GRETINAMOJI KALBOTYRA/ CONTRASTIVE LINGUISTICS

The Role of Parallel Structure as a Cohesion Device in a Technical Text

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Abstract. The article analyzes cohesion as one of the fundamental properties of the textuality and parallel structures as the oldest and most common technique of cohesion. Parallel structures help to achieve grammatically, stylistically and in some cases lexically correct writing, because they adjusts the order of the words having similar meaning in the sentence. The parallel arrangement of words makes the structure clearer and the text becomes meaningful. There are five main situations where this linguistic device is used – structures with coordinating conjunctions, structures with correlative conjunctions, words in series, sentences incorporating function words, and comparisons and contrasts. Non-parallel structures refer to the sixth situation.

A number of researches have been carried out, both by foreign and Lithuanian scientists, focusing on the importance of parallel structures as a technique of enhancing the text cohesion. However, this issue has not been analyzed in technical texts yet. Articles on information technology and control from scientific magazines have been chosen for the research. In order to reveal the significance both of cohesion and parallel structures systemic analysis of scientific literature has been performed. Quantitative calculations have been used to identify the frequency of parallel structures in the texts, and a comparative analysis of parallel structures in the texts of the Lithuanian and English scientists – to interpret the results of the analysis.

***Key words**: cohesion; parallelism; parallel structures; technical text.*

Introduction

When creating an oral or written text, one of the essential tasks is to make the text comprehensible, meaningful and grammatically correct. To achieve this goal various means are used. One of the tools of text creation and development can be cohesion – a device enhancing the inner order of the text. If the text is not coherent its meaning will not be delivered to the reader or listener.

Cohesion is considered to be one of the important parts of the syntax and semantics, so the techniques of the cohesion should be identified and investigated. The parallelism is the oldest and most common technique of the cohesion. It is defined and understood in different ways. Two main considerations of parallelism dominate in linguistics: grammatical and rhetorical. Lithuanian authors (Gaivenis and Keinys, 1990; Mikolaitienė, 2000) mostly define parallelism as a rhetoric device, while English authors (Wyrick, 1990; Crews, 1987; Wilson, 1990) highlight it as a grammatical structure. Nevertheless, both considerations of parallelism distinguish its function to create the text cohesion.

The parallelism is not an isolated element of the cohesion. It has its own features, functions, and structure, which make it unique and vivid in any text. It can be expressed in different formulas, which are called parallel structures. There is a broad variety of parallel structures – single word, phrase, clause parallel structures, etc. Scientists discuss the necessary number and frequency of parallel structures in the text that could influence the quality of cohesion. The **problem** is how parallel structures tie the text and keep the text cohesion. This question has not been analyzed in technical texts yet. Taking into account the above, parallel structures as the expression of parallelism have been chosen for the investigation.

This analysis is carried out in order to identify the penetration of the parallel structures i.e. the frequency of the usage of the parallel structures in sentences of technical texts. The parallel structures are the **focus** of the analysis. These structures refer to the use of phrases, clauses, or sentences that are similar in structure or meaning.

The **aim** of this paper is to analyze parallel structures in various technical texts and to find out their impact on the strength of text cohesion.

In order to reach the aim the following scientific **methods** have been employed: systemic analysis of the scientific literature and comparative analysis of the texts of Lithuanian and English authors. Quantitative calculations have been used to reveal the frequency of parallel structures in the texts.

Cohesion and parallelism

Each text (oral or written) has some inner order which makes the text comprehensive, logical, informative, etc. Cohesion is one of the means enhancing that order in the text. It is the main factor in joining the parts of sentences or even two or more sentences. Cohesion is to make the two parts of the writing meaningful, as well as correct from a grammatical point of view.

It can be supposed, that the term *cohesion* in linguistics was started to be used due to its similarity of the technical

feature of cohesion, i.e. to join the parts of the sentence into the whole. Thus, in linguistics cohesion is meant to hold the text together, and it can be defined as a close relationship, based on grammar or meaning, between two parts of a sentence or a larger piece of writing (Longman Dictionary of Contemporary English, 2001). Halliday and Hasan (1976, p.5) stress that cohesion can be expressed partly by means of grammar and partly by means of vocabulary. According to these researchers cohesion is a part of the system of a language. When it is incorporated within a sentence structure, it is subject to certain restrictions because the grammatical condition of being a sentence ensures that the parts go together to form a text.

Referring to Halliday and Hasan, the function of cohesion is to relate one part of a text to another one in the same text. As a result, the continuity of the text is improved. Thus, cohesion enables a reader or listener to receive all the components of the text as a whole and to interpret the text more easily.

