

THE PROBLEM OF LEXICAL TRANSFORMATIONS IN SIMULTANEOUS INTERPRETING UNDER COGNITIVE AND DISCURSIVE APPROACH

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Abstract. Scientists have been studying the mechanisms of information transmission in particular its transformation from one language into another at the cognitive level for a long time. The most basic theories in the cognitive process were devoted to the perception of objects and their categorization, one of which is the “frame theory”. The translator, based on his “mental representation”, categorizes objects and puts them in his cognitive space. The cognitive space is the basis on which the translator makes a choice between the types of lexical transformations to convey information. This article analyzes cognitive processes and their impact on the choice of lexical transformations based on simultaneous translation of an economic discourse. The scientific significance of the research is determined by the study of the cognitive decision-making mechanism in the process of using lexical transformations in simultaneous translation. The results of the study can be used in the process of training personnel and specialists in the field of translation, which indicates its practical significance. The main methods are the review and analysis of cognitive mechanisms in the process of using lexical transformations. Results have shown that the translator, when choosing a transformation, goes through 4 types of analysis and relies on 3 contexts. After conducting a review and analysis based on the results, the stages and strategies for conducting cognitive analysis of the text at all levels based on the cognitive mechanism were identified and proposed. They will help simultaneous interpreters avoid problems in using lexical transformations and understand the cognitive decision making process.

Keywords: frame theory, transformations, cognitive space, mental representation, situational aspect, linguistic aspect, extralinguistic factor, psychological factor.

Basic provisions

Simultaneous translation is a rather complex and multifunctional process in which several mechanisms of the cognitive space act at once. The incoming information goes through several stages, in one of which the translator must transform the word or phrase so that the main meaning is conveyed to the recipient. At this stage, the decision-making mechanism is involved, which is the basis for the use of lexical transformations. The article discusses and analyzes the factors influencing these decisions. All stages and factors pass and act simultaneously in the translator's cognitive space, which complicates the process of problem solving.

Introduction

The theory of translation, covering linguistic features and aspects, was formed in the middle of the 20th century, but at that time the discipline had only theoretical value. The process of translation has been described as the transformation of text

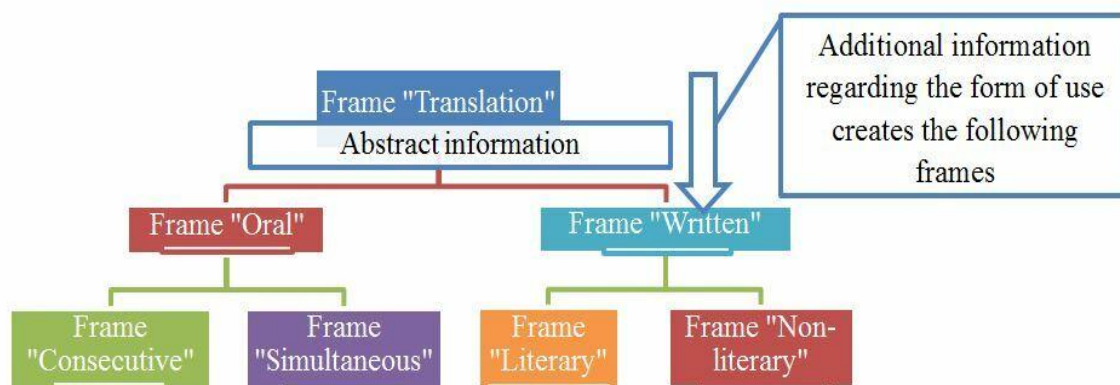
from one language into another [1, p. 6]. Scientists and theorists, in order to create an artificial intelligence that will perform the corresponding translation as well as replace the translator, began to study the possibilities and scientific aspects of language correspondences, which led to long-term failures. They came to the conclusion that their main problem was the machine which did not have the “mind” to understand the meaning. This influenced the further studies of cognitivism, meaning of the word, concept and understanding.

In 1980s, K. Nord has introduced the concept of functional equivalence, which describes transformations as the transfer of not only linguistic means, but also cultural space [2]. The main question in determining the cultural characteristics of the translation was “*for whom is this translation being done?*”. This requires the translator to have background knowledge about culture, traditions, worldview, realities in different languages, and the main concepts and values of the customers. An interpreter transforms thoughts, knowledge and certain concepts, which means having only knowledge is not enough for a simultaneous interpreter.

