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**TRANSLATION OF THE TITLES OF BOOKS IN THE  
AREA OF NATURAL SCIENCES: THE CASE OF  
ENGLISH-LITHUANIAN LANGUAGE PAIR**

TRANSLATION PAPER

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# INTRODUCTION

Language has always been the most important tool of communication even though it is a very complex phenomenon. It is a significant part of a person's identity and culture. As individuals, we use language in our everyday life to communicate with each other. Communication is an essential while exchanging knowledge, history, feelings, ideas and everything we can think of. There are a lot of different cultures and societies we can communicate with. In order to do that we use translation. It is an inseparable part of a language.

When speaking about *translation*, it is safe to say that people describe it as a process where you translate something from one language into another. However, different linguists provide a lot more definitions of this term. According to Hatim and Munday (2004), translation can be explained as a phenomenon that has a great impact on our regular life. Other linguists explain translation as a “cross-cultural transfer“ (Vermeer, 1998:46), or as “rendering the meaning of a text into another language in the way that the author intended the text“ (Newmark, 1988:5). Generally speaking, the goal of translation is to provide an equivalent meaning of a word, sentence or the whole text in other language.

Translation is a complex phenomenon causing a lot of difficulties when rendering information from one language into another. The main question arising while translating a text is whether to use a literal or free translation. That's why it has been so highly discussed between such linguists as Nida (2003), Newmark (1988), Pažūsis (2014), Venuti (1998) and others. Difficulties arising while translating from English into Lithuanian give us a reason to analyze and compare such translations.

This final thesis is **relevant** in that it could be useful for students of the English language and translation and those who are interested in translation and its strategies as such.

**The object of the study is** titles of books in the area of natural sciences translated from English into Lithuanian.

**The aim of the paper is** to analyze and compare translations of the titles of books from English into Lithuanian in the area of natural sciences.

**Research objectives** are as follows:

1. To provide the general understanding of what natural science is.
2. To describe the concept of translation and its related phenomena.
3. To analyse what translation strategies are used while presenting examples collected from books in the area of natural sciences.
4. To conduct an investigation and illustrate the data which present the translation of titles of books in English and Lithuanian.

**The research methods** employed in the present study include:

1. Descriptive – theoretical literature analysis helped to provide the theoretical background of natural sciences, translation as a science and to overview different translation strategies.
2. Contrastive linguistic analysis allowed us to reveal and compare titles of books and their translations from English into Lithuanian.
3. Statistical analysis helped to illustrate the results of the empirical part of the research.

**The structure of the work** consists of the introduction, the theoretical part, which includes several chapters, the practical part, conclusions, the list of references and sources the linguistic data was taken from.

**Scope of the research:** 60 examples of the titles of books in the area of natural sciences and their translations from English into Lithuanian.

Abbreviations and their definitions:

SL – source language;

TL – target language;

ST – source text;

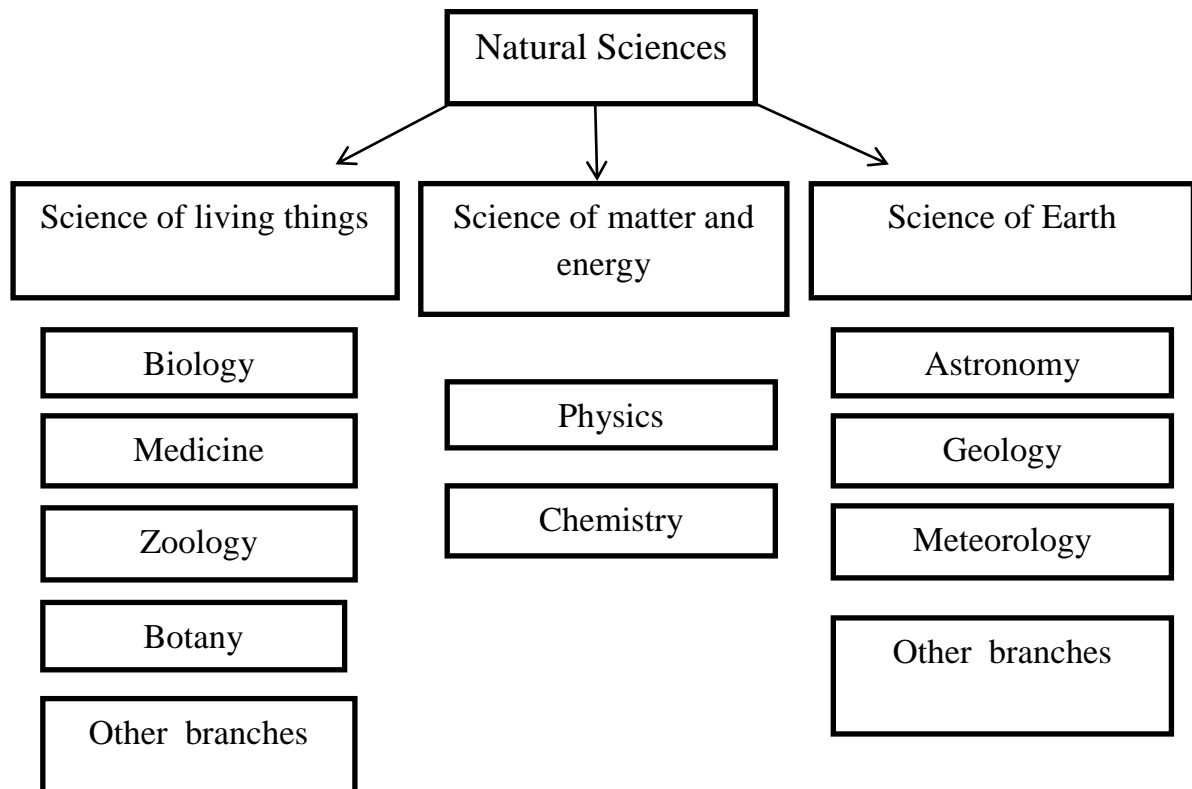
TT – target text.

