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An Analysis of the Triggers of Information Loss in Chinese-English Simultaneous Interpreting by Student Interpreters

Zhao Junzhe

School of Foreign Studies, Liaoning University of International Business and Economics, Dalian, Liaoning, 116052, China
a0908zjz@163.com

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Abstract: Information loss is an unavoidable phenomenon in simultaneous interpretation. How to minimize information loss in the process of interpreting has been a cutting-edge issue in the research field. This paper, under the guidance of Effort Model, will focus on the triggers and coping strategies of information loss in simultaneous interpreting through individual case study by an invited student interpreter. The triggers would be unveiled from different perspectives, and conclude from the mock interpreting by quantitative research, including accent, information density, and sentence complexity, whereby the coping strategies could be given to solve the targeted triggers such as reformulation, segmentation, anticipation, and simplification.

1. Introduction

1.1 Introduction to Theoretical Basis

The Effort Model is a tool used to explain why there are so many challenges in SI and to assist students majoring in interpreting in coming up with solutions. The relevant researches are conducted by Gile, especially after the computer-aided translation could do a favor for translators and interpreters. His series of papers explain a variety of mistakes, omissions, and other anomalies, as well as why certain speech components, such as names, numbers, and enumerations, tend to cause interpreting issues. These are known as "problem triggers" (Gile; 2020).[3]

Gile learned from psychologists as he began reading scientific literature that mental operations required "processing capacity" or "attentional resources" in addition to mental operations. If one of the operations was made more difficult while the other was being performed, it would result in poor performance of either one or both processes.

$$SIM=LA+M+P\leq A$$

LA: listening and analysis
M: short term memory effort
P: production, including self-monitoring
A: available processing capacity

SIM is an abbreviation of Simultaneous Interpreting that requires interpreters to listen to the source language first and then analyze the structure and the meaning behind it (LA) through short-term memory (M). Production would be given after hearing the speaker's voice while interpreters also need to monitor the translation by themselves (P). However, the capacity of interpreters to process the information should satisfy the efforts paying for the interpreting at least (A). It also means that the interpreters should enhance their interpreting capacity with high standards.

From the cognitive perspective, Gile added another element ---- coordination to the old model. Henceforth, the whole model was composed of 3 core efforts with an extra effort ---- Coordination. Then, the model was formulated as follows[4]:

$$SIM=L+M+P+C$$

$$R(SIM)=R(L)+R(M)+R(P)+R(C)\rightarrow TOTAL\ R$$

L: Listening
M: Memory
P: Production
C: Coordination
R: attentional resource requirements
+: not mean arithmetic, but some additive effects

This model added a new effort, coordination (C), in addition to the previous three efforts or parts. It could assist interpreters in adjusting and rearranging the output of the target language to ensure the language's high quality. The term "attentional resource requirements" (R) refers to how much focus the interpreters must maintain while interpreting. The interpreters should be present during the entire process because some addicting effects (+) would be taken into account. In overall condition, sufficient available attention resources at any time should be like this:

$$R(L)+R(M)+R(P)+R(C)\rightarrow TOTAL\ R\leq A$$

This format allows the interpreters to infer that the prerequisite for interpreting is A. The procedure should use up fewer attentional resources overall than A. It also represents the optimum state for an interpreter to be in.

PC management condition at any time should be like this:

$$R(L)\leq LA;\ R(M)\leq MA;\ R(P)\leq PA$$

In detail, the attentional resource requirement of individuals should be more than the consumed resources on listening, short-term memory, and production. Only by this, the quality of interpreting could get ensured.

There are some other Effort Models:

Consecutive interpreting (with notes):

Comprehension phase: L+M+NP (Note Production) +C

Reformulation phase: NR (Note Reading) +SR (Speech Reconstruction from Memory

Sight Translation: R (Reading Effort) +M+P+C

As science and technologies develop and evolve, human-machine interaction may participate in the process of interpreting, which means in the future the interpreting may require interpreters to devote substantial "energy" to interact with screens and to pay more attention to controlling relevant devices. However, it doesn't mean the Effort Model can prevail minutes by minutes in the future. If augmented reality becomes prevalent, EM may be changed into this:

$$SI:\ R+M+P+HMI+C$$

HMI, Human-Machine Interaction will be the new component, and R stands for Reception

If EM is put under a certain circumstance, especially in diplomatic interpreting, the model should be this:

SI: R+M+P+CCSC+C

CCSC: Communication Context Social Considerations

No one could exclude the possibility of EMs' disappearance because of the progress of in-depth learning and neural machine translation. Professor Gile also agrees with the possibility.