In Lithuanian linguistics, cohesion is defined as text connectivity. The international term *cohesion* is almost not used in the Lithuanian language. Lithuanian linguistics uses different terms, such as *valency*, *combinability*, and *means of binding*, *join*, etc. This fact could be interpreted in several ways, that Lithuanian scientists prefer Lithuanian terms to international ones and that the term *cohesion* implies a different notion and is at the primary stage of studies. This is an interesting consideration and needs deeper analysis.

Cohesion is a complex linguistic phenomenon consisting of different elements and guiding a reader through the text. Cohesive devices help readers follow a writer's train of thought by connecting key words and phrases throughout a passage. Halliday and Hasan (1976) present five types of cohesive devices in English: reference, substitution, ellipsis, conjunction, and lexical cohesion, whereas Daniel Kies (1995) indicates eight techniques to achieve cohesion and organize the text more easily while delivering the meaning of the text to the reader or listener:

1. *Repetition*. A word from the sentence A (the first of any two sentences) repeated in the sentence B (the second of any two sentences).
2. *Synonymy*. The usage of a synonym of the word wished to repeat when direct repetition is too obvious. This strategy is called 'elegant variation.'
3. *Antonymy*. Using the 'opposite' word, an antonym, can also create sentence cohesion, since in language antonyms actually share a lot of elements of meaning.
4. *Pro-forms*. The usage of a pronoun, pro-verb, or another pro-form to make explicit reference back to a form mentioned earlier.
5. *Collocation*. The usage of a commonly paired or expected or highly probable word to connect one sentence to another.
6. *Enumeration*. The usage of overt markers of sequence to highlight the connection between ideas. This system has a lot of advantages: (a) it can link ideas that are otherwise completely unconnected, (b) it looks formal and distinctive, and (c) it promotes a second method of sentence cohesion, discussed (7) below.
7. *Parallelism*. The repetition of a sentence structure. It is an important aspect not only in stylistics, but also in grammar, semantics and syntactic of sentences.
8. *Transitions*. The usage of a conjunction or conjunctive adverb to link sentences with particular logical relationships. (http://papyr.com/)

Cohesive devices and techniques are employed to organize the text and to maintain the meaning flow through the whole text. Each of them is used in different situations in order to achieve cohesion that makes the text into one completed unity.

As it has been mentioned parallelism is one of the cohesive elements that plays a certain role and carries certain functions. The repeated use of similar phrasing helps tie the ideas and sentences together (Wyrick, 1990, p.66). This definition reveals not only the main function of the parallelism, but the cohesion as well. It is aimed at uniting the text into one entity.

One of the widely used definitions of parallelism is putting similar ideas into similar structures and positions in sentences to make it easier to follow the writer's train of thought (www.sdstate.edu). In other words, the text is organized by placing words of the same part of speech as well as phrases and clauses in a parallel way. A writer usually pairs nouns with nouns, phrases with phrases, or clauses with clauses, for instance, *Betty likes to cook, clean, and decorate her house.* The example illustrates that the parallel structure of the sentence requires using parallel forms of words, i.e. the verbs in juxtaposition are used with verbs in the example, and the nouns are avoided here.

Parallelism can also be important in the stylistics of the text as it is a stylistic arrangement in which similar syntactic patterns repeat, thus allowing a reader or a listener to rely on the grammatical repetition to echo the logical similarity of the thought and thus improve the clarity and efficiency of the passage (Wilson, 1999, p.153).

Although Lithuanian linguists use the term parallelism as widely as English linguistics do, they emphasize the rhetorical consideration of parallelism. In the Lithuanian literature, the parallelism is an equal arrangement of similar parts of the text. It shows the relationships of the scenes or motives of the creation. Moreover, the parallelism is an equal syntactical organization of sentences (arrangement of the parts of sentences) in the neighboring sentences or in certain bigger parts of the text. The parallelism is frequent in Lithuanian folk songs, in fiction or journalistic (Gaivenis and Keinys, 1990, p.115). This definition clearly reveals the role of the parallelism in literature.

Parallelism is one of the most important devices in creating and organizing the text. It makes the text coherent and definite as the equal parts of sentences are placed in the parallel way. Furthermore, parallelism helps to achieve grammatically, stylistically and in some cases lexically correct writing, because parallelism adjusts the order of the words having similar function in the sentence.