Translation of information must preserve all the features, from the emotional coloring to the linguistic picture of the world, which makes the translation itself from one language into another a complex process and interpreter activates special cognitive structures to solve the difficulties that have arisen in the translation process and most often this requires certain modifications and transformations of the language in the translation process. Interpreter is not a specialist who mechanically transfers information, but makes a decision, analyzes and interprets.

This relationship between subject and phenomenon with the knowledge and information of the translator is explained by the *theory of frames*. This structure allows categorizing all knowledge, according to the experience gained and the information received. In the case of translation, it helps to understand how the translator receives information and acquires concepts. This theory was developed by M. Minsky, which contributed to the development of cognitive linguistics [3, p. 245]. The following example in Figure 1 shows how frames are formed based on structure of translation processes. The first frame describes a concept or an object, which in turn contains knowledge and general information in our cognitive space. Additional information gives us more knowledge and the concept expands in its functions and capabilities, which leads to the emergence of even more frames that carry certain information. This example shows how concepts are formed and subdivided in our minds, as well as how experience and knowledge affect this.

Figure 1 - Frame theory according to translation studies

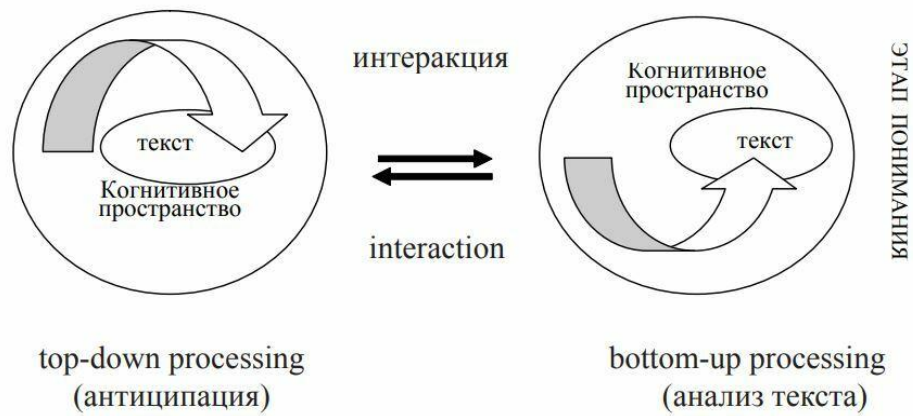


Each frame stores information and knowledge, but this knowledge can vary in terms of human perception, culture, language, and many other factors. This means that the frame itself has a relationship with human perception. One of the ways to describe the understanding and perception of the acquired knowledge in a person's head is called a *mental representation*. Mental representation collects all information and knowledge in memory and that is why there are two types of representation - verbal and figurative. All verbal structures, which also include words, are called the "*mental lexicon*" [4], the non-verbal knowledge on which simultaneous interpreters often rely is called *background knowledge* [5] and all this recreates a *cognitive space* that helps analyze and synthesize human speech.

Translator structures the information using the structure of frames, and the mental representation lays them in memory in the cognitive space. However, how exactly does the mechanism of translation and understanding take place? Many scientists have tried to study this issue, and one of the widely accepted theories is *top-down processing* and *bottom-up processing* [6, p. 234]. The mechanism itself and the relationship between the two processes allows the translator to understand and analyse information. For a simultaneous interpreter, this is the speaker's speech or text from paper. This mechanism helps to use a *probabilistic forecasting* strategy due to background knowledge, and this process always works synchronously. The relevance of this mechanism in the translation process was proved in the experiment of H. Krings [7, p. 137]. This proved that a professional translator always uses background knowledge and his cognitive space to reproduce the translation, which makes the translation itself easy and of high quality. The translator processes the received information according to the lower mechanism [8, p. 46].

The figure 2 shows the interaction of two processes. In the first process, the translator analyses situations in the present time by understanding and perceiving information that is put into the cognitive space. In the second process, the translator analyses the situation based on his cognitive space. This means that understanding itself can't exist without the interaction of these two processes.