1.2 Introduction to Information Loss

Under the guidance of the Effort Model, there are four major factors: listening, production, memory, and coordination. In addition, according to Gile, the formula can't be viewed as an arithmetic sum of numerical values (Gile, 2011).[2] EOIs mentioned previously could be combined with the phenomenon of information loss. Information loss is very common in both consecutive and simultaneous interpreting, which is an inevitable condition that means some information may be missed during interpreting. Many researchers tried to find out the formulating mechanism of information loss in the past more than 50 years.

According to Gile, information loss could be classified into three types: error, omission, and infelicity, which are abbreviated as EOIs. Gile stated that error also could refer to meaning errors and some blurring of consonants and vowels (Gile, 2011).[2] Errors have two major types including lexical error and syntactic error.[1]

In Gile's opinion, "professionals tend to prefer ungrammatical and unfinished sentences" (Gile, 2011).[2] Infelicities mean that the words chosen in the target language cannot convey the accurate meaning and information to the audience with not appropriate words style. Daniel Gile defines it as clumsy language.

2. Triggers in Simultaneous Interpreting by Student Interpreter

2.1 Accent

For accents, a survey conducted by the International Association of Conference Interpreters (AIIC) in 2002 (quoted in Tian, 2014: 177) shows that 86% of interviewees said that unfamiliar accents would affect listening analysis and comprehension, and 62% of those thought that unfamiliar accents are a source of pressure. Information loss caused by accent in this mock interpreting happens mainly in the second section of the Q&A interaction. Some words of questioners who are with a strong southeastern accent cannot be received very clearly. As a result, parts of the original questions are omitted and reorganized to let the questions make sense, sticking to the meaning of the source language as closely as possible. In addition, the Russian that the speaker spoke in the lecture, is also with strong Beijing accent, awkward to identify the specific name of that person.

2.2 Information Density

Information Density is up to two major perspectives: one is the terminology, and the other one is the speech speed.

Profession and terminology, these two items always play important roles in interpreting. Profession and terminology represent the background knowledge. In light of the major of the student, English is different from history and economics. Many of the terminologies demand the author to comprehend the internal logical chain and details of the event. Especially in the mock interpreting, the major content is related to the transformation of rural China in the past 70 years. It is inescapable to meet

some terms in the area of history, politics, and economics. According to Professor Cui, departures of translation would be born in information loss because the terms are too easily translated wrongly, the number of terms at a high level and medium level respectively taking up 8.9% and 5.5%. In the task, the author has met terminologies with a high frequency. The following is part of the list of vocabulary including proper nouns and terminologies[Table 1].

Table 1: The List of Special Words in The Mock Interpreting

democratic revolution
class warfare
ancestral field
system of agricultural community on a small scale
ties of blood
geo-relation
income distribution

The names of famous scholars are also included. Thanks to the unfamiliarity with their names, especially Russian names, the author has to cope with the names according to the pronunciations. However, the author has to admit that it is probable to forget the pronunciation of a long name even though the names are tackled by transliterating. It also caused information loss. The author would put the list of names as follows[Table 2]:

Table 2: The List of Names

Trotsky
Chayanov
Preobrazhensky
Bukharin
Schultz
Stalin

2.3 Complexity and Understandability

Complexity and readability are generally defined as the subject in linguistics and psychology to analyze the difficulty and the target readers. In this paper, a library in computer programming would be used to analyze the understandability and complexity. The higher the score of understandability is, the more difficult the text is. The library called CNText is found on the website of GitHub whose link would be put in the footer. Overall, we could analyze the average readability of this text. The author put the transcription in the software, the result would be nearly 30.45[*Figure 1*].

> readability(text1)
['readabilityl:60.78991596638655,'readability ²:0.10570434953554106,'readability ³:30.4478 10157961047}

Figure 1: The Overall Score of Source Language

The three indexes of readability refer to the average number of each sentence, the proportion of adverbs and conjunctions, and the Fog Index for reference. As we can see from Figure 1, the difficulty of the whole speech is not quite high because the score of readability is only less than 31. Considering the style of this speech that means a lot of colloquial words are used in this speech, and the difficulty could not be as high as some academic papers. To testify whether readability would affect the performance of interpreters and how it affects the quality of translation in this task, two other examples can be put together to be compared, whose results may become important evidence to show

how readability influences the quality of the translation.

Example 1

TT: It is able to piece together, largely because you understanding of each part, relatively more than the average person cut off, I just talk with a few young people, I said we are the starting point of the experience process, then put the starting point of your construction interpretation logic on the starting point of experience, so your explanation is obviously more established conditions*Figure 2*.

>>> **readability(text1)**
['readabilityl:123.0,'readability2':0.07894736842105263,'readability3':61.53947368421053}

Figure 2: The Understandability of Example 1

The author put a paragraph with knowledge of international relationship in the CNText library to analyze and the score is 61.54, higher than the average score of this paragraph. The major difficulty should be that the average without any background in soc-sci research hardly comprehend the exact meaning of experience summary and other special or unfamiliar expression but still can guess correctly the answer.

