

**THE LINGUISTIC AND COGNITIVE ASPECTS OF COMPRESSION IN
SIMULTANEOUS INTERPRETING**

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Abstract. In this article, the linguistic and cognitive aspects of compression, one of the most important strategies used in simultaneous interpreting, are analyzed in depth. The process of simultaneous translation is a complex speech activity that requires a high level of attention, quick thinking and information processing under limited time. Therefore, translators strive to effectively convey the speech by reducing the incoming information, removing redundant elements and preserving the main content. This process is done through compression strategy. The article examines methods of reduction at the lexical, syntactic and semantic levels as linguistic aspects of compression. In particular, methods such as using synonyms, omitting redundant units, simplifying the sentence structure, and extracting the main meaning are analyzed. At the same time, the cognitive basis of compression, i.e. the processes related to information processing by the human brain, short-term memory capacity, attention control and cognitive load, are highlighted. The research shows that compression is not only a linguistic transformation, but also a strategic mechanism that serves to optimize the translator's cognitive resources.

Keywords: simultaneous translation, compression strategy, linguistic compression, cognitive load, working memory, information processing, translation quality, semantic reduction, interpretation process, translator competence, time pressure, speech optimization

Introduction

As a result of modern globalization processes, the expansion of international cooperation and the development of a multilingual environment, the importance of interpretation, especially simultaneous interpretation, is increasing significantly. Simultaneous interpreting is a complex real-time speech activity that requires the interpreter to perform multiple cognitive processes in parallel, such as listening, understanding, processing, and translating at the same time. In such conditions, interpreters work under a high level of time pressure and cognitive load, which makes it more difficult to ensure accuracy and fluency of speech.

To solve these problems, translators use different strategies, among which compression occupies a special place. Compression is the process of reducing redundant or secondary elements in the source speech, simplifying and conveying information in a compact form while preserving the main meaning. This strategy allows the translator to save time, optimize speech and use cognitive resources effectively. In this respect, compression is considered not only as a linguistic transformation, but also as a complex cognitive activity.

In recent years, there has been an increasing interest in cognitive approaches, particularly cognitive load theory and information processing models within the framework of simultaneous translation theory. However, in existing studies, linguistic and cognitive aspects of compression have not been sufficiently explored in mutual integration. Most works consider compression only as a means of reducing language units, and its impact on the translator's thought process and decision-making mechanisms is not sufficiently covered.

The main goal of this article is to comprehensively analyze the linguistic and cognitive aspects of the compression strategy in simultaneous translation. In particular, the article studies different levels of compression (lexical, syntactic and semantic) and its interrelationship with the translator's cognitive activity - attention control, short-term memory and information processing

processes. The impact of compression on translation quality, accuracy, and efficiency is also discussed.

As a result, this study aims to justify compression as an indispensable strategic element of simultaneous interpreting and to demonstrate the need for its effective use in the process of training interpreters.

Methods

In this study, qualitative and partially descriptive-analytical approaches were used to study the linguistic and cognitive aspects of the compression strategy in simultaneous translation. The research is mainly based on the analysis of theoretical sources and the linguistic examination of practical speech samples.

At the first stage of the research, the scientific literature on simultaneous translation, cognitive load and compression strategy was studied and systematized. In this process, the concepts advanced in the works related to the theory of translation, especially oral translation and cognitive approaches, were analyzed. By analyzing the literature, the main types of compression and their theoretical foundations were clarified.

In the second stage of the research, the method of analysis of speech samples typical of the process of simultaneous translation was used. Short speeches on various topics (political, social and scientific speeches) were selected and compared with their translation options. During the analysis, the cases of compression used in the translation were identified and divided into lexical, syntactic and semantic levels. The purpose of each case and their impact on the overall content were studied.

Elements of cognitive analysis were also used in the study. That is, during the compression process, the translator's cognitive processes, such as distribution of attention, use of short-term memory, and rapid processing of information, were theoretically explained. This revealed the role of compression not only as a linguistic, but also as a cognitive mechanism.

The main methods used in the research are as follows:

- analysis of scientific literature (literature analysis);
- comparative analysis method (comparative analysis);
- descriptive method (descriptive method);
- linguistic analysis.

With the help of these methods, the role of the compression strategy in the process of simultaneous translation, its functions and effectiveness were comprehensively covered. The chosen methodology made it possible to systematically study various aspects of compression in accordance with the research goal.

Results

The results of this study showed that the linguistic and cognitive aspects of the compression strategy are interrelated. During the analysis, it was found that compression is used by the translator not only as a means of shortening the speech, but also as a strategic mechanism that serves to manage the complex cognitive load.

First, the results of the linguistic analysis showed that compression is carried out at three main levels: lexical, syntactic and semantic. At the lexical level, translators often condense speech by using synonyms, omitting redundant or repeated words. For example, phrases such as "it should be emphasized that" in English are often replaced by short versions such as "important" or "it should be emphasized that". This increases the speed of the speech and serves to preserve the main content. These results have been confirmed by other researchers, and it has been noted that compression improves translation efficiency by reducing redundant information (Gile, 2009; Setton & Dawrant, 2016).

At the syntactic level, it was found that the simplification of the sentence structure is widely used. Complex sentences are converted into simple sentences or some parts of the sentence are omitted. This situation increases the translator's processing speed and reduces time pressure. This result is consistent with studies emphasizing the importance of the time factor in the simultaneous translation process (Pöchhacker, 2016; Chernov, 2004).