# 1. NATURAL SCIENCES: GENERAL UNDERSTANDING

Science has always been a part of our lives. When we think of natural sciences we have in mind that they are somehow related with nature, humans and environment. Professor Ledoux provides us with his understanding and definition of these sciences: “natural sciences are defined as disciplines that deal only with natural events (i.e., independent and dependent variables in nature) using scientific methods“ (Ledoux, 2002).

Natural science is a part of human experiences and is very important for all of us. It helps us to understand the world we live in, its systems and processes. The following figure illustrates the main branches of natural sciences.

**Figure 1.** The main branches of natural sciences according to Ledoux (2002):



Without going further into detail about each of them, it is enough to say that these branches of natural sciences are the most common ones, even though they have a lot of sub branches. This chapter helps us to understand what natural sciences are and what the practical part of this paper will be based on.

## 2. THEORETICAL BACKGROUND ON TRANSLATION

Translation is a very complicated process. It is known that this process has existed for thousands of years, but as a science it was recognized only in the 20<sup>th</sup> century. According to Pažūsis, in Lithuania, translation studies attracted more attention after the restoration of independence when the need of translations from and into Lithuanian has increased (Pažūsis, 2014:7). Munday states that “the English term *translation*, first attested in around 1340, derives either from Old French *translation* or more directly from the Latin *translatio* (‘transporting’), itself coming from the participle of the verb *transferre* (‘to carry over’)” (Munday, 2016:18).

There are more than one definition of translation which are helpful in order to understand this phenomenon. Nida and Taber explain that “translating consists in reproducing in the receptor language the closest natural equivalent of the source-language message, first in terms of meaning and secondly in terms of style” and they think that “translating must aim primarily at “reproducing the message” (Nida and Taber, 2003:12). McArthur provides his understanding of translation and calls it the “restatement of the forms of one language in another (McArthur, 2005:678). Different linguists provide different definitions of what they think translation is. According to Munday (2016), translation has three main definitions: the general subject field or phenomenon, the process and the product.

Despite the fact that the definitions differ, it is clear that translation is a process where you transfer some kind of information from one language into another. Translation has many different audiences because it is intercultural. Having that in mind it is clear that the same text can have several different translations.

### 2.1 Translation as a *process*

As it was mentioned above, translation has several meanings and one of them is that translation is a process. This process involves two different languages, two cultures. This translation paper is concerned with the English and Lithuanian language pair.

Speaking about the main aim of the translation it was clearly indicated in the book *A Cognitive Linguistics View of Terminology and Specialized Language*. The editor of this book states that: “the creation of texts in a target language that transmit the same message as the text in the source language is at the core of any translation process” (Faber (Ed.), 2012:104). Translation is an activity which can cause a lot of trouble and might be obscure. The translator should be aware of the most important thing which is knowing the source language

(SL) and the target language (TL) very well. According to Sofer (2002), these are the requisites for performing a good translation:

- To be perfectly acquainted with the language and its culture, traditions, as well as with the people and their communication habits, feelings, etc.
- To be aware of all the modifications and growth of a language. Due to the fact that it is constantly changing it might be that the translator will be surprised that a word he or she was translating a year ago has a different meaning now.
- To be good in a way of expressing his or hers native language in written and spoken form.
- To be capable of translating in more than one field (it can be medical, legal, commercial translation and others).
- To be a good researcher while looking for some sources that might help while performing a translation.
- To be aware of the growth of mass media, such as hardware, software and others (Sofer, 2002:31-34).