Example 2

TT: Refers to China's industrialization, must be from agricultural extraction surplus original accumulation, so the national industrialization package down urban workers, enjoy better welfare treatment, of course, and to the city industrialization original accumulation of surplus farmers, of course is relatively low, so he said nine days above nine ground, it is difficult to accept, so beam was criticized, criticism beam, or said he nice*Figure 3*.

>>>**readability(text1)**
{'readabilityl:150.0,'readability ²:0.1724137931034483,'readability ³:75.08620689655173}

Figure 3: The Understandability of Example 2

More than 75 is higher than the score of Example 2, which means that the understandability of Example 2 is lower than it of Example 1. Due to the more difficult text or source language, the author had to cope with the sentences in Example 2 with more attentional resources. The phrases in this example required a bit of background knowledge of economics and history. Literally, the underlined parts might not be interpreted. However, the information was interpreted without any information loss, even though most of the information loss was tackled through some strategies, and the details would be described in the next part. Through the comparison between the two examples, the conclusion could come to us that the understandability of source language might result in more information loss.

3. Coping Strategies

3.1 Reformulation

Reformulation is a common strategy used in simultaneous interpreting whether it is Chinese to English or English to Chinese, which requires the interpreter to change the form of the original, but still be faithful to the meaning that the speaker wants to convey, just like Daniel Gile's words "used in reformulation to eliminate the potential consequences of production problems or short-memory problems".[5] The sequence of the original and the figure of speech of some words may converse when an interpreter uses this strategy. When the source language is complex, an interpreter could use this strategy to reformulate the sequence slightly to make the output smoother and save the valueless time to reduce the burden of attentional resources for memory storage and then to put more attentional resources on it for processing. Hence, it would be beneficial to reduce information loss.

3.2 Segmentation

Segmentation is one of the most important coping strategies in simultaneous interpreting, also a fundamental strategy to realize the best condition within an extremely short time[7]. Simply put, the former is regrouping, and this one is splitting. An interpreter can only translate by sequence while he or she is processing the information received according to syntactic linearity, the gold principle of SI. It means that in the process of simultaneous interpreting, the interpreter can cut off appropriately according to the source language order, just like "working with subunits of sense". It always happens in the long term because if an interpreter sometimes cannot cope with the source language only once, segmentation means cutting the original text into various subunits. Processing and interpreting one by one. Then the interpreter only needs to put all the translations together. How to implement the coping strategy of segmentation is a question worthy to think about. The interpreter is supposed to cut when meeting clauses, prepositional phrases, and participles. If the interpreter doesn't use segmentation to have a better structure or doesn't cut the source language, the quality of the interpreting task would be affected and information loss may be triggered.

3.3 Anticipation

Anticipation is of great importance for the work of simultaneous interpreting[7]. In short, it refers to making use of one's mastery of the speaker's style and understanding of the subject background of interpreting to reason and predicting the information that may be contained before the utterance appears. In other words, if an interpreter does not have a strong capacity for anticipation, there is no way to complete the simultaneous interpreting task. Anticipation is used so frequently that, according to research, translators are using it almost every 85 seconds. To maintain the effective operation of short-term memory, it is necessary to adopt timely anticipation, which can also effectively reduce the burden on the interpreter's brain when receiving information and avoid inaccurate information due to the interpreter's waiting. According to the Theory of Activity, mental activity, especially perception, is driven by a basic principle of anticipatory reflection of reality. In the meanwhile, the basic mechanism making SI possible is the probability anticipation of the development of the message.

3.4 Simplification

Simplification is a kind of coping strategy to help interpreters convey the general ideas of the speaker's words in case of the occurrence of information loss[7]. It refers to a principle adopted by an interpreter based on not affecting the main information transmission of the source language, under the condition that the material appearing in the source language cannot be processed by the target language or the more technical material appearing in the source language is directly interpreted into the target language and is difficult to be understood by the target language audience. It is different from omission which means the interpreters have to abandon intentionally the flyaway information to further reduce the information loss. Simplification requires an interpreter to catch the gist and convert it to the target language.

4. Conclusion

Through the data and retrospective analysis, it is very clear that the information loss of student interpreters in Chinese-English simultaneous interpreting is affected by a combination of factors, not only the lack of language proficiency and the relative lack of psychological stress resistance at the subjective level[8], but also by the content of the interpretation. This also reminds the student interpreters that they need to strengthen their encyclopedic knowledge while enhancing their language

ability[6]. Of course, it is worth noting that the analysis still has its natural shortcomings. For one thing, the sample taken is small and cannot be shown to be universal; for another, the overall design is still simulated interpreting, which is still quite different from the real interpreting situation and content. After all, the psychological and environmental pressures on student interpreters in interpreting training are far less than those in real interpreting. The design of the follow-up study should also be further improved in these two aspects.

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