COGNITIVE APPROACH TO SIMULTANEOUS INTERPRETING

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Annotation: *Simultaneous interpreting is one of the “complex language processing tasks” that requires an interpreter to multitask between listening and making sense of the source language discourse, memorizing, and producing viable text in the target language simultaneously. These tasks of the interpreting process are assumed to inherently place demands on the cognitive resources of the interpreters. The article presents cognitive approach to simultaneous interpretation, its perspectives and process model types which have been analyzed by the researchers.*

Key words*: Simultaneous interpreting, working memory, utterances, source language, target language, cognitive-pragmatic analysis, translation models, decoding, encoding, operational memory.*

Simultaneous interpreting, as its name suggests, is the act of interpreting or conducting oral translation from the source language to the target language simultaneously. Interpreting is generally defined in contrast to translation, highlighting the differences in the mode of delivery. Translation is done in writing, while interpreting is performed orally.

Rothacker defined interpreting as an act of translation and thus framed it as: “an activity consisting mainly in the production of utterances (Texts) which are presumed to have a similar meaning and/or effect as previously existing utterances” (p. 12). There are essential keywords in his definition with similar meanings and/or effects. This means that interpreting is an effort from the interpreter to provide a rendering in the target language as accurately as possible semantically and pragmatically. It does not lend itself to the accuracy of words within sentences.

Simultaneous Interpreting (SI) is considered one of the most complex cognitive tasks in language. Interpreters must listen and grasp input utterances in one language, retain those utterances in working memory to the point that they have been recorded and are ready to be produced in another language, and then simultaneously translate a portion of an earlier input. As a result, language comprehension and production co-occur in two different languages. Christoffel and De Groot best explain SI from a cognitive perspective, describing three distinct characteristics: the simultaneousness of comprehension and production, lags between the source and target texts, and the interpretation unit. The simultaneity of comprehension and production requires an interpreter to understand the input from the source language while producing output in the target language. A split conceptual attention model was proposed by Mawhinney, in which one interpreter is focused on understanding the input, and the other is focused on conceptualizing and producing an earlier part of the message. Lags between source language (SL) and target language (TL) or “Ear-Voice-Span” (EVS) indicate a few seconds difference between SL input and TL output.

Setton and Dawrant described how the critical difference between simultaneous and consecutive interpreting is in the transfer time between SL and TL. In the con-

secutive mode, the interpreter starts interpreting 2-3 minutes after the source speaker utters his/her speech segment, while in simultaneous mode, interpretation commences only 2-3 seconds after the source, and lags to a variable degree among interpreters to interpret or produce the TL with a note that an SI interpreter cannot ‘wait’ until the SL sentence is completed to start interpreting, otherwise, she cannot keep up with the incoming utterances.

Christoffel and De Groot explained that two contrasting factors are essential in the EVS-ear voice span. On one hand, it is beneficial to wait as long as possible prior to beginning the interpretation process. The longer the process of language production is postponed, the more information about the input's intended message and meaning becomes available and the less likelihood of misinterpretation since any possible vagueness due to double meanings may be clarified. Conversely, keeping the lag as short as possible is beneficial, as a short lag places a lower burden on memory than a longer one. With a long lag, the interpreter risks losing items previously retained in the working memory, causing the interpreter to fail to retrieve the flow or sequence of the SL speech. The longer the lag left by the interpreter, the greater the chance of omitting source content. For an ideal ear voice span, a lag of four or five words behind the input speech is required for complete comprehension without exceeding working memory capacity (Christoffel & De Groot).

In view of the last unique characteristic, the interpreting unit must be greater than a word since the span represents four to five words. Word-for-word interpretation is not recommended since the output will usually be unintelligible. Instead, interpreting usually involves rephrasing at a higher level. Research conducted on chunks in Simultaneous Interpreting) suggests that clauses are the preferred unit of interpretation. Thus, interpreters must be able to ‘put together a unit of meaning as they arrive, forming a mental representation of the SL speaker’s intended meaning in our minds, and projecting possible paths for the utterance and the speech. It is known as 'anticipation,' a natural part of all speech comprehension, and plays an important role in SI’. The inability to keep up when lags are longer or when the interpreter waits until the sentence is completed is due to the nature of its simultaneity of tasks between listening, thinking, remembering, formulating, monitoring, and producing the TL that an interpreter has to manage to provide a ‘successful’ rendition. Successful rendition is, in this case, in terms of how an interpreter can interpret the ‘units of sense’ when trying to make sense of possible incomplete SL grammatically in a comprehensible and ‘faithful’ TL output. “It takes some syntactic and cohesive dexterity while also attending to the structure of the discourse, and monitoring and controlling what we are saying for overall sense and pragmatic equivalence.” (Setton & Dawrant, 2016, p. 285).

