

The Application of Short-Term Memory in Liaison Interpreting

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Abstract

As an important means of language communication, liaison interpreting plays a key role in various occasions. Research has found that interpreters can quickly and accurately convert language through short-term memory, promoting cross-cultural communication. This paper aims to explore the key role and application of short-term memory in the process of liaison interpreting, analyze its importance and impact mechanism, provide guidance for the training of interpreters, and improve the quality of interpreting.

Keywords

Short-term memory; liaison interpreting; Application.

1. Introduction

Under the background of globalization, the demand for cross-language communication is increasing day by day. Interpreting, as an important language intermediary, plays an indispensable role in promoting international exchanges and cooperation. Liaison interpretation, characterized by its informality, dialogue, and bidirectionality, is widely used in reception, accompaniment, tourism, and other fields. However, due to the complexity of the working environment, liaison interpretation requires interpreters to have a high short-term memory capacity to ensure the smooth progress of communication. This paper will start from the definition and characteristics of short-term memory, combined with the practical application of liaison interpretation, to explore the role of short-term memory in it and enhancement strategies.

2. Liaison Interpreting

2.1. Definition of liaison interpret

As interactions across diverse linguistic and cultural divides have become more common in various contexts, the need for liaison interpreting has grown. This trend has brought about a heightened awareness and appreciation of liaison interpreting in the twentieth century, prompting a deeper theoretical examination of the practice. According to Pöchhacker (2015), liaison interpreting did not have a distinct designation prior to the twentieth century. Elaine Hsieh (2003) examines the contributions of liaison interpreting to the theoretical development of translation studies and she emphasizes the diverse identities of the interpreter. Liaison interpreting is dynamic and complex, with its unique characteristics making it a significant area of research interest.

2.2. Characteristics of liaison interpreting

First, liaison interpreting is typically bi-directional. Liaison interpreting involves bidirectional communication, where interpreters frequently switch between two languages to ensure the mutual transmission of information. In liaison interpreting, every utterance is made with the expectation of a response. The generation of speech and the response to it together constitute a dialogue, driving the progression of communicative events. "The activity of talk is carried out

simultaneously with listening and listening may include overt verbal activities, i.e. talk (back-channeling)" (Wadensjö, 1998:87). The turns of talk are changing back and forth between the primary parties.

Second, liaison interpreting typically involves spontaneous dialogues with unpredictable content, requiring interpreters to handle information in real-time on-site. Interpreters need to possess rapid comprehension and response abilities to accurately convey the speaker's extemporaneous remarks. A characteristic feature of spoken discourse is that certain parts of the speech may be redundant, and compared to written speeches, they are quite fragmented. Sometimes, even the speakers themselves may be uncertain about what they will say next.

Third, another important feature of liaison interpreting involves the nature of contact and proximity between the primary participants. In liaison interpreting, the contact is direct, encompassing not only interaction among the primary parties but also between the interpreter and the primary parties. Because liaison interpreting does not rely on any auxiliary equipment, it is characterized by increased interaction, engaging all (or nearly all) senses. Each participant not only pays a great deal of attention to what the other participant says but also to the way he or she behaves, like eye contact and body language. Feedback in this context is immediate due to the frequent interchange of roles -speaker and addressee (Alexieva 1997:224).

Forth, multiple communicative content. Interpreters are required to translate in various situations, spanning business visits, tourist receptions, etiquette exchanges, and daily life, among others. Each situation has its own unique language and cultural context, demanding that interpreters not only be fluent in two or more languages but also possess extensive knowledge and a high degree of cultural sensitivity. The characteristics of liaison interpreting reflect the uniqueness and challenge of this profession.

3. Short-term Memory

3.1. Definition of short-term memory

Here are three types of memory: sensory memory, short-term memory and long-term memory. Short Term Memory (STM) refers to the amount of information that is retained in the seconds or minutes after an experience is remembered. Sensory memory and long-term memory contain information that we are not aware of, and information in both types of memory can only be acted upon, controlled, and processed if it is transferred to short-term memory. So short-term memory is also called working memory.

3.2. Characteristics of short-term memory

Compared to sensory memory and long-term memory, one characteristic of short-term memory is its short duration of information retention. Without rehearsal, information in short-term memory can only be maintained for approximately 15-20 seconds. However, through rehearsal or training, the duration of information retention in short-term memory can significantly exceed 20 seconds. Another feature of short-term memory is its limited capacity. Miller proposed that short-term memory capacity is variable and can be measured by a single variable, which he termed the "memory span" or "chunk." Miller suggested that the capacity of short-term memory is around 7 ± 2 chunks, a quantity that remains relatively constant. Despite its limited capacity, the breadth of memory can be expanded to some extent through chunking and encoding. Chunking refers to the process of grouping several smaller units into familiar, larger units of information, whether they are meaningless syllables, unrelated letters, words, or even sentences (Zhang Yucui 2009: 87).