The parallelism can be expressed in different formulas, which are called parallel structures. The significance of this cohesive device can be explained as follows. Firstly, parallel structures are important in writing, because they can help not only to form shorter and more logical sentences but they can also make the text more economical, i.e. they help to avoid multi-wording in a text. Secondly, the parallel arrangement of words makes the structure clearer and the text becomes meaningful. Thirdly, the equability of the text is especially important by juxtaposing the words or phrases, in other words, the parallel structures can be considered one of the main ways to achieve equability. Finally, the parallel structures help with appreciation of the text as it assumes the correct and suitable form (http://www.towson.edu).

A parallel structure helps to achieve not only a clear meaning of the writing, but desirable symmetry of the text. The parallel structure joins and emphasizes equally important ideas. When two elements of a sentence are similar in meaning, they should be expressed in parallel form or all linked words should match in form.

The following table presents possible parallel structures and illustrates the patterns by the given examples.

Table 1. Parallel structures (according to http://www.towson.edu)

PATTERN	**EXAMPLE**
either ***x*** or y	either ***boxing*** or ***wrestling***
neither ***x*** nor ***y***	neither ***tennis*** nor ***racquetball***
not only ***x*** but also y	He not only ***sleeps soundly*** but also ***snores loudly.***
Let me ***x*** and ***y.***	Let me ***smile with the wise, and feed with the rich.*** (Samuel Johnson)
It matters not ***x*** but ***y.***	It matters not ***how a man dies,*** but ***how he lives.*** (Samuel Johnson)
The ***x's*** are wiser than the ***y's***.	***The tigers of wrath*** are wiser than ***the horses of instruction.*** (William Blake)
It is more blessed to ***x*** than ***y.***	It is more blessed ***to give*** than ***to receive.***
Do you promise to ***x, y,*** and **w?**	Do you promise to ***love, honor,*** and ***cherish!***
I write entirely to find out ***w, x, y,*** and ***z.***	I write entirely to find out ***what I'm thinking, what I'm looking at, what I see,*** and ***what it means.*** (Joan Didion)

In the left column of the table the patterns of the parallel structures are illustrated. The letters in bold (*x, y, w, z*) indicate the elements of a sentence, which are used in a parallel form: nouns are used with nouns, clauses with clauses, phrases with phrases etc. In the right column of the table the examples of using a certain parallel structure are presented. The words in bold coincide the meaning of the letters in bold presented in the left part of the table. However, the most important are conjunctions and phrases (presented in Table 1) which connect the words and indicate the necessity of parallelism usage.

Particular situations require the use of parallel structures. There are five main situations where parallel structures are used:

1. **Coordinating conjunctions** (and, or, but, for, so, yet, or nor). Coordinating conjunctions connect two or more clauses, phrases, words, or other structures with equivalent status (Biber et al., 2002, p.456):

   *Jane Eyre wants financial **independence** and **love**. Jane Eyre wants **to achieve** financial independence and **to find** love.*

   In the first sentence the parallel structure is used, because the words in bold mach in form (noun+noun), in other words, both of them are nouns. The second example presents verbs which are written in a parallel form (verb+verb). Thus, coordinating conjunctions help to join parallel forms and can be a signal of using parallel form. Correlative conjunctions have the same function.

2. **Correlative Conjunctions.** Correlative conjunctions are a combination of two or separated words used to signal the relationship of coordination (Biber et al., 2002, p.456). Correlative conjunctions are presented by:

   - either A or B
   - neither A nor B
   - both A and B
   - not only A but also
   - whether A or B

   The given pattern reveals the cases of the usage of conjunctions. The letter A illustrates the first part of the sentence which is joined with the second part of the sentence (marked by the letter B). The two parts of a sentence are joined with the mentioned correlative conjunctions.

   Therefore, the linked parts of the sentence must be parallel in form (noun+noun, phrases+phrases and ect), e.g.:

   *In Hemingway's "Cat in the Rain," we do not know whether **the husband sees the original cat**, or **he sees a new one**.*

   The example illustrates, that despite of the different words linked with the correlative conjunction, the form of the words is not changed.

3. **Words in a series.** Parallel structures are very common in words in series or word lists. The examples below of two sentences reveal the incorrect and correct versions of the usage of the parallel structures. The first example is incorrect in terms of the parallelism. The correct usage of a parallel structure in words in a series or in word lists requires the same forms of the words which are listed or presented in series. The rehabilitated example reflects a correct usage of the parallel form. Correlative conjunctions and coordinating conjunctions, as well as words in a series inform the writer about the necessity of a parallel structure. Parallel structures should not take additional words, belonging to different parts of speech.

   Outlaw: *Throughout* The Diviners, *Laurence uses memory bank movies, lists, songs, and **some inner films***.

   Rehabilitated: *Throughout* The Diviners, *Laurence uses memory bank movies, lists, songs, and inner films*.