Figure 2 - Cognitive (interactive) scheme of text understanding by a translator



The translator receives information and processes it thanks to background knowledge and cognitive experience, but one of the biggest difficulties in translation is the choice of translation transformations and its use. A big step in the study of the cognitive mechanisms of the translator was shown by the experiments on *oculography (eye-tracking)*, presented in the collection of cognitive studies, translated by O'Brien in 2011. In this experiment, K. Lachod describes the cognitive difficulties that the translator faces when transforming language structures and concepts of one language into another, and also describes their features. [9, p. 133-150]. In the experiment, English and Norwegian languages were used, and these words were divided into 3 categories:

1. Words that are similar in spelling or sound, or they are called *false friends* of the translator.
2. Words similar in meaning and form.
3. Different-rooted words.

The results of the experiment showed the difficulty in translating words similar in sound or spelling, while the least difficulty was shown by words similar in form and meaning. The experiment also touched upon the time of perception of information, but the results were the same. This experiment shows that for the perception of information it is very important for the translator to know the entire *conceptual connection*.

All the processes described above, such as perception of information, structuring of information, analysis and synthesis, reference to background knowledge, cognitive space and conceptual connection are the basis for the transfer of information and this whole process occurs at 4 levels according to Mr. Clarke, such as *linguistic, dialectical, cultural and affective-emotive* [10, p. 340].

1. Linguistic.

A translator who hears a word, phrase or sentence takes it through the analysis of the linguistic context, which serves as the basis for further conceptual analysis. This context considers 3 aspects for further translation:

- The first aspect considers background knowledge, that is, information that was transmitted before the current utterance and which can be the most important part of the semantic context.

- The second aspect considers the context of the word or text as a whole in which the same expression was used.

- The third aspect describes the genre, register and area of discourse.

2. Physical.

At this level, should be considered the environment of the translator, that is, what translator hears and sees, or where this or that situation occurs. This helps to analyse the context more broadly.

3. Social.

In this aspect, social ties and their relationship are considered, that is, in the case of a translator, this is an analysis of the relationship of the speaker with the audience or participants in the translation process.

4. Accumulated knowledge.

All experience and cognitive knowledge stored in the translator's memory and which will help to correctly interpret the information. For example, if a person says "I have a nice surprise for you". But if the speaker is an enemy to a person, then the word "surprise" can be perceived in the negative sense of the word [11, p. 102-103].

Considering the above features in the transfer of information, the translation of discourse can be carried out according to three reasons:

1. Linguistic context (in this case, consideration of the lexical, semantic, as well as syntactic level and analysis).

2. Situational context (considers all knowledge from the current situation, from time to place).

3. Cognitive context (all background knowledge accumulated in memory) [12, p. 62].

Description of material and methods

The article was based on an analysis of the simultaneous translation of a video called "This is the VOA Special English Economics Report" [13]. The text was analysed in a linguistic, situational and cognitive context. This video describes the relationship between children and money, as well as how parents should teach and educate children in relation to money. The description of the video makes it clear that the analysis will be related to economic discourse. In the following Table 1, an analysis was made of the cognitive operations of a simultaneous interpreter in order to understand how our cognitive processes of perceiving and receiving information affect the use of transformations, as well as a frame concept was shown that contains certain information when choosing a particular concept, which affects the choice use of lexical transformations.

Results

Analysis of the linguistic context allows us to highlight the following features:

1. Since the text is a report, passive constructions are most often used (is to let, is expected, are usually advised, is to show), constructions in the present tense (learn, give, get, do, say, can), and so same modal verbs (should make, can save, may be).