A translation process consists of some major activities which are indicated by Darwish (1999):

1. Planning translation
2. Analyzing information
3. Translating
4. Revising
5. Editing
6. Proofreading
7. Reviewing
8. Completing translation
9. Delivering translation (Darwish, 1999:5-6).

All of them are very important and help to deal with the problems arising while translating from one language into another.

## 2.2 Translation as a *product*

The previous chapter introduced translation as a process. This chapter aims at presenting theoretical background on translation as a product.

Everyone understands that translation as a product can be explained as a final, translated text, which is submitted to the person who asked you to translate something. Gouadec in his book *Translation as a Profession* agrees with the idea that: “a translation is definitely seen as a *product*. The product is the result of a manufacturing process which includes the use of basic resources (i.e. terminology, phraseology, knowledge, information, etc.), of recycled components (i.e. translation memories and previously translated segments) (Gouadec, 2007:378).

All in all, it can be said that both concepts, translation as a process and translation as a product, are interrelated. Translation as a process means that it is an activity which is done by the translator. The process of translation is a very complex phenomenon. It requires a lot of knowledge, as well as time and patience while translating. The above mentioned requisites and activities (see 1.1.) are essential in order to make the process easier. When the process becomes easy there is no doubt that the final *product* will be good. Translation is concerned about the *process* and the result, which is the *product*. Knowing all of that will help to develop a successful career and become the better translator.

## 2.3 Equivalence in translation

To begin with, the first and most important thing to do is to provide the definition of a word *equivalence*. This word is used in another field such as mathematics and defines the technical term. In translation, however, it has a more general meaning. Vinay and Darbelnet define equivalence in translation as a procedure which “replicates the same situation as in the original, whilst using completely different wording” (Vinay and Darbelnet, 1995:342).

Differences between languages and their grammatical tenses, expressions, idioms and other parts can be a tough task to complete. Translation from one language into another might lose its equivalence and mislead the reader which is reading a translated text. It is believed that equivalence is the main problem in translation. Catford states that “the central problem of translation-practice is that of finding TL equivalents. A central task of translation theory is that of defining the nature and conditions of translation equivalence” (Catford, 1965:21).

Translation equivalence is an important factor which determines whether the translated material will have the same meaning as the source text.

Nida and Taber (2003) present two different types of equivalence: formal equivalence and dynamic equivalence. These two types have different effects: dynamic equivalence is built on equivalence while formal equivalence is based on providing a message, that means the original text is presented in way that the reader feels the exact effect.

Despite different thoughts and ideas, equivalence is an important approach even though it might be difficult to deal with. Many researchers and translation theorists are interested in the analysis and understanding of this phenomenon. They all agree with the fact that this phenomenon is the main key to providing meaningful and valuable translation in general.

### **3. TRANSLATION STRATEGIES: DEFINITION**

Translation is an activity, which has become extremely important in our lives. Different cultures, societies and their need for translation make this activity even more popular. Despite the need and popularity it might be called as a complicated and challenging process. The responsibility goes on the translator's shoulders because he or she has to deal with all the cultural aspects of the source text and try to transfer all those aspects in the target text. For this purpose, the translator has to apply different translation strategies.

Pažūsis observes that such terms as translation *procedures, techniques, operations, changes, shifts* and *methods* are widely used in various theoretical resources on translation (Pažūsis, 2014:359). Moreover, the newest term is a *strategy*. All of those terms are different, but they stand for the same procedure that helps to deal with translation and decide how some information should be translated. To maintain the consistency, the term *translation strategy* will be used all over the paper.

Lörscher identifies translation strategy as “a potentially conscious procedure for solving a problem faced in translating a text, or any segment of it” (Lörscher, 1991:76). Baker states that translation strategies “involve the basic tasks of choosing the foreign text to be translated and developing a method to translate it” (Baker, 1998:240).