3.3. Factors affecting short-term memory

There are many factors that influence the breadth of short-term memory. Factors such as the size, complexity, and familiarity of chunks can affect its capacity. As the complexity of chunks increases, the capacity of short-term memory tends to decrease gradually. High-frequency words have a larger short-term memory capacity compared to low-frequency words, and there is a significant negative correlation between complexity and memory retention. Short-term memory capacity is also influenced by the individual's knowledge and experience: "The more knowledge and experience a person has, the greater the number of chunks they can apply, and the greater the amount of corresponding information contained within each chunk." (Chase W G & Simon H A. 1973:80)

Short-term memory plays a crucial role in interpretation by directly impacting the quality and efficiency of information storage and processing. Interpreters must rapidly receive and retain source language information within a short time, which forms the basis for subsequent translation. Short-term memory excels at quickly filtering key details; not all sensory information can enter short-term memory—only a portion that is noticed or consciously recognized undergoes semantic processing (Zhang Yucui 2009: 88). When speech is uttered, the brain swiftly activates long-term memory to retrieve relevant stored knowledge, initiating instant and short-term memory to analyze and process real-time information, fully grasping the meaning conveyed by speech (Xuhan 2007: 123). In other words, short-term memory activates relevant language and specialized knowledge from long-term memory, assisting interpreters in better understanding and translating. Through working memory, information from short-term and long-term memory integrates to achieve a profound understanding of the source language content, facilitating effective translation.

4. Application of short-memory in liaison interpreting

Short-term memory plays a crucial role in liaison interpreting. Liaison interpreting involves converting the source language of both speakers into the target language through face-to-face interaction, facilitating bilateral communication. This activity places high demands on interpreters' memory capabilities, particularly their short-term memory. Here are specific applications of short-term memory in liaison interpreting:

4.1. Reception and processing of information

Interpreters need to swiftly receive and store the original language information while the speaker is talking. This process demands a high level of concentration and quick responsiveness to ensure the integrity and accuracy of the information. After receiving the information, interpreters must rapidly process it, focusing on identifying key elements such as vocabulary, numbers, proper nouns, and other critical details using short-term memory. These key pieces of information form the foundation for understanding and translation. To efficiently remember and recall this information, interpreters combine the selected key details with their long-term knowledge and experience, forming meaningful information chunks.

For instance, during a medical seminar, if experts discuss a complex treatment plan involving multiple steps and corresponding medication names, interpreters use short-term memory to quickly filter and note down these treatment steps and drug names. They then integrate this information with their extensive medical knowledge stored in long-term memory to create clear information chunks, enabling them to accurately and fluently complete the translation task.

4.2. Activation of working memory

The activation of working memory is a crucial step in ensuring accurate understanding and fluent interpreting. When interpreters receive information in the source language, their short-

term memory quickly activates stored language knowledge such as vocabulary combinations and phrase expressions from long-term memory. For specialized interpreting tasks, short-term memory also triggers the interpreter's long-term memory of domain-specific knowledge, ensuring they have a precise understanding of professional terms and industry backgrounds. This is key to achieving high-quality professional interpretation. Through working memory, newly received information in short-term memory effectively integrates with existing knowledge in long-term memory, constructing a comprehensive information framework. This integration is not only based on linguistic aspects but also considers context, situation, and cultural background.

For example, in an international seminar involving cross-cultural communication, an interpreter hears a proverb containing complex cultural implications. By combining knowledge from short-term and long-term memory, the interpreter not only understands the literal meaning of the proverb but also grasps its cultural significance, allowing them to convey it appropriately to the audience and avoid potential cultural conflicts.

4.3. Reduction of cognitive load

In the process of interpreting, reducing cognitive load is crucial to ensuring interpreters can translate efficiently and accurately. Short-term memory plays a pivotal role in achieving this goal. It enables interpreters to selectively focus on the information that is crucial for understanding and translation, while disregarding less important or redundant details. This selective attention helps conserve cognitive resources, allowing the brain to concentrate more effectively on the key content.

For example, imagine during a speech on environmental protection, an interpreter hears a series of climate change-related data points. Through the filtering mechanism of short-term memory, the interpreter chooses to focus on key statistical data and main points while filtering out background introductions and minor details. This process effectively reduces cognitive load, enabling the interpreter to handle the essential content more efficiently. Reducing cognitive load through effective use of short-term memory not only enhances the interpreter's ability to process and translate information accurately but also contributes to smoother communication and interpretation overall.

4.4. Improvement on interpretation accuracy

Good short-term memory abilities are crucial for interpreters to accurately capture and recall information in high-pressure environments, reducing the risk of omissions and errors due to memory issues. Rapid memorization of vocabulary and phrases is particularly important. It allows interpreters to quickly retrieve the most appropriate words and expressions from memory during translation.

For instance, during a technology product launch event, a product manager introduces the features of a new smartphone. With strong short-term memory skills, the simultaneous interpreter accurately remembers and translates technical terms such as "OLED display" and "wireless charging," ensuring precise communication of technical details.

In summary, a proficient short-term memory enables interpreters to efficiently handle real-time translation tasks, ensuring that important details are conveyed accurately, especially in specialized domains like technology.