2. Situational analysis is that the text for translation is a report for learning English.

3. The cognitive process can be based on the topic and the relation of the discuss to the translator's knowledge.

Table 1. Analysis of cognitive operations in the use of lexical transformations

Complex terms and words	Cognitive operation	Frame classification	Lexical transformation	Translation
receiving an allowance	The concept of allowance has several meanings. Conceptual and background information about the topic gives us the opportunity to make a choice in favor of translation according to the context.	amount of money regularly given by parents	Concretization	Күнде лікті қажетіңе ақша алу
financial mistakes are not very costly	Costly means expensive. However, in the phrase financial difficulties, the translator understands that it is not in the direct meaning of the word price.	The price is relative to the age of the children when the finances available are not large.	Addition	Қымбатқа соқпайды
within a budget	The frequent use of the phrase is laid in the cognitive space of the translator and makes it possible to translate in an adequate translation.	Limits on the use of money.	Logical development	Бюджет шеңберінде
work around the home	Contextual and situational knowledge makes it possible to determine the target meaning of the phrase “work around”.	All housework.	Logical development	Үй жұмыстары
to cut costs	The contextual meaning helps determine the correct translation.	Money for unnecessary things.	Concretization	Шығынды азайту
offer service	The semantic development of the phrase through the study of the context helps to make a holistic translation.	Services giving knowledge.	Substitution	Қызмет көрсету

Discussion

The results of the study showed that in choosing lexical transformations, a simultaneous interpreter bases on contextual ones, which include the lexical, situational characteristics of the word, as well as on cognitive, that is, background knowledge about the word or phrase.

The analysis takes place in the following steps:

1. Analysis at the word level, that is, the choice of all suitable synonymous words.
2. Analysis at the level of the sentence and the text, namely the study of the context of the word in the text.
3. Analysis of the situation, namely the time, place, and determination of the features of the current situation.
4. Analysis of all basic, background knowledge in the cognitive space.

On this basis, the following strategies can be distinguished:

- 1) prototypical strategies - the organization of translation activities in search of equivalent according to the frame classification.
- 2) adaptive strategies - additional decisions that the translator makes according to his experience and knowledge.

The prototypic strategy consists of the following actions:

1. creating a sentence corresponding to one of the prototypical frame structures;
2. the terms and accompanying words of the general language and special vocabulary known to the interpreter, the knowledge of which is situationally determined and forms part of the structure of the mental lexicon of the simultaneous interpreter;
3. the most typical syntactic constructions.

The translator's adaptive actions are predetermined by the specifics of the materials being translated, which include the following difficulties.

1. translation of complex terminological structures;
2. hidden syntactic structures;
3. elimination of superfluous words and repetitions in translation;
4. mental editing of grammatical errors that can make it difficult to understand the original text.

The results also show that the preparation of a professional translator and interpreter begins with the study of discourse, the preparation of a terminological and lexical base and its memorization, analysis of the topic of the event and participants, analysis of one's cognitive, physical and psychological preparation. A professional translator is always developing and expanding his knowledge, which helps to expand mental representation and cognitive space.

Conclusion

The cognitive process of translating one language into another is a rather complex process. Many aspects are connected in this process, from speech perception to linguistic structures. The process starts with the object, the word and how the translator perceives it and then categorizes it according to the theory of frames. Frames are interconnected with background knowledge, which in turn appears through experience or knowledge. The verbal and non-verbal knowledge that is contained in the cognitive space creates a mental representation. The translator structures the information using the structure of frames, and the mental representation puts them in memory in the cognitive space.

The translation mechanism itself occurs due to two processes, which are called top-down and bottom-up processing. A professional translator always uses background knowledge and his cognitive space to reproduce the translation, which also affects the choice of lexical transformations in the translation process.

Thanks to experiments, it was proved that the most difficult words to translate are homonyms and in order to translate them and use the correct transformation, 3 aspects must be taken into account, such as:

1. Lexical
2. Situational
3. Cognitive.

The analysis of synchronous video within the framework of the study in the article showed that most often, in order to choose any lexical transformation, the translator relies on the following components:

1. Cognitive space
2. Contextual meaning

3. Semantic development.

The analysis in the study showed that simultaneous translation is a very complex process in which a lot of cognitive mechanisms are involved. Simultaneous interpreter is a professional with a huge knowledge base that is constantly growing and improving. This knowledge helps to better use lexical transformations and make a choice in favour of a more correct option, taking into account the lexical, situational, and cognitive context.