The parallel structure is an issue not only in recitation, but also in comparisons and contrasts. The parallel structures are required while talking about two or more different or similar things.

4. **Comparisons and contrasts** using than or as (i.e., more than, as much as).

> Outlaw: *Joan **does not like** Chuck Brewer as much as she **seemed to like** the Royal Porcupine.*
>
> Rehabilitated: *Joan **does not like** Chuck Brewer as much as she **likes** the Royal Porcupine*.

The first example illustrates the incorrect usage of comparisons. When two or more contrasting ideas are presented, they also have to be parallel form.

Finally, the last category which requires parallelism is *function words*. Function words are words that express grammatical relationship and classifications such as determiners, conjunctions and prepositions (Biber et al, 2002, p.457). When these words are used in a sentence, they have to be used in parallel structure.

5. **Function words:**

- prepositions (to, by, in, for);
- articles (a, an, the);
- the infinitive (to);
- introductory words (that, who, which, because, when).

A function word that begins one clause must begin the other ones, for example:

> Outlaw: *Rohinton Mistry often writes about **the** Indian immigrant experience and Parsi community*.
>
> Rehabilitated: *Rohinton Mistry often writes about **the** Indian immigrant experience and **the** Parsi community. or Rohinton Mistry often writes about Indian immigrant experiences and Parsi communities* (http://ace.acadiau.ca).

These examples illustrate that if an article is used in one case of the sentence, it has also to be used in the parallel case of the sentence. Not only articles, but also prepositions, infinitive and introductory words such as *that, who, which* are to be used in parallel structures. The parallel usage of function words makes the sentence balanced and rhythmical.

All cases of the parallel structures should meet the rules of usage of the parallelism. On the other hand, almost every rule and structure has some deviations and inaccuracies. In case of parallelism such a deviation can be represented by non-parallel or faulty structures, i.e. any wrongly written parallel structures. *The faulty parallelism* occurs when the elements put into pairs and series "go into different directions" because they do not have the same form (www.sdstate.edu/).

The faulty parallelism can appear in many forms; however, three most common types are distinguished: faulty pairs, shifted series, and “and who” or “and which” constructions. These three types are especially harmful in writing because they are very common and often considered as correct cases. Any text comprising any type of faulty parallelism affects the reader negatively. The faulty parallelism distracts the reader and disturbs the flow of the writing **(**http://ace.acadiau.ca).

Faulty pairs are the two unequal elements of the sentence joined together, e.g.:

> *Few people were aware of **his fear** or **how unhappy he was.***

The coordinator *or* joins the two groups of words (in bold) which makes faulty parallelism. To make the sentence parallel, it is necessary to use equal pairs, i.e. noun has to be joined with noun or noun clause has to be joined with noun clause, e.g.:

> *Few people were aware of **his fear** or **his deep unhappiness**.*
>
> *Few people were aware of **how much fear he felt** or **how unhappy he was**.*

Shifted series are recitations of unequal words joined by the coordinator in the end, e.g.:

> *Many students take up a sport for **fun**, **relaxing**, and so **they can lose weight**.*

This sentence presents the usage of series of unequal words, i.e. the noun *fun* is used together with ing-form *relaxing* and with clause *they can lose weight*. Words which are used in series for the recitation have to be in the same form. The correction of the faulty sentence could be, e.g.:

> *Many students take up a sport **to have fun**, **to relax**, and **to lose weight**.*

The “and who” or “and which” constructions are used to join a subordinate clause of a sentence. Unfortunately, the incorrect subordination using these constructions is common, e.g.:

> *Mary is a person **with great creativity** and **who should be asked to help with the program***.

In this sentences the coordinator *and* is used together with subordinator *who* and both of them incorrectly join the phrase *with great creativity* with the clause *who should be asked to help with the program*. In order to correct the sentence no parallelism could be used by subordinating the two parts of the sentence, e.g.:

> *Mary is a person with great creativity **who** should be asked to help with the program.*

The parallel connection is employing equal parts of the sentence, i.e. verbs are joined with verbs or clauses with clauses, e.g.:

> *Mary is a person with great creativity **and** she should be asked to help with the program.*

The two clauses (in bold) are connected by the coordinator *and* (www.sdstate.edu).

To sum up, faulty parallelism has to be avoided by putting the word in the similar form when coordinating them and seeking to achieve cohesion in the text. The faulty parallel structures could be avoided when coordinating single words with the same part of speech; furthermore, when coordinating phrases the same types of phrase are used; and finally, when coordinating clauses they should be of the same type.