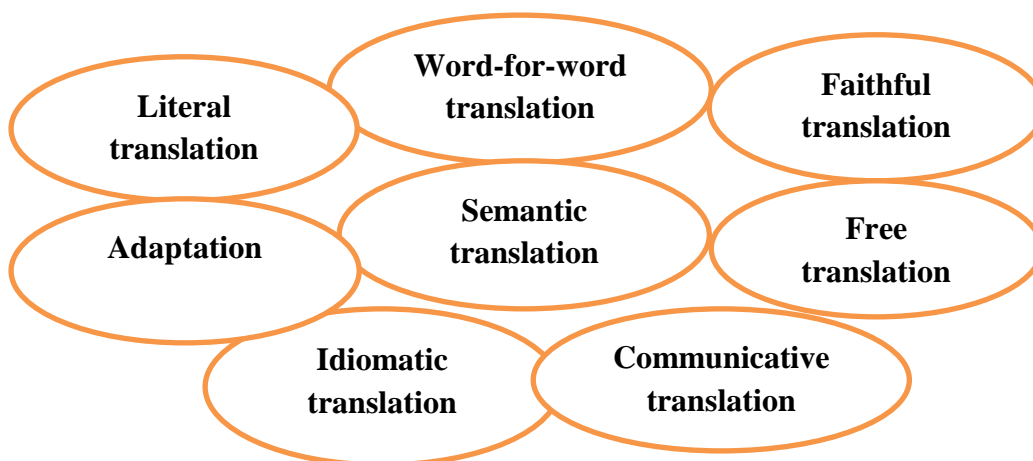
Each text is different and requires the usage of different translation strategies. It is clear that the translator should choose whether to use one or another translation strategy in order to provide the best translation result. Translation theorists provide different definitions of translation strategies but the general idea is clear. Generally speaking, the aim of the translation strategy is to help the translators to solve the problems arising while translating different texts and trying to transfer all the cultural aspects of a particular language.

The following chapters will present the broader understanding and explanation of what kind of translation strategies exist and are described by Newmark (1988) and Pažūsis (2014).

### 3.1 Newmark's translation methods (strategies)

It has been said that “the central problem of translating has always been whether to translate literally or freely“ (Newmark, 1988:45). The most important factors which should be taken into account are that the translator has to know what the purpose of translation is, to pay attention to the type of text and who will be reading it. Newmark uses eight terms to describe his *translation methods* and the following figure illustrates them.

**Figure 2.** Translation methods according to Newmark (1988):



According to Newmark (1988), **Word-for-word translation** – is when the source language and its word order is maintained and the words are translated by their most typical meaning.

**Literal translation** – is where source language grammatical constructions are transmitted to their nearest target language without paying attention to the context.

**Faithful translation** – restores the precise meaning of context of the original text within the constraints of the target language grammatical structures.

**Adaptation** – is called as a freest form of translating process.

**Free translation** – gives the opportunity to the translator to submit the content without the form of the original.

**Idiomatic translation** – the aim is to transfer the message of the original but the usage of the idioms where these don't exist tend to distort the meaning.

The two translation methods – **semantic** and **communicative** are the best in a way of achieving the two goals of translation which seek the text to be *accurate* and *economical*. He states that “communicative translation attempts to produce on its readers an effect as close as possible to that obtained on the readers of the original. Semantic translation attempts to render, as closely as the semantic and syntactic structures of the second language allow, the exact contextual meaning of the original“ (Newmark, 1981:39).

Peter Newmark was known as a translation professor and his methods of translation have been widely discussed and used. They helped the translators and students to understand the translation as a phenomenon, its theories and ways of expression. He described the conversion of a text from one language to another as both a science and an art. He also states that “translation is concerned with moral and factual truth. This truth can only be effectively rendered if it is grasped by the reader, and that is the purpose and the end of translation“ (Newmark, 1991:1).

The following chapter will introduce translation strategies proposed by Lithuanian translator and linguist Pažūsis.

### 3.2 Pažūsis' translation strategies

According to Pažūsis (2014), the text in the original language is converted into the target language which has the same communicative purpose and the same context as the original. The translator has to decide which translation strategy should be used in order to present an equivalent text. This is the aim of every translator and it can be achieved by using translation strategies depicted in a book *Kalba ir vertimas* by Pažūsis (2014).

According to him, the first translation strategy is **shifts** or **shifts of expression**. It means that when a person translates some kind of a text, he changes grammatical units such as parts of speech, parts of sentences and their order, syntactic structures, lexical units such as words, collocations and their semantic components. Because of this reason two groups can be distinguished: grammatical changes or shifts and (lexical) semantic changes or shifts. These two are interrelated, and one change can lead to another change of the same or different nature while forming composite changes.

The second translation strategy is **addition** or, in other words, **translation by addition**. It means that something (that doesn't exist or is not clearly indicated in the source text) is added into the target text. Addition is associated with such term as explicitation or explication. "In Shuttleworth and Cowie (1997:55), explicitation is defined as the phenomenon which frequently leads to TT stating ST information in a more explicit form than the original"(cited in Dimitrova, 2005:34).

The third translation strategy is **omission**. Generally speaking, it means that some significant part from the source text is missing in the target text. Such omission does not always do a damage for the text. Sometimes it might be helpful if the sentence or text is very long, clumsy and it is difficult to translate it.

