

# **Linking Adverbials in EFL Undergraduate Argumentative Essays: A Diachronic Corpus Study**

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## **1. Introduction**

Formulating one's opinion on a particular topic often requires reflection, logical thinking, careful lexical selection and the consideration of the audience. If this is done in a formal setting or in writing, the text needs to be well-planned and coherent. In order to help the listeners and readers follow the authors' line of thinking, the semantic and textual relationship between ideas and units of texts need to be signaled. An important part of learning to write in a second language is to acquire the appropriate use of rhetoric structures and linking devices. While some of these are learned early, they may cause problems even for advanced writers due to similar forms or meanings, linguistic transfer or the small repertoire of linking devices at disposal. Lists of linking adverbials with their functions, dictionary definitions and even sample sentences may not guide the language learner and user about which word or phrase best fits the given purpose or with which they should enlarge their productive vocabulary.

While a growing body of literature has investigated the linking devices of L2 texts of learners with various backgrounds, little has been empirically documented about how students of English in Hungary or Central Europe connect their textual chunks in essays and other academic texts (Chitez, 2014; Čurković-Kalebić, 2009; Tankó, 2004). The present paper aims to fill this gap by offering a diachronic comparison of two parallel corpora of argumentative essays written by third-year students at a large Hungarian university. It investigates the frequency and function of linking adverbials and their possible differences in essays written in recent years and those produced some years earlier. The study is both quantitative and qualitative, and also corpus-driven and corpus-based as, on top of the frequency check of a pre-selected list of adverbial connectors, it also discusses how some items from the most frequent ones are used in context and what semantic function they have in the essays.

## 2. Background to the study

The terms signaling words and phrases that link clauses and sentences into coherent texts are numerous. Broader groups of words in linking functions are referred to as ‘connective adjuncts’, ‘connectives’, ‘linking adjuncts’, ‘logical connectors’ and ‘logical connectives’, all of which include adverbials and coordinating and subordinating conjunctions (Chen, 2006; Crewe, 1990; Granger & Tyson, 1996; Halliday & Hasan, 2014; Liu, 2008). More restricted groups of linking devices that function as adverbials are called ‘conjuncts’, ‘conjunctive adverbials’, ‘connective adverbs’, ‘adverbial connectors’ and ‘linking adverbials’ (Anderson, 2014; Liu, 2008; Garner, 2013). Linking adverbials (e.g., *on the other hand*, *moreover*, *finally*) can be defined as adverbials that help to connect two units of discourse by signaling the semantic relationship intended by the author and which, therefore, help to strengthen the cohesion of a text. They differ from conjunctions (e.g., *and*, *or*, *but*) for their function of showing this semantic relationship between units (Biber, Johansson, Leech, Conrad & Finegan, 1999; Biber, Conrad & Leech, 2002). In the present article the term ‘linking adverbial’ is adopted as being the most commonly researched group of linking devices in recent literature.

Research on connectors and linking adverbials (LAs) has mainly focused on the over- and underuse of these elements by non-native speakers compared to native authors (Leńko-Szymańska, 2008; Tazegül, 2015; Yeung, 2009). Other than simply concentrating on the relative frequency of individual connectors, studies have also called attention to the misuse of linking devices. Novice L2 writers misuse linking adverbials either because they do not understand the semantic properties of certain adverbials, or because they are not aware of the stylistic restriction of the connectors. Inappropriate syntactic positioning of some linking adverbials has also been reported. It is often the case that L1 thinking and text organization is transferred into L2 writing. Studies have addressed texts written by different L1 writers, concentrating mostly on one local group of learners (Chinese in Lei, 2012; Japanese in Narita, Sato & Sugiura, 2004; Taiwanese in Chen, 2006; Pakistani in Jameel, Mahmood, Hussain & Shakir, 2014; Swedish in Altenberg & Tapper, 1998; Croatian in Čurković-Kalebić, 2009; Hungarian in Tankó, 2004) or on a mixed group (Anderson, 2014; Shea, 2009).

Studies have also indicated that the explicit teaching of connectors may lead to their misuse, over- and underuse (Leedham & Cai, 2013; Leńko-Szymańska, 2008; Liu 2013). Those that are marked as important may be overused, while those indicated as problematic, underused. Many teaching materials are intuition- rather than corpus-based, therefore not reflecting the real use of connectors either by local learner groups or other native or non-native writers. Anderson (2014) stresses how useful it is to conduct small-scale, classroom-based corpus research so that instructors have a clearer picture about general tendencies of writing of students in the given educational context.