The theoretical analysis of the cohesion and the parallel structures reveals the interdependence of these two phenomena. The empirical analysis can validate or contradict this interdependence. The above considered five main groups of

parallel structures (coordinating conjunctions, correlative conjunctions, words in series, function words and comparisons and contrasts), as well as non-parallel structures referring to the sixth group have been chosen as a focus of the analysis of this study.

Parallel structures in a text

The English language is already considered to be the universal language all over the world; however, probably any foreigner could never use the language as fluently as a native speaker does. So, the choice of any stylistic or grammatical structures could vary in the Lithuanian and English texts. This assumption has become the object of this research.

With reference to the basis of the concept of a parallel structures an empirical data review consisting of quantitative calculations and comparative analysis has been carried out.

Quantitative calculations refer to the estimation of the amount of the selected and grouped parallel and non-parallel structures according to the five situations (in percents). The non-parallel structures were assumed to be the sixth situation. The percentage was counted in two aspects:

1. Percentage of the penetration of the five main situations;
2. Percentage of the penetration of each situation separately.

The analysis emphasized the most frequent and the rarest parallel structures. The results of the quantitative calculations were compared, employing comparative analysis.

Comparative analysis is used to consider quantitative and qualitative results, as well as to estimate basic data of review. This methodology is particularly relevant when analyzing comparable data (penetration rate of parallel structures in texts, developed by Lithuanian and English authors in our case). Three strategies are used in comparative methodologies: illustrative comparison, complete or universe comparison, and sampled-based comparison. Illustrative comparison is the most common form of comparative analysis, where items are used as examples to explain or exemplify phenomena found in different units. The second strategy is complete or universe comparison, in which all elements of the domain within the study, defined geographically or topically, form the units of comparison. Finally, sampled comparison strategically delimits part of the whole, with the goal of selecting data that are statistically representative of the variations within the whole and are intended as the basis for statistical generalizations (Smelser, 1976, p.67). The analysis employed all the strategies of the comparative analysis.

After the penetration frequency of the parallel structures is counted, it is compared among the five situations, among the elements of each situation and between the English and Lithuanian articles. The analysis aims at finding out the dominating parallel structures and at comparing their usage between the texts of native and nonnative speakers.

The scientific **journals** used for the research have been chosen randomly. The periodical journal "Information Technology and Control" published by Kaunas University of Technology is one of the selected journals. The other journals selected for the analysis are published in the ISI Master Journal List, as well.

The analyzed **articles** have been chosen as a corpus of the analysis according to an objective sampling, i.e. the scientific area (information technology and control) and nationality of the authors are the main criteria of the sampling. Five articles are written by the Lithuanian authors and five articles - by the English researchers.

The Lithuanian texts comprise 24 pages (12767 words) and the English texts consist of 39 pages (25255 words). The difference in the scope of the texts is not important, since the findings have been presented in a percentage form.

The **technical texts** used for the analysis are of the academic register; however the technical writing has its particularities. The text may contain definitions of technical terms, descriptions of products, instructions and examples. In most cases, the text is accompanied by graphics, tables or illustrations (http://www.angelfire.com/). In order to convey the information technical texts have to be coherent. Consequently, various techniques of the cohesion have to be used including parallelism.

Analysis of parallel structures in a technical text

The parallel structures of the five situations are found in both Lithuanian and English authors' texts. **Words in series** are the most common category of the parallelism in all texts. Table 2 reveals the penetration of parallel structures in the texts. It becomes obvious that the general percentage of structures in the texts is rather high, but the distribution of specific parallel structures differs.

Words in series are list of words or phrases combined by the coordinator at the end. Words in series comprise 36% of all parallel structures found in all analyzed texts, e.g.: *processing, storing, retrieving **and** editing*.

Table 2. Penetration of parallel structures

Parallel structures	***Coordinating conjunctions***	***Correlative conjunctions***	***Words in series***	***Comparisons and contrasts***	***Function words***	***Faulty parallel structures***
In the English texts	22%	12%	35%	5%	24%	2%
In the Lithuanian texts	23%	5%	36%	6%	28%	2%
Overall penetration	22%	9%	36%	6%	25%	2%

Technical specification of texts and the systemized writing are supposed to be the main factor of the frequency of words in series. The analyzed texts contain a lot of charts and diagrams where the systemized explanations are necessary and the word lists help to express the information in a coherent way.

Words in series comprise 36% of all used parallel situations in the texts of Lithuanian authors, which is only 1% higher than in the texts of English authors. This could be mostly determined by the same trend, specification and register of the analyzed texts.

