COGNITIVE AND LINGUISTIC THEORIES IN SIMULTANEOUS INTERPRETATION

Urokova Diyora Davron qizi
Master’s student at UzSWLU

Annotation: *Simultaneous interpretation is a complex task requiring real-time language processing. This article examines cognitive and linguistic theories that explain how interpreters manage its challenges. Cognitive Load Theory and Working Memory models show how interpreters balance attention, memory, and multitasking. Gile’s Effort Model outlines the mental demands, while Connectionist Models explain rapid language processing. By exploring these theories, the article offers insights into the strategies interpreters use to synchronize thought and language, enabling communication across diverse settings.*

Key words: *simultaneous interpretation, cognitive load theory (clt), working memory, effort model, connectionist models, parsing theories, multitasking.*

Simultaneous interpreting, one of the most challenging linguistic tasks that involves listening, analyzing and translating speech in real time. In order to perform accurate translations efficiently, interpreters need to manage various cognitive functions. The study will examine the techniques that translators use to succeed in this complex field, with a focus on linguistic and cognitive theories that explain how they tackle complex mental tasks. To understand these strategies, it's essential to grasp ***Cognitive Load Theory (CLT)***, which outlines the restrictions on mental capacity during cognitively demanding work.

According to CLT, people can only use a certain amount of mental resources at a time, which is especially important when multitasking. Translators have to monitor three different types of cognitive load during simultaneous interpretation - internal, external and factual. The term "internal stress" describes the inherent complexity of a task, e.g. the translation of complex language or foreign words. Extraneous stress involves distractions or the environment that do not directly affect the translation process, but can distract the translator's attention. On the other hand, the required load includes the mental effort required to process and reproduce the text in the target language.

According to studies, translators have mastered special techniques that make it possible to cope with high internal and external loads. For example, selective attention allows people to focus on the most crucial components of speech, while filtering out extraneous information. In addition, translators often utilize "chunking" as a strategy to combine words and sentences into meaningful units, which facilitates the analysis and translation of large amounts of data in real time. These methods allow

translators to properly cope with psychological stress associated with work, despite the cognitive limitations of CLT. In addition, working memory plays a significant role in simultaneous interpretation because the interpreter must retain speaker information when creating simultaneous interpretation.

The phonological and central guidance circuits are the two main parts of working memory that translators rely on, according to the ***Working Memory Model*** of Baddeley [1]. The central executive regulates multitasking processing and attention, and interpreters may temporarily store spoken language in audio circuits. In order to translate with fluency and coherence, interpreters must utilize this dual processing in order to "preserve" knowledge in one language and recognize comparable strategies in another. However, experienced interpreters use memory-boosting techniques, such breaking up difficult information into smaller elements and applying predictive processing to anticipate the next speech block. This reduces the psychological burden and guarantees that interpretations stay precise and consistent.

The ***"Effort model"*** proposed by Daniel Gile is another remarkable theory that explains how translators allocate their mental resources during translation. Functional efforts can be divided into three categories: memory efforts, production efforts, and listening and analysis efforts [2]. While production effort involves generating words in the target language, auditory analytical effort is the process of comprehending and interpreting someone else's language. Memory effort is the retention of information over a short period of time until it is translated.

Gile claims that mistakes happen when these efforts are beyond the interpreter's cognitive capacity, such as when listening analysis tasks demand an excessive amount of mental effort. It could be difficult for the interpreter to make up proper sentences in the target language. Therefore, successful interpretation relies on efficiently controlling cognitive load and effort. Professional interpreters frequently receive training to enhance their multitasking efficiency, decrease errors, and increase the number of attempts they make.

There are language processing theories such as the Connectionist and Parsing theories. They offer further insight into the rapid language processing required for simultaneous interpretation. *Connectionist models* propose that language processing involves a network of interconnected neurons used by interpreters to quickly extract meaning and linguistic structure. These neural networks help interpreters process language quickly and efficiently. This makes it possible to translate in real time. *Parsing theory* suggests that interpreters break sentences into grammatical elements to understand and reconstruct them in the target language [3].

Understanding how interpreters handle the challenges of simultaneous interpretation is key to appreciating their *expertise*. Research by Ericsson, Krampe, and

Tesch-Römer sheds light on how interpreters develop their specialized skills through focused practice. This type of practice isn’t just about repetition; it involves engaging in specific training that enhances their memory, speed, and accuracy [4].

Interpreters can handle complex interpretations with less mental strain as they put in the time and effort since they begin to conduct tasks more automatically. Through applying proven cognitive methods and techniques, interpreters gain speed and efficiency with practice. This depth of expertise helps them tackle the tough aspects of their job, ensuring they maintain high accuracy and fluency, even when under pressure.

In conclusion, simultaneous interpreting is one of the most difficult cognitive tasks in linguistics. Translators need to balance attention, memory and multitasking skills while ensuring real-time translation. By studying concepts such as Cognitive Load Theory (CLT), Working Memory Models, The Effort Model and language theories, we can better assess the mental strategies that translators rely on to meet these requirements. Expertise theory also sheds light on how interpreters hone their specialized skills over time, allowing them to thrive in this demanding field. Together, these theories give us valuable insights into the complex cognitive and linguistic processes that make simultaneous interpretation not only possible but also effective.

References:

1. Baddeley, A. D. (2000). The episodic buffer: A new component of working memory? Trends in Cognitive Sciences, 4(11), 417-423.

2. Gile, D. (2009). Basic concepts and models for interpreter and translator training. John Benjamins Publishing Company.

3. Dell, G. S., Chang, F., & Griffin, Z. M. (1999). Connectionist models of language production: Lexical access and grammatical encoding. Cognitive Science, 23(4), 517–542.

4. Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. Psychological Review, 100(3), 363–406.