While it is a widely held belief that the quality of text is closely tied to a greater number of connectors, Shea (2009) reports that words per T-unit

measures do not correlate with the use of connectors in her corpus of undergraduate non-native argumentative essays. The author also suggests that the perceived quality of text by readers may not depend so much on the conjunctive adverbial use. Others, however, have found relationship between connector use and text processing, namely that the explicit marking of the semantic relationship between units of a text speeds up processing (Cain & Nash, 2011; Sanders & Noordman, 2000). Shaw (2009) points out a paradox, namely that while the quality of test essays and the use of a higher number of connectors are linked, in more academic genres, such as research papers, fewer linkers are used by more professional authors. Not only genres, but also disciplines have varying use patterns of linking devices. Peacock (2010) compared research articles in eight disciplines and found that “linking adverbials are more important in RAs as signaling and cohesive devices, and for helping RA authors construct and strengthen claims, than previously thought by experts in this field” (p. 9).

It is also very often the case that inexperienced or lower-level L2 students write for surface logicity. The use of a number of frequent connectors gives the impression that their essay is well-planned and coherent, while, in reality, may only be built around a general textual skeleton. Tankó (2004) in his Hungarian argumentative essay corpus found a high number of enumerative (*first, second, third*) and additive (*also, moreover, furthermore, in addition*) adverbial connectors. He concluded that “[t]he writing of Hungarian students is characterized by the presentation of highly structured contrastive set of ideas arranged cumulatively” (Tankó, 2004, p. 171). In general, he documented twice as many connectors in the learner corpus as in the parallel native corpus. This is in line with other studies that have found an excessive use of certain adverbial connectors in learner texts compared to those produced by native speakers (see e.g., Yeung, 2009; Tazegül, 2015; Vinčela, 2013). Nevertheless, it is important to point out the methodological complexity of finding closely-matching native-speaker base corpora of similar size, genre, topic and the difficulty of drawing conclusions based on data coming from these. Also, it is questionable to what extent non-natives should follow native norms and how much the explicit teaching of LAs reflects native use, as has been discussed above.

The present study addresses the question of linking adverbial use in the argumentative essays of Hungarian students of English. Rather than looking at native versus non-native differences, it offers a diachronic comparison of the usage patterns of two similar student corpora written with at least 6 years apart. This provides the opportunity to investigate whether there are marked differences in the writing of students in past and recent years. A previous study using the same corpora revealed similar general lexical richness figures, but more variation in the recent corpus (Doró, 2015). It was argued that these results partly reflect the growing diversity in the student populations entering higher education while the general parameters of texts written under the same conditions have remained the same. The present study takes this diachronic comparison further and, after providing overall scores for the 100 essays, also analyzes whether there have been changes in the linking adverbial use over the

years. It is also investigated whether syntactic and semantic misuse is evident in the case of the most frequently occurring LAs or those that are usually problematic for Hungarian learners of English (e.g., *however*, *on the other hand*).

### 3. Methods

#### 3.1 Corpora

A total of 100 argumentative essays were compiled for the study, written by English Studies students at the end of their third year in a Hungarian university in timed, exam conditions (320-350 words each, approx 35,000 running words). The corpus is divided into two sub-corpora of essays, each containing fifty texts, approximately 17,500 words. The essays in corpus A were written in 2006 and 2007, while the corpus B essays come from 2013 and 2014, therefore the time gap between the two sets of compositions was at least 6 years. This provided a basis for the diachronic comparison.

#### 3.2 Items searched for, taxonomy and method

Following a corpus-based method, a list of linking adverbials compiled by Liu (2008), and also used by Lei (2012), was the starting point of analysis. The list contains 110 items (sometimes variations of similar items such as *first/firstly*) categorized into four main types of linking adverbials, each containing two to four sub-categories as follows:

1. **Additive:** emphatic, appositional/reformulation, similarity comparative (e.g., *also*, *moreover*, *in addition*);
2. **Adversative:** proper adversative/concessive, contrastive, correction, dismissal (e.g., *however*, *in contrast*, *on the contrary*);
3. **Causal/Resultative:** general causal, conditional causal (e.g., *because of this*, *as a result*, *therefore*);
4. **Sequential:** enumerative/listing, simultaneous, summative, transitional to another topic (e.g., *first of all*, *at the same time*, *in conclusion*).