Faulty parallel structures comprise only 2% of all the analyzed parallel structures (see Table 2). The largest proportion of the faulty parallel structures (86%) is formed by the shifted series. Faulty pairs make up the remaining 14%. Due to the fact that faulty parallelisms are considered to be the incorrect usage of a parallel structure, the texts of academic writing contain only a few of them, e.g.:

> *who were people oriented, service oriented and* ***valued the preservation of knowledge of the past****.*

The faulty parallel structures comprise the same percentage (2%) in Lithuanian and English texts.

Coordinating conjunctions are the simplest conjunctions that connect parts of a sentence. They join words, phrases or clauses which have the same grammatical function in the sentence. They are simple to use and occur frequently in every discourse. The analyzed texts prove this fact as well. Coordinating conjunctions used in parallel form mark the cohesion dominating in sentences and in the whole text. They include *for, and, nor, but, or, yet, so*; however, the analyzed texts contain only four coordinating conjunctions (*or, but, so, and*) used in parallel structures. The most common coordinating conjunction in parallel structures in both English and Lithuanian texts is *and*, e.g.:

> *around 20% for receiving* ***and*** *playing voice data* ***and*** *around 4% for the recording* ***and*** *sending voice data*.

The overall penetration of the coordinating conjunction *and* make up 83% of all coordinating conjunctions, used in parallel structures (for comparison, *or* is used in 13% of cases, and *but* and *so* are used in 2% of cases each). Moreover, in the parallel structures the Lithuanian authors use only coordinating conjunctions *and* and *or*, while the English authors employ *and, so, but* and *or*.

When analyzing the usage of coordinating conjunctions in the parallel structures among the other aforementioned situations, it has been found that these conjunctions comprise a high number of all the parallel structures in the analyzed texts as 22% of coordinating conjunctions used in parallel form are found (see Table 2).

Coordinating conjunctions are common for both Lithuanian and English languages, so the percentage of their parallel usage is also very similar. Parallel structures with coordinating conjunctions comprise 23% in the texts of Lithuanian authors and 22% in the texts of the English (see Table 2).

The most obvious difference of the usage of parallel structures in Lithuanian and English texts is reflected by **correlative conjunctions** (*either A or B, neither A nor B, both A and B, not only A, but also B, B whether A or B*). Correlative conjunctions are used to form grammatically equal pairs; however, the meaning is particularly the same as it would be with a simple coordinating conjunction, but there is an additional degree of emphasis.

The analyzed texts contain all the mentioned correlative conjunctions in spite of the correlative conjunction *neither A nor B*. The most common correlative conjunction according to the overall penetration (64%) is the coordinator *both A and B*, e.g.: ***both*** *Library Science* ***and*** *Information Science*.

On the other hand, in English texts this correlative conjunction is much more common (75%) than in Lithuanian texts (17%). Figure 1 discloses this difference in usage. The Lithuanians more often avoid the emphasis of the equality of two items and join them by using the unmarked coordinator *and*.

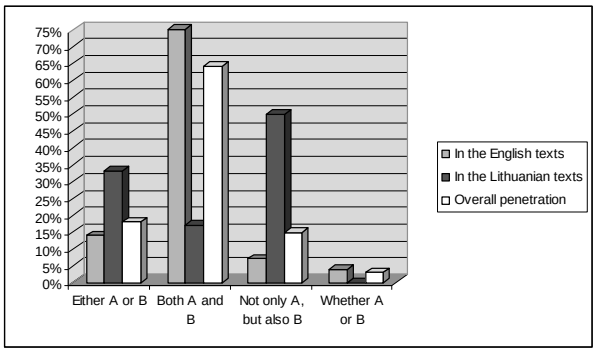

Figure 1. Penetration of correlative conjunctions used in parallel structures

The correlative coordinator *not only A, but also B* is the most common in Lithuanian texts (50%), as comparing to the other correlative conjunctions it has the equivalent in the Lithuanian language (*ne tik A, bet ir B*). This fact can be supposed to be the main factor of the frequency of the correlative coordinator in the Lithuanian texts. In the English texts the coordinator *not only A, but also B* is not a dominating one because it comprises only 7% of all the correlative conjunctions found in English texts.

The rarest correlative conjunction is the conjunction *whether A or B* in all the analyzed texts. The use of this conjunction comprises only 4% of all correlative conjunctions in the English texts. There are no correlative conjunctions *whether A or B* in the Lithuanian texts. The overall penetration of the coordinator is 3% of all correlative coordinators (see Figure 1).

When comparing the usage of correlating conjunctions in the parallel structures to other aforementioned situations, it has been established that correlative conjunctions comprise significantly smaller proportion of the parallel situations than coordinating conjunctions. Correlative conjunctions make up only 9% of all parallel structures found in the analyzed texts.

