First (1.4s) [C] China's foreign trade		volume will exceed one trillion U.S. dollars.

Here in Example 6 the interpreter encountered difficulty in understanding the meaning of the phrase ‘*内外贸总额*’, a fact that was later revealed in the interview. As a result, she hesitated and paused for 1.4 seconds until she made a guess and uttered the expression of ‘foreign trade’, which renders only part of the meaning.

Unbalanced split attention in multitasking can also lead to unsmooth delivery. On one hand, if the interpreter focuses too much attention on listening and analysis, as mentioned earlier, that may lead to insufficient processing capacity for production so that the interpreter may even halt the on-going speech plan. On the other hand, if the interpreter consumes too much processing capacity in search of some ‘fancy’ expressions in production, he or she may not be able to listen. As a result, production may suffer. In a word, spending too many attentional resources on any single effort may lead to insufficient resources for other efforts and as a result, pauses in the production. For example:

Example 7

<p>ST: 全国保知办和外商投资企业 协会名牌委员会 [The National IPR Protection Office and the Quality Brand Protection Committee of the Foreign-invested Enterprises Association]</p>	<p>建立了定期的联系。同时呢， 我们的新闻媒体已经加大了 [have established regular connections. Meanwhile, our media have expanded]</p>	<p>对我们广大群众进行保 护知识产权的知识方面 的教育。 [to our general public IPR protection education.]</p>
	<p>TT: The Quality Brand Protection Committee and Association of Enterprises with Foreign Investment have also done something in this regard.</p>	<p>(2.1s) [S] They will also improve people’s awareness of IPR protection.</p>

In Example 7, obviously producing corresponding expressions for the long and complex proper name ‘*全国保知办和外商投资企业协会*’ consumed the majority of the interpreter’s processing capacity, which left little of her attentional resources to listening and analysis of the following segment. Consequently she missed the segment of ‘*新闻媒体*’, which is the subject of the next sentence. Without it, she was not able to organise the following sentence and got stuck for 2.1 seconds. Later she adopted a coping tactic and came up with a vague and neutral subject ‘they’.

Monitoring is one necessary component of speech production in SI. According to Levelt’s Speech Production Model, monitoring is the process of detecting and correcting errors in the conceptualising, formulating and articulating process immediately should they occur. It often co-occurs with dis-fluencies such as restarting, repetition or pauses (Levelt, 1989, p. 15). Monitoring may happen at the conceptualising, formulating or articulating process, which is shown in Example 8, 9 and 10.

Example 8

<p>ST: 比如说A已经有人结了对子了，下了订单了，那 么我们的 [For example, someone has made matches and placed the order, then our]</p>	<p>银行应该跟上去。 [banks should follow up.]</p>
<p>TT: If someone already gives the order,</p>	<p>then the banks should also (1.4s) [M] provide their support.</p>

As shown in Example 8, the interpreter realised that she had not fully understood the segment of ‘*银行应该跟上去*’ in the conceptualising process, which refers to ‘the

banking services' rather than 'the banks'. Although she did not start over to correct that mistake, she did pause as a result of monitoring and decision-making. That is a typical example of pauses due to monitoring in the conceptualising process.

Example 9

ST: 与世界和中国的零售商, 特别是来自世界	的跨国零售商、采购连接到一起。
[With global and Chinese retailers, in particular global]	[retailers and purchasers, we shall connect together.]
TT: Some other forms of commodity exchange are	connecting China's (1.2s-ahh) [M] re...retailers and the world's retailers.

In Example 9 the interpreter recalled in the interview that she understood what '零售商' meant in Chinese and that 're-saler' was the first word that popped up in her mind when she searched for the corresponding expression in English. Soon she realised it was not the right expression before she uttered it, so she paused and changed it to 'retailer'. That is a pause due to monitoring in the formulating process.

Example 10

ST: 我介绍一下, 用一组数据来说明	中国的市场容量大, 市场	成长性好, 环境不断的改善。
[I'll introduce, with a set of figures,]	[that China's market capacity is big; the market]	[is growing well; the environment keeps improving.]
	TT: I wish to elaborate with a set of figures	on the market here in China, which is (ahh-0.4s) [M] ... which has enjoyed huge potential and improving environment.

In Example 10, the interpreter paused when she realised that her utterance of 'is' was not the intended expression because she had wanted to say 'has', so she paused and then changed it. That is a pause due to monitoring in the articulating process.

Generalisation and simplification are common strategies used in SI, in which the interpreter is often faced with the time constraint due to the requirement of maintaining synchronicity with the original speech. In order to cope with the constraint, he or she must reproduce the interpretation in such an efficient way that the strategies of generalisation and simplification need to be used. By doing so, the interpreter can save valuable time and make the production more smooth and natural. It is observed in the corpus that the adoption of such strategies consumes efforts and can sometimes lead to pauses in SI, as is shown in Example 11.

Example 11

ST: 那么我们现在可以做的事就是	给大家创造一个公平的竞争的环境,	精诚合作、互惠互利、共同发展。
[Then the thing we now can do is]	[creating for all a fair competition environment]	[of sincere cooperation, mutual benefits and common development.]
	TT: What we can do is create a fair playing ground for all of you	where (0.7s) [G] integrity and cooperation are honoured.