The fourth strategy is **compensation**. It is the way to achieve the adequacy in translation. Compensation occurs "when loss of meaning, sound-effect, metaphor or pragmatic effect in one part of a sentence is compensated in another part, or in a contiguous sentence"(Newmark, 1988:90). This strategy is one of those that show the creativity of the translator.

All the translation strategies mentioned here and in the Chapter 2.1. help to understand what the functions of each strategy are. The following chapter will present the research on how different translation strategies are used in translation of the titles of books in the area of natural sciences.

## 4. THE ANALYSIS OF TRANSLATION OF THE BOOK TITLES IN THE AREA OF NATURAL SCIENCES

### 4.1 Research methodology

Translation is a very complicated process which requires a lot of knowledge. The task is not always easy for the translators who have to deal with some fields they are not well-familiar. This work is concerned with the titles of books in the area of natural sciences and their translations from English into Lithuanian. Translations in this scientific area are quite complicated, because the texts contain many technical terms.

The practical part of the research paper is based on the analysis of translation strategies and is conducted by presenting the selected examples. The first step was to find a sufficient amount of the titles of books and their translations for the analysis. This task was not that easy. To achieve this goal, Šiauliai University Library ([biblioteka.su.lt](http://biblioteka.su.lt)) and online book shop ([www.knygos.lt](http://www.knygos.lt)) have been used. Further investigation was implemented by applying the following research methods:

- *Contrastive linguistic analysis* which allowed us to reveal and compare titles of books and their translations from English and Lithuanian. All selected examples, 60 titles in total were presented in the tables providing one title from the original book and another from the translated one.
- *Statistical analysis* which helped to find out which translation strategies were used the most and illustrate the results of the research.

Chapters 2.1 and 2.2 present two different linguists and their translation strategies. However, not all of these strategies have been used while translating the titles of books. The research has been conducted by combining Pažūsis's (2014) and Newmark's (1988) translation strategies, such as a word for word translation, addition, omission, shifts and mixed-type.

## 4.2 Word-for-word translation

As it was pointed out by Newmark (1988), word-for-word translation is one of those that maintain the same word order which is present in the source text, and the words are translated by their most common meaning. Generally speaking, word-for-word translation strategy is frequently used while translating legal, medical or some similar texts having specific terminology. Natural sciences are not an exception. 25 out of 60 examples of the titles of books were translated by using word-for-word translation strategy. Some cases are presented in the following table:

**Table 1. Word-for-word translation strategy**

	<b>ORIGINAL</b>	<b>TRANSLATION</b>
1.	The evolution of physics. The growth of ideas from early concepts to relativity and quanta	Fizikos evoliucija. Idėjų raida nuo pirmųjų sąvokų iki reliatyvumo ir kvantų teorijos
2.	The paleohydrogeology of the Baltic basin. Neoproterozoic and Phanerozoic	Baltijos baseino paleondrogeologija. Neoproterozojus ir fanerozojus
3.	Cognitive therapy and the emotional disorders	Kognityvinė terapija ir emociniai sutrikimai
4.	Crystals	Kristalai
5.	The end of certainty. Time, chaos and the new laws of nature	Tikrumo pabaiga. Laikas, chaosas ir nauji gamtos dėsniai
6.	Chemistry for you	Chemija tau
7.	The human body	Žmogaus kūnas

As it can be seen from the examples above, all the titles are translated by using word-for-word translation strategy. Nothing is added nor omitted. Everything is left as it is to provide the same meaning as in the source text. All these titles convey the meaning of a word which is present in the original. There is nothing much to explain or discuss because this particular translation strategy is probably the one which does not require specific explanation because of its simplicity.

The following chapter will illustrate another translation strategy which is addition.

### 4.3 Addition

In most cases, addition is used to explain the meaning. This strategy is understood as a procedure by which some sort of information which is not present in the source language text appear in the target language text. It might be just a simple word, a phrase or even the whole sentence. The author of the original text provides a title which is comprehensible in his culture for the source text readers while the translated title is made for different people with a different background and from a different culture. Addition was not widely used while translating the titles of books in the area of natural sciences because of only 6 out of 60 examples illustrate this strategy. Consider those examples presented in Table 2 below:

**Table 2. Translation by addition.**

	<b>ORIGINAL</b>	<b>TRANSLATION</b>
8.	Your body's many cries for water	<b>Natūralus būdas apsisaugoti nuo ligų bei atgauti gerą sveikatą.</b> Jūsų kūnas šaukiasi vandens
9.	Seven brief lessons on physics	Septynios trumpos fizikos pamokos. <b>Kaip veikia pasaulis</b>
10.	Theta healing. Diseases & disorders	Teta gydymas. Ligos ir sutrikimai <b>nuo A iki Z</b>
11.	Urology. An illustrated colour text	Urologijos <b>vadovas</b> . Spalvotas tekstas su iliustracijomis
12.	How horses feel and think: understanding behaviour, emotions and intelligence	Ką jaučia ir mąsto žirgai. Pažinkite elgesį, <b>patirkite</b> emocijas, <b>pajuskite</b> intelektą
13.	All countries of the world	Pasaulio šalių <b>žinynas</b>