Correlative conjunctions make up 5% of all the parallel structures used in the texts by the Lithuanian authors. This is less than half the number of parallel structures of correlative conjunctions used in the texts by the English authors (12% of all the parallel structures in the texts by native English authors). The fact that correlative conjunctions are particular pairs of conjunctions, which are not usual in the Lithuanian language, could determine the rare usage of such structures in the texts written by Lithuanian authors.

Function words form an important part of the English language adding mainly grammatical information; however, only prepositions from all of the analyzed function words

are common in the Lithuanian language, as well. Thus, the differences of the parallel usage of function words in Lithuanian and English texts are inevitable. The analysis includes the following categories of function words: prepositions, articles, infinitive and introductory words. Table 3 distinguishes the distribution of coordinating conjunctions in the articles of the Lithuanian and English scientists.

Table 3. Penetration of coordinating conjunctions used in parallel structures

Function words	***The infinitive***	***Prepositions***	***Articles***	***Introductory words***
In the English texts	5%	11%	72%	3%
In the Lithuanian texts	17%	20%	72%	0%
Overall penetration	10%	17%	71%	2%

Articles used in the parallel structures comprise the major part (71%) of all the function words which are used in parallel form in all the analyzed texts. I**ntroductory words** are the rarest in parallel structures (2%). In fact they are used only by the native English authors. **Prepositions** in parallel structures occur more often in the Lithuanian authors' texts (20%) than in the English ones (11%). The parallel used **infinitive** is more often in the Lithuanian authors' texts (17%) than in English (5%), as well.

During the analysis of the usage of function words in parallel structures among other aforementioned situations, 25% of parallel function words are found in the analyzed texts (see Table 2). This is quite a high number as compared with the other types of parallel structures.

Function words used in the parallel structures are a very common phenomenon in both the texts of the Lithuanian authors and the texts of the English authors. Parallel usage of function words comprises 28% in the texts written by Lithuanian authors, and 24% in the texts written by the native English authors. Although in the Lithuanian language the endings of words express grammatical relationships with other words and function words operate in the same way in English, the Lithuanians more often use function words in parallel structures than the English writers do. The absence of function words in many cases is not a mistake, as native speakers more often use ellipses instead of function words. On the other hand, parallel usage of function words strengthens the ties of the cohesion of the text and makes it more accurate.

Comparisons and contrasts help to develop discourse and to emphasize the differences or similarities of a particular object. Parallel usage of comparisons and contrasts also helps to create the cohesion of the text. In the English language words or phrases (*as well as; than; the A, the B; otherwise; likewise*) connecting grammatically equal words, phrases or clauses are used to highlight differences and similarities.

The most similar penetration of comparisons and contrasts in both English and Lithuanian texts is reflected by *as well as*. This connector comprises 38% of all comparisons and contrasts in the English texts, as well as in the Lithuanian texts. The overall penetration of *as well as* comprises 37%, which is the highest overall penetration of all comparisons and contrasts. The connectors *as, likewise* and *otherwise* are found only in the English texts (8%) and each of them comprises 5% of all the comparisons and contrasts used in the analyzed texts. Figure 2 reveals the quantitative distribution of comparisons and contrast used in the parallel structures.

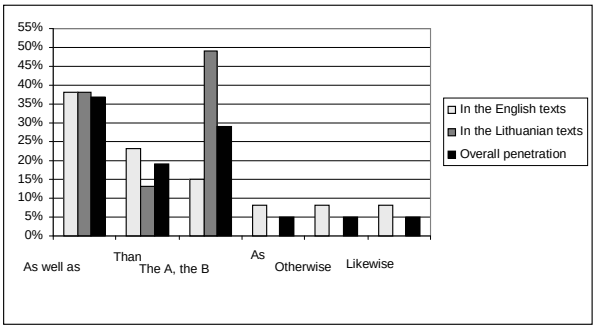

Figure 2. Penetration of comparisons and contrasts used in parallel structures

In comparison to other situations of parallel structure usage this category comprises only 6% of all the parallelisms (see Table 2). Comparisons and contrasts used in parallel structures are not common phenomenon in the texts written either by the Lithuanian authors or by the English authors. The usage of comparisons and contrasts is mostly determined by the subject and tone of the text. So, if the text is presentational and not comparative the frequency of the comparisons and contrasts is low.

To conclude, the Lithuanian and English texts in the sample contain 369 cases of parallel structures, i.e. about 5.9 parallelisms per page. All the main situations of the usage of parallel structures, as mentioned in the theoretical background, have been found in the analyzed texts. The similar usage of the parallel structures in both the texts written by the Lithuanian and English authors is dominating. Every parallel situation is a part of the text cohesion. It clearly joins ideas, words or grammatical structures.