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КОГНИТИВТИ - ДИСКУРСИВТИ ТӘСІЛДІҢ КӨМЕГІМЕН СИНХРОНДЫ АУДАРМАДА ЛЕКСИКАЛЫҚ ТРАНСФОРМАЦИЯЛАРДЫ ҚОЛДАНУ

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Аңдатпа. Ғалымдар ақпараттың когнитивтік деңгейде берілу механизмдерін, әсіресе оның бір тілден екінші тілге жеткізілуін өте ұзақ уақыт бойы зерттеп келеді. Танымдық процестегі ең негізгі теориялар объектілерді қабылдауға және оларды категорияларға

бөлуге арналды, олардың бірі “фрейм теориясы”. Аудармашы өзінің “менталды қабылдау қасиетіне” сүйене отырып, объектілерді санаттарға бөліп, оны өзінің когнитивті кеңістігінде сақтайды. Когнитивтік кеңістік аудармашының ақпаратты жеткізу үшін лексикалық трансформацияларды түрлерінің арасында таңдап алуына көмектеседі. Бұл мақалада когнитивтік процестер мен экономикалық дискурстың негізінде синхронды аудару кезінде қолданылған лексикалық трансформацияларға когнитивті процесстің тигізер әсері қолданды. Зерттеудің ғылыми маңыздылығы синхронды аудармада лексикалық түрлендірулерді қолдану процесінде когнитивтік шешім қабылдау механизмін зерттеумен анықталады. Зерттеу нәтижелерін аударма саласындағы кадрлар мен мамандарды даярлау үдерісінде пайдалануға болады, бұл оның тәжірибелік маңыздылығын көрсетеді. Негізгі әдістер – лексикалық түрлендірулерді қолдану үдерісіндегі когнитивтік механизмдерді қарастыру және талдау. Нәтижелер бойынша аудармашы трансформацияны таңдағанда талдаудың 4 түрінен өтіп, аударма процесінде 3 контекстке сүйенетінін анықталды. Нәтижелер бойынша шолу мен талдау жүргізілгеннен кейін когнитивті механизм негізінде барлық деңгейдегі мәтінге когнитивтік талдау жүргізудің кезеңдері мен стратегиялары анықталып, ұсынылды. Олар синхронды аудармашыларға лексикалық түрлендірулерді қолданудағы қиындықтарды болдырмауға және когнитивті шешім қабылдау процесін түсінуге көмектеседі.

Тірек сөздер: фрейм теориясы, трансформациялар, когнитивтік кеңістік, менталды қабылдау, ситуациялық аспект, лингвистикалық аспект, экстралингвистикалық фактор, психологиялық фактор.

КОГНИТИВНО - ДИСКУРСИВНЫЙ ПОДХОД В ИСПОЛЬЗОВАНИИ ЛЕКСИЧЕСКИХ ПРЕОБРАЗОВАНИЙ В СИНХРОННОМ ПЕРЕВОДЕ

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Аннотация. Ученые очень давно изучают механизмы передачи информации на когнитивном уровне и в особенности ее трансформацию при передаче с одного языка на другой. Основные теории в когнитивном процессе были посвящены восприятию объектов и их категоризации, одной из которых является фреймовая теория. Переводчик, основываясь на своей ментальной репрезентации, категоризирует объекты и закладывает их в своем когнитивном пространстве. Когнитивное пространство – это база, основываясь на которой, переводчик делает выбор между типами лексических трансформаций для передачи информации. В данной статье проведен анализ когнитивных процессов и их воздействия на выбор лексических трансформаций на материале синхронного перевода экономического дискурса. Научная значимость исследования определяется изучением когнитивного механизма принятия решений в процессе использования лексических трансформаций в синхронном переводе. Результаты исследования могут быть использованы в процессе подготовки кадров и специалистов в области перевода, что свидетельствует о его практической значимости. Основными методами являются рассмотрение и анализ когнитивных механизмов в процессе использования лексических трансформаций. Результаты показали, что переводчик при выборе трансформации осуществляет 4 вида анализа и опирается на 3 контекста в процессе перевода. По итогам обзора и анализа материала были определены и предложены этапы и стратегии проведения когнитивного анализа текста на всех уровнях на основе когнитивного механизма. Они

помогут переводчикам-синхронистам избежать проблем с использованием лексических трансформаций и понять процесс принятия когнитивных решений.

Ключевые слова: теория фреймов, трансформации, когнитивное пространство, ментальная репрезентация, ситуативный аспект, лингвистический аспект, экстралингвистический фактор, психологический фактор..

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