As Liu (2008) and Lei (2012) explain, this taxonomy was based on those of Celce-Murcia & Larsen-Freeman (1999) and Quirk, Greenbaum, Leech and Svartvik (1985), then checked against the British National Corpus (for more detail refer to Liu, 2008, pp. 494–497). In the present paper *first/firstly*, *second/secondly* and *third/thirdly* are treated as separate elements to see which ones are used more often, making it to a 113 item list of LAs.

The corpus was searched for all the items on the preselected list using the AntConc concordancing software (Anthony, n.d.). The number of occurrences was registered for the two corpora separately for later comparison. The concordance lines were manually checked and the contexts carefully read to

exclude cases in which the selected items were not adverbial or metadiscoursal (for example when *first*, *second* and *so* were used as phrase modifiers).

## 4 Results and Discussion

The results are first discussed for overall frequency of linking adverbials in the corpus, then for their semantic distribution. Particular attention is given to the similarities and differences in the two corpora. Corpus A refers to the earlier essays and Corpus B to the more recent texts.

### 4.1 Overall frequencies of linking adverbials

In our corpus of 100 essays, linking adverbials appeared 862 times. The two corpora have an almost identical number of LAs, reaching 437 in Corpus A and 425 in Corpus B. This means 8.6 linking adverbials per essay on average and equals to 246 tokens by 10,000 words. This figure is rather high, but difficult to be compared with other studies that used longer essays or academic genres such as dissertations or research articles. Liu (2013), for instance, found 213 LAs per 10,000 words in a Chinese learner corpus containing close to half a million words and argued that this was much higher than the figure found in the parallel native corpus. Argumentative essays are short and the transition between sections and ideas are usually strongly signaled. In addition, L2 writers are instructed to use linking devices to explicitly mark these transitions. As has been discussed in the literature review above, a greater use of LAs may not automatically mean better essay quality. Not all LAs that were searched for appear in the learner corpus, only 81 of them, and many with a few occurrences only (see Tables 1 to 4 below).

### 4.2 Semantic distribution of linking adverbials

The taxonomy of the four main types of LAs, together with their subcategories, is presented in this section. Only the actively occurring 81 types are discussed. The four groups show the following order of frequency, starting from the most frequent one: additive, sequential, adversative and causal/resultative. The main function of the additive and sequential groups is in line with what Tankó (2004) found in his similar corpus and called “a highly structured contrastive set of ideas arranged cumulatively” (p. 171). To compare, Liu’s (2008) investigation of the British National Corpus found an additive, adversative, causal/resultative and sequential order for most registers. Lei (2012) also documented the same order of frequency in both his corpus of doctoral dissertations and the control group of published research articles as Liu did.

Table 1 shows the distribution of the additive conjunctions, which is the most numerous of the four main types (n=335), with the emphatic group (n=277) being well over-represented compared to the other two. The LAs *also*, *as well*, *in addition*, *furthermore* and *moreover* were the most frequent ones in the emphatic group. No syntactic or semantic misuse was found for these

adverbials. The other LAs were used less than ten times. It is important to note that, as a result of the manual checking of the concordance lines, and the analysis of the context in which the adverbials occurred, the adverbial *on the other hand* was added to the list both with an emphatic and a comparative function. Examples from the corpus are discussed below, together with the sequential function of this adverbial.

Table 1. Additive conjunctions in the two corpora

<b>Additive conjunctions</b>	<b>Corpus A</b>	<b>Corpus B</b>
<b>a) Emphatic</b>		
above all	0	1
(but then) again	2	2
also	56	60
as well	23	22
as a matter of fact	0	1
besides	1	4
in addition (to)	9	9
furthermore	7	16
moreover	17	14
not to mention	5	1
of course	1	6
too	5	4
what's (is) more	4	5
on the other hand	2	0
<b>Subtotal</b>	<b>132</b>	<b>145</b>
<b>b) Apposition/Reformulation</b>		
that is	1	2
in other words	4	0
for example	13	8
for instance	5	12
namely	3	1
to put it bluntly/mildly/simple	0	2
<b>Subtotal</b>	<b>26</b>	<b>25</b>
<b>c) Similarity comparative</b>		
similarly	3	2
<b>Subtotal</b>	<b>3</b>	<b>2</b>
<b>d) Difference comparative</b>		
on the other hand (with on the one hand)	0	2
<b>Subtotal</b>	<b>0</b>	<b>2</b>
<b>TOTAL</b>	<b>161</b>	<b>174</b>

Of the adversative conjunctions (n=162), which represent the third largest group, a few very frequently used ones stand out, namely *however*, *on the other*

*hand*, *instead* and *still*. At the same time many appear only less than five times (see Table 2). Some visible differences exist between the two corpora in the use of *at the same time*, *actually*, *instead*, *rather* and *still*. Nevertheless, the differences are not favoring one or the other group in terms of frequency, making the overall distribution quite similar for the two corpora.