Conclusions

- The faulty parallel structures are the least frequent parallel structures in the analyzed texts (2%). Faulty parallel structures disturb the reader's attention and affect negatively the cohesion of the whole discourse.
- There are five main situations where parallel structures are used: comparisons and contrasts, coordinating conjunctions, correlative conjunctions, function words and words in series. The most frequent situation of all the parallel structures in the analyzed texts is *words in series*, making 36% of all the situations. The least frequent situation of the parallel structures is comparisons and contrasts (6%).
- Correlative conjunctions in parallel structures are used more often in the English texts (12%) than in the Lithuanian texts (5%). The same scientific field, specification and register of the analyzed texts appear to be the main factors of such distribution. The particularities of the native languages of the authors determine the differences.

- The coordinator *and* is the most frequent (83%) in the analyzed parallel structures. The rarest coordinators are *but* (2%) and *so* (2%), which are found only in the texts written by the native English speakers.
- Articles are the most frequent (71%) of all the function words in the parallel structures of the analyzed texts. Introductory words are the rarest category (2%) used in a parallel structure and are used only in the English texts. Due to the parallel usage of introductory words the texts of the English authors contain the aspects of emphasis and imagery, which enrich the discourse.
- Correlative conjunctions vary and are more usual in the texts of the English authors (5%) than in the texts of the Lithuanian authors (12%). The parallel structure with correlative conjunction *both A and B* is the most common (64%) in the analyzed texts. The rarest parallel structure with correlative conjunction is the structure with *whether A or B* (3%). The technical field of the texts predetermines the usage of the correlative conjunctions, as they do not require emphasis which correlative conjunctions convey.
- The most common conjunction of comparisons and contrasts is *as well as* (37%) in all the analyzed texts. The presenting tone of the analyzed technical texts is considered to be the main factor of the absence of comparisons and contrast in the parallel structures.
- Parallel structures systematize the text, improve the logics of sentences and make language more fluent. Consistency, wholeness and symmetry of the text created by the parallel structures strengthen the text cohesion in a greater extent and give the text more accuracy.

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Audronė Poškienė

Paralelios struktūros kaip kohezijos priemonės vaidmuo techniniame tekste

Santrauka

Paraleli struktūra yra viena iš paralelizmo sudedamųjų dalių, paralelizmo išraiškų, kuri yra viena iš kohezijos priemonių. Pasirinkti du mokslinių tyrimų metodai: kiekybiniai skaičiavimai; lyginamoji analizė.

Kiekybiniai skaičiavimai – tai išrinktų ir sugrupuotų į penkias pagrindines situacijas (sujungiamieji jungtukai, koreliatyviniai jungtukai, žodžių seka, panašumai ir skirtumai, funkciniai žodžiai) paralelių struktūrų skaičiavimas. Analizei atsitiktiniu būdu buvo pasirinkti moksliniai žurnalai: „Informacinės technologijos ir valdymas", leidžiamas Kauno technologijos universiteto. Tekstai analizei buvo pasirinkti tikslinės atrankos metodu.

Artikeliai, vartojami paraleliose struktūrose, yra patys dažniausi visuose analizuojamuose tekstuose (71%). Rečiausi paraleliose struktūrose yra įžanginiai žodžiai (2%). Prielinksniai paraleliose struktūrose yra dažnesni lietuvių autorių tekstuose (20%) nei anglakalbių tekstuose (11%). Sujungiamieji jungtukai – dar viena paralelių struktūrų vartojimo situacija. Lietuvių autoriai paraleliose struktūrose vartoja tik *and* (83%) ir *or* (17%) jungtukus. Anglakalbiai autoriai paraleliose struktūrose vartoja keturis jungtukus: *and* (79%), *so* (4%), *but* (4%) ir *or* (13%). Paraleliose struktūrose dažniausiai vartojamas koreliatyvinis jungtukas yra *both A and B* (64%), o rečiausiai – *whether A or B* (3%). Analizuotuose tekstuose jungtuko *neither A nor B* paraleliose struktūrose nerasta. Paraleliose struktūrose dažniausiai pasitaikanti frazė yra panašumus pabrėžianti frazė *as well as* (37%), rečiausi yra *as, otherwise* ir *likewise*, sudarantys tik po 5% visų panašumus ir skirtumus pabrėžiančių žodžių. Jungtukas *as well as* dažnai yra tapatinamas su sujungiamuoju jungtuku *and*, todėl jo vartojimas yra dažnesnis.

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