Table 2 demonstrates that addition has resulted in the biggest change in Example 8. The target title adds the sentence “Natūralus būdas apsisaugoti nuo ligų bei atgauti gerą sveikatą” and clarifies the meaning by adding more information. In Example 9, the sentence is added, too. Addition of “Kaip veikia pasaulis” indicates that the book is not only about seven brief lessons on physics but also about the universe and how it works. In Example 10, the phrase “nuo A iki Z” is added. Examples 11 and 12 show some minor changes. Example 11 illustrates the addition of the word “vadovas”. The target title of Example 12 adds two words, “patirkite” and “pajuskite”. In Example 13, the word “žinynas” is added. The addition helps to

understand the main idea what the book is about and choose it from the cover without analysing before we decide to read.

## 4.4 Omission

Chesterman states that “the translator omits words that do not have equivalents in the TT, or that may raise the hostility of the receptor“ (Chesterman, 1997:110). The omission is opposed to the addition. Generally speaking, omission occurs when the translator deletes some element which is present in the source text while transferring it to the target text. This translation strategy has been found only once in this research. It means that natural sciences are the area which tries to maintain word-for-word translation or to change something, but to avoid omission if it is possible. Table 3 below presents the example:

**Table 3. Translation by omission**

	<b>ORIGINAL</b>	<b>TRANSLATION</b>
14.	General chemistry: principles and modern applications	Bendroji chemija

This example illustrates translation by omission which in this case is very clear. The part after the colon is omitted even though those words have equivalents in the Lithuanian language and are not difficult to translate. This translation strategy was acceptable for the translator, and he decided to do what he thinks is the best for the translation.

## 4.5 Shifts

Shifts are the most common translation strategy. It expresses some changes that occur in the process of translation. The translators choose this strategy and most of the time change the structure of a sentence because this helps the reader to understand the general idea. According to Pažūsis (2014), grammatical and lexical changes are the most noticeable using this translation strategy. Consider the following examples:

**Table 4. Translation by applying shifts**

	ORIGINAL	TRANSLATION
15.	What to expect when your'e expecting	Nėščiosios vadovas
16.	The cure for all diseases	Kaip išsigydyti visas ligas
17.	What makes me me	Kuo aš ypatingas
18.	The star guide: learn how to read the night star by star	Žvilgsnis į žvaigždes: vadovas nakties dangui stebėti ištisus metus
19.	Prevent and reverse heart disease	Širdies ligos. Prevencija ir išgydymas

Generally speaking, all of these examples have some particular changes. They illustrate the replacement of part of speech by another part of speech, i.e. verb → noun or noun → verb, etc. Example 15 presents the change where verbs “expect” and “expecting” are replaced by nouns “nėščiosios vadovas” thereby experiencing some translation loss, i.e. word play is not retained. In Example 16, noun “cure” is replaced by verb “išsigydyti”. The title in Example 17 has a transformation, too. This title demonstrates the syntactic change. The source title of Example 18 is divided into two parts, and the translation of this title maintains that but changes the order of those segments. The idea is clear, but the style is different. Example 19 shows less differences between ST and TT.

## 4.6 Mixed type

Examples which do not comply with the above-mentioned translation strategies of word-for-word translation, omission, addition, shifts or combine 2 or 3 of them are assigned to the mixed-type translation. Those examples are presented in Table 5 below:

**Table 5. Mixed-type translation**

	ORIGINAL	TRANSLATION
20.	Advanced chemistry for you	Organinė chemija: 11 klasei
21.	Creatures of other days	Senų gadinų išnykę gyvi sutvėrimai: pagal Hutchinsoną
22.	What a wonderful world	Kaip paprastai paaiškinti pasaulį apie evoliuciją, išradimus, gamtos ir fizikos dėsnius kitaip.
23.	The reconnection: heal others, heal	Reconnection. Gydykite kitus, sveikite

	yourself	patys
24.	The integrated Health Bible. The revolutionary healing programme for optimum wellbeing and vitality	Geros savijautos biblija. Revoliucinga gydytojo praktiko programa, kuris jus įtikins.
25.	The universe and how to see it. A practical guide to viewing and understanding the night sky	Visata. Kaip stebėti dangų. Praktinis vadovas dangui stebėti ir pažinti