Table 2. Adversative conjunctions in the two corpora

Adversative conjunctions	Corpus A	Corpus B
<b>a) Proper adversative/ Concessive</b>		
at the same time	5	0
however	27	23
nevertheless	1	4
of course	1	6
then again	1	0
yet	0	3
<b>Subtotal</b>	<b>35</b>	<b>36</b>
<b>b) Contrastive</b>		
actually	1	5
as a matter of fact	0	1
in/by contrast	2	1
in fact	1	3
in reality	0	1
on the other hand	3	5
<b>Subtotal</b>	<b>7</b>	<b>16</b>
<b>c) Correction</b>		
instead	10	5
on the contrary	2	3
rather	11	5
<b>Subtotal</b>	<b>23</b>	<b>13</b>
<b>d) Dismissal</b>		
anyway	1	1
despite n/this/that	0	2
in spite of this/that/etc	1	0
still	17	10
<b>Subtotal</b>	<b>19</b>	<b>13</b>
<b>TOTAL</b>	<b>84</b>	<b>78</b>

The least frequent type turned out to be the causal/resultative group (n=144), but still not lagging very much behind the third group. Interestingly, the two corpora had identical tokens (n=72). While items of the general causal subgroup occurred regularly, the conditional causal ones did so only very sporadically. The top LAs were *because of this*, *so*, *therefore* and *thus*. The word *so*, which is also frequent in colloquial English, leads the list (see Table 3).

Table 3. Causal/resultative conjunctions in the two corpora

<b>Causal/Resultative conjunctions</b>	Corpus A	Corpus B
<b>a) General causal</b>		
accordingly	0	2
as a consequence (of )	1	3
as a result (of )	2	9
because of it/this/that	10	9
consequently	2	6
naturally	1	2
so	25	14
therefore	8	14
thus	15	8
<b>Subtotal</b>	<b>64</b>	<b>67</b>
<b>b) Conditional causal</b>		
all things considered	0	1
in such a case/cases	0	2
otherwise	4	0
then (often used with if)	4	2
<b>Subtotal</b>	<b>8</b>	<b>5</b>
<b>TOTAL</b>	<b>72</b>	<b>72</b>

As for the sequential group, which is the second largest with 214 tokens, an uneven distribution among the three sub-categories is evident. Listing is a very large sub-group, especially for Corpus A (n=84 vs. n=65 for Corpus B). This is the sub-category for which the largest difference (19) was found between the two corpora. The three items on the list that make up most of these are *first of all*, *secondly* and *finally* (see Table 4). It is worth examining more closely the two most frequent items on the enumerative list, namely *first of all* and *secondly*. *First of all* is more colloquial than *secondly*, which has *firstly* as a pair only in 12 of the 43 cases. *Thirdly* and *finally* also occur less often (n=9 and n=17, respectively). This suggests that writers mark the second paragraph or viewpoint in their argumentative essay the most strongly. This is in line with what Liu (2008) found both for the mixture of the numerative and the numerative plus -ly forms and the outstanding use of *secondly* in the sequence. Simultaneous functions are rarely marked, most likely because the essays were short, containing three or four main points. As a summative conjunction, *all in all* is used the most often (n=23) which is a rather colloquial LA. To compare, another colloquial and often employed LA by Hungarian learners is *to sum up*, which appears only 7 times. The more formal items, *in conclusion* and *to conclude* are seen 13 and 8 times.



Table 4. Sequential conjunctions in the two corpora

<b>Sequential conjunctions</b>	<b>Corpus A</b>	<b>Corpus B</b>
<b>a) Enumerative/Listing</b>		
afterwards	1	0
eventually	1	2
first	5	1
firstly	6	6
first and foremost	1	0
first of all	15	16
in the first place	1	1
to begin with	0	3
second	3	2
second of all	0	1
secondly	20	13
third	1	0
thirdly	7	1
finally	8	9
last	2	1
lastly	3	1
last but not least	3	3
then/and then	6	7
on the other hand	1	1
<b>Subtotal</b>	<b>84</b>	<b>65</b>
<b>b) Simultaneous</b>		
at the same time	5	0
in the meantime	0	0
meanwhile	1	1
<b>Subtotal</b>	<b>6</b>	<b>1</b>
<b>c) Summative</b>		
all in all	13	10
in conclusion	3	10
in short	0	1
in summary/sum	0	1
to conclude	5	3
to sum up	4	3
to summarize	1	1
<b>Subtotal</b>	<b>26</b>	<b>29</b>
<b>TOTAL</b>	<b>116</b>	<b>98</b>