This, interpreting with simultaneous mode per se is also an act of transferring messages from the source language (English) to the target language (Indonesian) simultaneously, where an online translation is critical due to time lags. A message is the point of interest arising from the notion that interpreting does not involve translating verbatim. Also, it does not mean transfer in a strict sense since an interpreter should consider the context of the message when transferring or formulating it. In sit-

uations where context is crucial, the target language rendition is no longer bound by the syntactical and semantic constraints of the source language. The message is delivered to ensure the utmost level of comprehensibility in a pragmatic manner. According to Pym, studies showing how interpreters use resources when they omit items indicate that cognitive management may be actively influenced by contextual factors such as the discourse's aims, the speakers' strategies, and the various risks associated with the text items. This occurred despite a clear-cut opposition between contextualists, who view interpreters' performance as habituated by contextual factors, versus cognitivists, who examine interpretations of cognitive limitations universal for all professionals regardless of context. Thus, this affects how errors and omissions are viewed in this study. For this purpose, errors are defined as message errors and omissions, rendering the analysis at a pragmatic level, although the errors and omissions themselves are considered as behavior indicators of cognitive load. Rothacker emphasizes that parameters such as omissions and other errors reflect the SI process indicating cognitive processing problems. Further discussion on errors and omissions is contained in the section on measuring cognitive load.

There have been paradigm shifts in the interpreting field since its official ‘launch’ as a field of study. Rothacker summarizes well the development of paradigms in interpreting studies, 17 starting from Interpretive Theory (IT), which is often positioned against Cognitive Processing (CP), to Discourse Interaction (DI) and Target Text (TT) paradigms. Setton, on the other hand, tried to bridge between IT and CP paradigms by introducing cognitive-pragmatic analysis. Furthermore, Christoffel and de Groot discussed the aspects of SI processing, which include language control; language recoding (theory on recoding and deverbalization); self monitoring; and memory processes. To understand how simultaneous interpreting plays a role in the processes of working memory, two process models, namely Gerver’s and Moser’s, are discussed, both of which focus on working memory (though differently named) as the basis for SI processing models.

Gerver's model of simultaneous interpreting illustrates two central facets of the SI process 1) permanent structural features (long-term memory system, short-term buffer store, output buffer), and 2) control processes to be selected at the interpreter’s disposal, including removing input, pre analyzing the output, monitoring output, and retracing to enhance earlier output, and that potentially co- regulate the attention dispersal to the various components of the task. Furthermore, Gerver posits the existence of a buffer, or temporary storage, in which knowledge can be obtained while the interpreter is translating the previous segment of the message. The buffer storage is deemed necessary in order to retain the intermediate steps in the analysis. Based on the segmentation strategy employed by the interpreter, the input message is stored in buffer storage and depends on "input routines.". A process of “active reinstatement” allows the interpreter to use linguistic knowledge stored in his/her long-term memory to create an interim “operational memory” or “working memory” to handle the processing procedures in the “decoding” and “encoding” of source and target languages. Additionally, Gerver posits that the maintenance of working memory is necessary for overseeing and repairing measures, which are vital parts of the process and are highly

susceptible to provisional processing capacity limits. Interestingly, he proposed two separate buffers for source and target languages, which is unique only to his model, since contemporary models of working memory only assume separate stores for each different modality. In summary, Gerver's model is proposed as an approximation to a model of simultaneous interpretation processes, and various aspects can be clarified or discarded in favor of more likely hypotheses.

Another model is Moser’s 1978 process model of SI, a more explicit and comprehensive description of how information is processed up to the level of meaningful phrases and sentences. In her model, she illustrates structural and functional components, where the former describes the type of information held at a particular point in the processing stage, while the latter describes the specific tasks carried out at a certain step of the processing stage. Moser used the term Generated Abstract Memory (GAM) which she considered short-term memory. In Moser’s model, working memory has structural and functional components, in which GAM serves as storage, but also performs recoding tasks or production. Moser's model incorporates the "conceptual base" and the structure of meaning prior to the language being supported by various knowledge forms, including conceptual networks, contextual, and general knowledge. Activation of the TL elements residing at the node of the conceptual network is performed on the way to output articulation through syntactic and semantic processing.

As Gerver and Moser acknowledge, interpreting involves complex and multi-faceted information processing. While both models view working memory as the core of the interpreting process, the difference lies in the number and type of tasks that working memory performs during the interpretation process. Gerver's model advocates that the process of interpreting is dependent upon long-term memory, working memory, and other unspecified translation apparatuses (Tamaroa, 2008, p.18). By contrast, Moser's model comprises working memory (GAM) and long-term memory and puts working memory as the main interpreting apparatus.

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