Example 20 demonstrates a combination of omission and addition. The translation does not have the part “for you“, but the words “11 klasei“ have been added. The title in Example 21 is completely changed. The author of the book is Hutchinson, but in the original title he is not mentioned. However, the translator adds the phrase “pagal Hutchinsoną“. The translated title has some words that are typical only for Lithuanian language, e.g. “senų gadyinių“ even though the original title is very simple and can be translated without using specific words. Example 22 is an instance of complete transformation. Only the word “world“ is left in the translation, everything else is omitted and the sentence “Kaip paprastai paaiškinti pasaulį apie evoliuciją, išradimus, gamtos ir fizikos dėsnius kitaip“ is added. Example 23 has some transformation, too. The word “reconnection“ is left untranslated, and the other part is translated by using word-for-word translation strategy. Example 24 presents omission and addition. Such words as “integrated, wellbeing and vitality“ are omitted, the construction of the sentence is changed and the phrase “healing programme“ has been translated as “gydytojo praktiko programa“. The source title of Example 25 is made out of two sentences, while the translation is composed of three sentences. It can be seen that the phrase “stebėti dangų“ is repeated twice although it is not necessary, the word “night“ is omitted.

## 5. STATISTICAL ANALYSIS

The following diagram presents the frequency of each translation strategy which has been used while translating the titles of books in the area of natural sciences.

**Figure 3. Translation strategies and their usage**

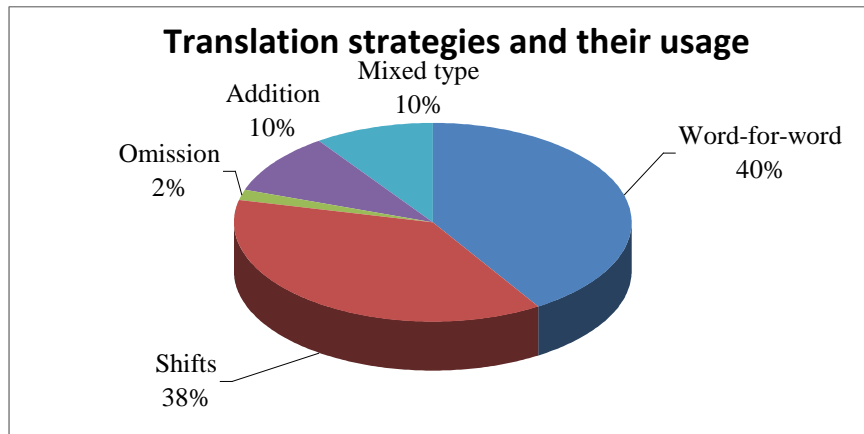


Figure 3 shows that the strategy that has been used the most is word-for-word translation (25 examples). It is followed by shifts (23 examples), mixed-type translation (6 examples), addition (6 examples) and omission (1 example).

## CONCLUSIONS

The analysis of translation strategies that has been used when translating the titles of books in the area of natural sciences allows to draw the following conclusions:

- Translation is an activity which has the purpose of providing equivalent translation and reproducing the message to the target text reader. Various translation strategies are used to achieve that aim. However, it is a complex phenomenon causing a lot of difficulties when rendering information from one language into another.
- The research on theoretical issues on translation has shown that there is no single framework of translation strategies which can be used in the analysis of the titles of books. The research has been conducted by combining Pažūsis and Newmark's translation strategies, such as word-for-word translation, shifts, additions, omissions, mixed-type.
- Translations in the area of natural sciences are quite complicated, because the texts contain many technical terms.
- 60 cases have been found when analysing the titles of books in the area of natural sciences. The collected examples of the translation strategies can be presented according to their frequency. The strategy that has been used the most is word-for-word translation (42%). It is followed by shifts (38%), mixed-type (10%), addition (8%) and omission (2%). It can be stated that natural sciences are the area which tries to maintain word-for-word translation or to change something, but to avoid omission if it is possible.

To sum up, differences between the source language and the target language may cause a lot of difficulties in translating the texts related to natural sciences. Different language pairs, the concept of translation and its related phenomena is a broad issue to analyse.