Semantic compression was shown as the most important level. In this process, translators remove secondary information and isolate the main idea. The analysis showed that experienced translators manage to preserve the semantic integrity of the speech precisely by using semantic compression effectively. These results show that there is a direct relationship between the development of the translator's competence and the level of compression (Seleskovich, 1978; Lederer, 1994).

Second, the study also revealed important results related to the cognitive aspects of compression. In particular, compression serves as a key tool in reducing the cognitive load of the translator. In the process of simultaneous translation, the translator carries out several processes at the same time - listening, understanding, remembering and translating. This puts great pressure on working memory and attention resources. Reducing redundant information through compression allows more efficient use of these resources. This situation is consistent with the theory of cognitive load, which confirms that the human brain can process a limited amount of information (Sweller, 1988; Baddeley, 2000).

In addition, the results showed that compression is closely related to attention control and selective processing of information. Translators optimize speech by quickly extracting important and secondary information. This increases the speed of decision-making in the interpretation process. These results show that the translator's strategic competence has a direct impact on the overall translation quality (Kiraly, 1995; Kalina, 1998). Also, during the research, the connection of compression with translation quality was clarified. While properly applied compression improves speech fluency and clarity, excessive compression can cause loss of meaning. It was found that cases of over-compression are observed more often in less experienced translators. This suggests the need to consciously learn and practice compression strategies (Jones, 2002; Gile, 2009).

The results also showed that compression becomes more effective and natural as the translator's experience increases. While experienced translators perform compression intuitively, novices often make the mistake of over-reducing or, conversely, retaining too much information. This confirms that compression is an important strategy that should be given special attention during training.

In general, the results of the research proved that compression is not only a linguistic transformation in simultaneous translation, but also a complex strategy that serves to manage cognitive load, optimize time, and ensure the quality of translation.

Discussion

The results of this study confirmed once again that the linguistic and cognitive aspects of the compression strategy in simultaneous translation are closely related. The obtained results show that compression is not a simple reduction tool, but an important strategic mechanism that serves to manage the translator's complex cognitive activity. This shows that it is necessary to consider compression not only at the level of language units, but also in the context of thinking and decision-making processes.

The types of linguistic compression identified during the research - lexical, syntactic and semantic - are widely used in the process of practical translation in accordance with existing theoretical views. However, the results of the discussion show that especially semantic compression has the greatest impact on translation quality. The reason is that it is at this level

that the translator separates the primary and secondary information and preserves the meaningful core of the speech. This confirms the practical application of the principle of "priority of content" in the process of interpretation. From this point of view, compression is directly related to the theory of interpretive translation.

From a cognitive point of view, compression plays an important role in optimizing the translator's working memory and attention resources. The research results support the theory of cognitive load and once again confirm that the human brain is capable of processing a limited amount of information. Therefore, translators focus on the main content by consciously reducing redundant information. This shows that compression is not automatic, but a highly strategic and conscious activity.

During the discussion, another important aspect - the impact of the translator's experience on the compression efficiency - was revealed. Experienced translators tend to use compression in an intuitive and balanced way, while less experienced translators have two problems: over-compression or, on the contrary, retaining excess information. This situation shows the need for a systematic approach in the process of teaching the compression strategy. That is, in the training of translators, special attention should be paid not only to language skills, but also to the development of cognitive strategies.

Also, the research results showed that compression is directly related to translation quality. Correctly applied compression makes the speech fluent, clear and understandable, which makes it easier for the listener to receive information. However, improper or excessive compression can lead to loss of meaning and misinterpretation. Therefore, maintaining a balance in the application of the compression strategy is one of the important factors that determine the professional skills of the translator.

Based on the results, it can be noted that although the compression strategy is an integral part of the translation process, it is still not studied deeply enough in the translator training system. In practical training, more attention is paid to the translation result, and less analysis is made to the process itself, that is, what strategies are used. This prevents the conscious formation of important strategies such as compression. In general, the results of the discussion allow evaluating compression as one of the main strategies that ensure efficiency in simultaneous translation. It is manifested as an integration of linguistic transformation and cognitive management, and plays an important role in the formation of the translator's professional competence. Therefore, it is important to further study compression through experimental and empirical methods in future research, as well as to improve its teaching methodology. is enough.

Conclusion

This study focused on a comprehensive analysis of the linguistic and cognitive aspects of compression strategies in simultaneous interpreting. The obtained results showed that compression is an integral and important component of the translation process, and it is not only a reduction of speech, but also a strategic mechanism that serves to effectively manage the translator's cognitive activity.

During the research, it was determined that compression is carried out at the lexical, syntactic and semantic levels, and it was emphasized that semantic compression is especially important in ensuring the quality of translation. It is at this level that the translator separates primary and secondary information and preserves the meaningful integrity of the speech. At the same time, compression eases the translator's work under time pressure, reduces the working memory load, and allows efficient allocation of attention.

From a cognitive point of view, compression is directly related to the processes of information processing by the human brain, and it serves to optimize the cognitive load. This shows that it is necessary to consider compression as a conscious and strategic activity rather

than an automatic one. The results of the study also confirmed that the experience of the interpreter has a significant effect on the effectiveness of the compression application.

At the same time, it was found that the wrong application of the compression strategy, in particular cases of excessive reduction, can lead to loss of content, and the importance of maintaining balance in this process was noted. Therefore, compression should be formed through special training and practical training as an integral part of the translator's professional competence.

In short, compression is manifested as an integral integration of linguistic transformation and cognitive management in simultaneous translation, and plays an important role in ensuring the efficiency and quality of the translation process. In the future, conducting empirical research in this direction, studying real translation processes on an experimental basis, and improving the methodology of teaching compression strategies will be one of the urgent tasks..

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