As the subject explained in the retrospective interview, when she heard '精诚合作、互惠互利、共同发展' she considered the segment as a typical redundant way of expression in Chinese that is featured with parallel four-character phrases meaning the same thing. She thought it was unnecessary to interpret all the phrases since this would

make her interpretation redundant and lengthy, so she decided to generalise the message by keeping only the essence. That induced a pause of 0.7s.

A comparison between expert interpreters and trainee interpreters in terms of their motivations for pauses (research question three) (see Figure 1) reveals that they share the same major motivations but have differences in the following aspects:

Expert interpreters have fewer pauses that can be attributed to formulating, waiting, conceptualising and split attention. First, expert interpreters have remarkably fewer unnatural pauses due to [F] *formulating*, or in other words, searching for target-language expressions. It might be that their experience makes it easier for them to access set expressions as well as having a better command of English, which enables them higher processing speed and thus fewer pauses. Second, expert interpreters see appreciably fewer unnatural pauses due to [W] *waiting*. That means expert interpreters tend to wait a shorter time and need less input before they start to interpret. This might be explained by the fact that expert interpreters are more proficient in segmentation skills and have better competence in adopting the principle of ‘syntactic linearity’. Third, expert interpreters also have fewer pauses due to [C] *conceptualising* and [S] *split attention* in multitasking, which indicates that trainee interpreters are still at a stage when they often struggle with difficulties in basic SI operations such as listening comprehension and split attention (between listening and speaking at the same time).

It is noteworthy that expert interpreters have more pauses due to [M] *monitoring* of their production and [G] adoption of *generalisation and simplification* strategies. On one hand, it suggests that trainees have less resource for active monitoring of their production and adoption of generalisation and simplification strategies that require more in-depth information processing. On the other hand, it also suggests that expert interpreters are more aware of output quality and that they maintain it not only with their enhanced expertise but also through deliberate efforts of monitoring and adoption of strategies.

It is also interesting to note that there is no statistically significant difference between expert and trainee interpreters in pauses due to [R] *restructuring*, which implies that although expert interpreters are good at prediction skills, grammatical and syntactic

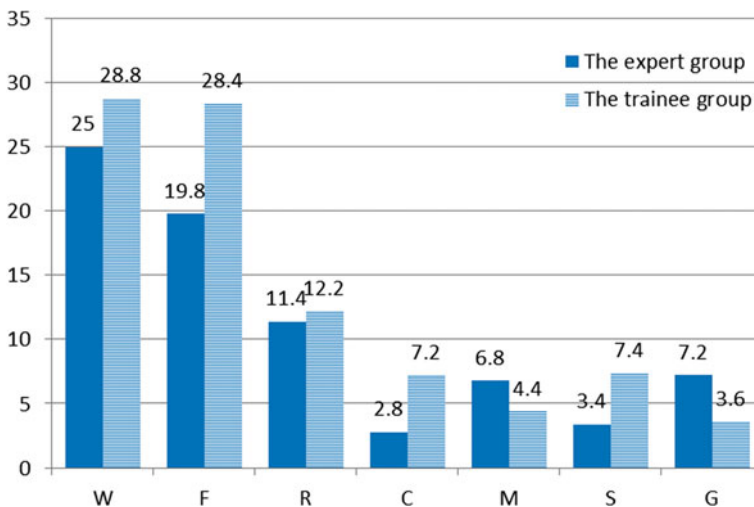


Figure 1. Frequency of pauses with different motivations as compared between the two groups

differences between Chinese and English remain to be a common challenge to both groups alike.

6. Conclusion

This study investigated the characteristics of and motivations for pauses in C-E simultaneous interpreting. Based on corpus-based quantitative analysis, it was found that pauses are less frequent but longer than in the original spontaneous speech. The pauses follow a hierarchical distribution according to syntactic complexity, except that the frequency of pauses inside phrases is markedly high.

Through analysis of the data collected from the retrospective interviews with the interpreters, it was found that in addition to the motivations for pauses shared by spontaneous speeches, such as formulating, there are other motivations specific to C-E simultaneous interpreting, which include 'waiting for input before output', 'restructuring of the target language due to language differences' and 'split attention', as well as the 'adoption of generalisation and simplification strategies'.

In examining pauses as being correlated to the variable of interpreting expertise levels, this study found that expert interpreters have both a lower frequency and shorter duration of pauses than trainee interpreters. Moreover, their pauses tend to be more appropriate, with an increased proportion of pauses at major syntactic junctions. Although expert and novice interpreters share major motivations for unnatural pauses, expert interpreters, with enhanced expertise, have fewer pauses that can be attributed to formulating, waiting, conceptualising and split attention but more pauses due to monitoring and adoption of strategies.

The findings on features of pauses in C-E SI may shed light on our understanding of the interpreted discourse or *interpretese* as a special type of discourse. As in linguistics, unnatural pauses are indicators for difficulties in speech production, similar findings in C-E simultaneous interpreting will help to reveal not only the difficulties encountered by interpreters but also their decision-making mechanism in the interpreting process. These findings will also have implications for interpreting practice and training.

Although the subjects of this study include five expert interpreters and five trainee interpreters, the size of the corpus itself is still limited due to the difficulty with data collection in interpreting studies. Therefore, findings in this paper may need to be further substantiated by more relevant researches in the future.

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Note

1. Although the present article is the result of joint efforts, Tao Li collected and analysed the data and wrote the initial draft and Binhua Wang can be identified as the corresponding author who conceptualised and designed the whole research and has revised the draft substantially and rewritten it thoroughly.

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