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## APPENDIX

### THE ANALYSIS OF TRANSLATION OF THE BOOK TITLES IN THE AREA OF NATURAL SCIENCES

WORD-FOR-WORD TRANSLATION		
	ORIGINAL	TRANSLATION
26.	Physics of the future: how science will shape human destiny and our daily lives by the year 2100	Ateities fizika: kaip mokslas 2100 m. keis žmonių likimą ir kasdienį mūsų gyvenimą
27.	Biology of belief	Tikėjimo biologija
28.	A primal of ecological genetics	Ekologinės genetikos pradmenys
29.	Cool chemistry. Great experiments with simple stuff	Nuostabioji chemija: nepaprasti bandymai paprastomis priemonėmis
30.	Essential chemistry: key laws and uses summarized	Chemijos pagrindai: pagrindiniai dėsniai ir jų taikymas
31.	Genetic roulette. The documented health risks of genetically engineered foods	Genų ruletė. Dokumentuoti genetiškai modifikuoto maisto pavojai sveikatai
32.	Cardiovascular disease: fight it with the blood type diet	Širdies ir kraujagyslių ligos. Įveikite jas pasitelkdami dietą pagal kraujo grupę
33.	The long summer: how climate changed civilization	Ilgoji vasara: kaip klimatas keitė civilizaciją
34.	This will change everything: ideas that will shape the future	Tai pakeis viską: idėjos, formuosiančios ateitį
35.	Sex and the evolution of human nature	Raudonoji karalienė: lytis ir žmogaus prigimties evoliucija
36.	Spontaneous evolution: our positive future (and a way to get there from here)	Spontaniška evoliucija: mūsų šviesi ateitis ir kaip ją pasiekti
37.	Spiritual spine healing. A new and unique health programme for your back	Dvasinis stuburo gydymas. Visiškai nauji ir išskirtiniai pratimai stuburui
38.	Health through balance: an introduction to Tibetan medicine	Pusiausvyra ir sveikata. Tibetiečių medicinos pagrindai
39.	Theta healing. Introducing an	Teta gydymas. Įvadas į unikalų energinio

	extraordinary energy-healing modality	gydymo metodą
40.	Advanced theta healing: harnessing the power of all that is	Teta gydymas pažengusiems: įvaldykite visko, kas yra, galią
41.	Clinical endocrinology and diabetes. An illustrated colour text	Klinikinė endokrinologija ir cukrinis diabetas
42.	Bad science	Apgaulingas mokslas
43.	Grand design	Didysis projektas
<b>SHIFTS</b>		
	<b>ORIGINAL</b>	<b>TRANSLATION</b>
44.	How to heal with color	Gydymas spalvomis
45.	The essential difference: male and female brains and the truth about autism	Esminis skirtumas vyriškosios ir moteriškosios smegenys. Visa tiesa apie autizmą
46.	Why there is something rather than nothing. A universe from nothing	Kitoks požiūris į visatos atsiradimą. Visata iš nieko
47.	Whole. Rethinking the science of nutrition	Visuma. Naujas žvilgsnis į mitybos mokslą
48.	13 things that don't make sense: the most baffling scientific mysteries of our time	13 protu nesuvokiamų dalykų. Mūsų laikų mokslo paslaptys
49.	Life ascending: the ten great inventions of evolution	Gyvybės triumfas. Dešimt didžiųjų evoliucijos išradimų
50.	Your inner fish: a journey into the 3.5-billion-year history of the human body	Žuvis tavyje: prieš 3,5 mlrd. metų prasidėjusi žmogaus kūno istorija
51.	The 7-day allergy makeover: a simple program to eliminate allergies and restore vibrant health from the inside out	Per 7 dienas į gyvenimą be alergijos. Paprasta programa, padedanti natūraliomis priemonėmis pašalinti alergijas ir susigrąžinti puikią sveikatą
52.	Soul mind body medicine: a complete soul healing system for optimum health and vitality	Sielos, proto ir kūno medicina. Visapusiška sielos gydymo metodika, padedanti būti sveikiems ir gyvybingiems
53.	Practical self sufficiency: the complete guide to sustainable living	Ekologinis ūkis: praktinis vadovas, kaip viską pasidaryti patiems
54.	Health through Gods pharmacy: advice	Sveikata iš dievo vaistinės: žolininkės

	and experiences with medical herbs	patirtis ir praktiški patarimai
55.	The herb and spice companion. A Connoisseurs guide	Vaistinių ir prieskoninių augalų žinynas
56.	The complete encyclopedia of chickens	Enciklopedinis žinynas. Vištos
57.	The usborne illustrated: dictionary of physics (the facts you need to know-at glance)	Iliustruotas fizikos žinynas. Čia yra viskas, ką vertėtų žinoti
58.	Being mortal. Medicine and what matters in the end.	Mirtingi. Medicina ir tai, kas ne mažiau svarbu
59.	A brief tour of higher conciousness: a cosmic book on the mechanics of creation	Kosminė knyga. Trumpa aukštesniosios sąmonės kelionė
60.	The holographic universe: the revolutionary theory of reality	Holografinė visata: viena visų nepaaiškinamų reiškinių priežastis