5. Training methods for short-term memory

Based on the analysis above, it is evident that short-term memory is crucial in liaison interpreting. Short-term memory provides interpreters with linguistic knowledge, while non-verbal knowledge is stored in long-term memory. Therefore, for interpreters to successfully complete an interpreting session, strong short-term memory is essential. The mechanism of

interpreting memory indicates that interpreters must maximize their memory capacity within limited timeframes. This requires employing methods tailored to the characteristics of short-term memory to minimize memory load and accurately and effectively store information.

5.1. Logic training

Logical analysis in interpreting refers to "analyzing speeches vertically and horizontally. Vertical analysis involves distinguishing between key information and supporting information, identifying the logical hierarchy; horizontal analysis clarifies the logical relationships among different pieces of information" (Lei Tianfang & Chen Jing. 2007: 18). Logical organization exercises require students to analyze information logically while listening. They summarize the central idea of the original text first, then explain the sub-points and overall logic of the article, thereby comprehensively understanding the original content. "Interpreters, on the premise of understanding, can better grasp the logical relationships of information, organize information systematically, and combine information into larger units to increase the capacity of short-term memory" (Zhang Yucui 2009: 88). During the translation phase, activating relevant information based on logic enables faithful translation.

5.2. Shadowing

Shadowing, also known as source language or monolingual repetition practice, refers to the exercise where the practitioner, based on understanding through listening, slightly delays and repeats content by one word to one sentence after the speaker. During initial training, materials in one's native language are recommended to gradually adapt to the speed of speech. After a period of training, materials in English can be used as the source language. It is advisable in the early stages to select materials that are not overly specialized and have accents that are easier to discern. After shadowing exercises, monolingual repetition is conducted to reinforce and assess the effectiveness of short-term memory. "Shadowing training strengthens the ability to quickly filter information before entering sensory memory, and to convert immediate memory into sensory memory before converting it into short-term memory" (Liu Shunli & Gong Jian 2010: 75). This practice cultivates the habit for interpreters to produce speech while listening, thereby enhancing the coordination between short-term and long-term memory.

5.3. Number interpreting training

Memory and translation of numbers have always been a challenge in the process of interpreting. Due to the singular meaning of numbers, interpreters generally spend less time decoding them compared to other types of information. However, precisely because of their singular meaning, remembering numbers poses a much greater difficulty. Therefore, interpreters need to dedicate effort to improving their ability to remember numbers. Furthermore, due to differences in counting systems and numeral scales between Chinese and foreign languages (such as English using thousand, million, billion), the disparity in numeral systems not only increases the difficulty of short-term memory but also adds to the challenge of translation. Currently, there are no known audio materials specifically designed for practicing numerical interpreting available on the market. Trainees may choose to record their own materials or practice in pairs with another trainee to improve their skills. During the initial stages of training, the learner repeats in the source language. As proficiency develops through training, they are then required to translate numbers into the target language until long-term memory is solidified. Eventually, upon hearing numbers, they should reflexively and without thinking, respond with the corresponding words in the target language.

5.4. Noting

"Complex, synthetic and lengthy compound sentence structures can sometimes exceed the short-term syntactic load of the human brain, making it difficult for the language center to

integrate and process lexical information effectively" (Gui Shichun 1985: 96). The purpose of note-taking training is to help interpreters reduce memory load. Note-taking in interpreting differs from shorthand and classroom notes; it has its own distinct characteristics. Typical interpreting notes include symbols, codes, abbreviations, etc., characterized by ample spacing, wide margins, visual clarity, temporary nature, conciseness, strong prompting, and personalization (Liu Heping 1999: 32). Allocating appropriate attention to note-taking helps alleviate short-term memory burden and enhances memory retention. During note-taking training, interpreters should first establish a harmonious note-taking rhythm, then engage in focused practice with representative materials to enhance concentration, develop skills in quickly identifying key words, and handle various basic sentence structures found in the materials, thereby forming a personalized style and system of note-taking.

While training short-term memory, long-term memory should not be neglected. It is essential to absorb knowledge from various fields, broaden perspectives, and enrich experiences in daily life. This enriches the content of long-term memory and optimizes the state of information storage, enabling timely and rapid provision of necessary information to short-term memory.

6. Conclusion

This paper emphasizes the importance of short-term memory in liaison interpreting and highlights its significant impact on translation quality and efficiency. By analyzing its applications in information processing, activation of working memory, reduction of cognitive load, and enhancement of translation accuracy, the paper reveals its crucial role in the interpreting process. Additionally, the paper proposes four strategies to enhance short-term memory: logical training, shadowing exercises, numerical interpreting practice, and note-taking assistance. These strategies assist interpreters in effectively addressing the challenges of liaison interpreting, ensuring the precision and fluency of information delivery.

The purpose of this paper is to emphasize the importance of short-term memory in liaison interpreting, encouraging trainers to prioritize its development through systematic training. This aims to enhance the quality of liaison interpreting and facilitate effective bilingual communication.

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