It is interesting to note, however, that only 55% percent of the authors marked their end of essay with a summative LA, although essay writing instruction usually favors the use of formal summative LAs. This does not mean that the essays do not contain a concluding paragraph. Writers have other options to mark transition between ideas, phrases, sentences and paragraphs. Sample 1

shows examples for how students indicated the summative role of their final paragraphs.

- (1) *To summarize what have been said, I would say ...*  
*Unfortunately, the above mentioned examples are frequent ...*  
*Taking everything into account, ...*  
*Having weighed up the advantages of ...*  
*For the reasons argued above, I would like to claim that ...*  
*The three arguments I have mentioned above support the idea that ...*

As was pointed out earlier, one of the adverbials, namely *on the other hand*, is worth some additional discussion. On Liu's (2008) original list, which served as the basis for the selection and evaluation of the linking adverbials in my corpus, *on the other hand* is categorized as a contrastive LA. However, in the present corpus three other functions were identified, although in some cases it is difficult to decide on the semantic value and the role of this LA. Sample sentence 2 below illustrates a form of use of this LA in which no contrast is expressed. The sentence would have the same meaning with the deletion of *on the one hand* and *on the other hand* and the addition of the linking word *and* or the LA *what's more*, if the author feels that more stress needs to be put on the second item.

- (2) *Also, the indication of personal information would enable people to find, on the one hand, the most suitable position, on the other hand, the most skilled employee for the job.* (Corpus A, additive)

Sample section 3 is a unique example as it contains two of the same LA in two consecutive sentences. While the first one expresses some contrast (although some additive function is felt here as well), the second one is clearly additive and introduces a new set of ideas which is in no close link with the views expressed in the previous sentence, therefore cannot serve a contrastive function. Note that grammatical or lexical changes have not been made to the original student texts used as examples.

- (3) *It is a well known fact that the production of paper requires huge amounts of wood, machines, human workforce, not to mention the dangerous chemicals used to whiten the paper sheets. On the other hand e-books can exist almost without any physical means, we only need a computer to produce and read an e-book.*  
*On the other hand, the use of e-books are extremely comfortable in many aspects.* (Corpus A, contrastive and additive)

Two cases of the sequential use were also registered. The first one in Corpus A stands at a paragraph initial position, introducing the second paragraph in the body of the essay. This essay has the following introductory sequence in the three paragraphs: *First of all... On the other hand... The third reason for...* The

second example for the sequential function is seen in a Corpus B text, in sample (4). Although *on the other hand* here also introduces a new set of ideas, the listing function is stronger here, especially because the sentence has another additive LA, namely *as well*. Tazegül (2015) categorized similar examples as replacive in his Turkish and native corpora and also found concessive and antithetic examples.

- (4) *In my opinion being educated is not a one-sided phenomenon. It can be presented in my different levels. On one hand, it means that someone has a huge amount of lexical knowledge which they gained during the university. On the other hand, I consider those people educated, as well, who have their knowledge from their everyday lives. These people are educated in different ways so I do not think they can be compared with each other.* (Corpus B, sequential)

Sample section (5) is an example for the contrastive function, although not a very strong one, as it is simply stated that advantages and disadvantages exist for the given situation.

- (5) *Immigration from the less developed countries to the wealthier ones has been a widespread phenomenon in the current century. On one hand there can be disadvantages of immigration and free movement of labor. On the other hand there are various benefits of them from many aspect.* (Corpus B, contrastive)

Leedham and Cai (2013) in their study concentrated on the LA *on the other hand*. They documented its excessive use among Chinese students enrolled in UK universities as a result of its direct teaching in Chinese secondary schools. They argue that the explicit teaching that favors certain LAs may lead to students being primed to use them regardless of their appropriacy in a register, and to favor sentence-initial LAs only. This may well be the case in other countries, although less centralized teaching materials and school backgrounds make it difficult to track the teaching/learning factor in the use of certain lexical elements, including LAs.

Besides the influence of teaching materials (such as non-equivalent LAs being grouped under the same semantic categories or offered as synonyms, and too much importance being given to certain linking devices), research has voiced that students may also overuse linking adverbials because these provide them with surface logicity (Crewe, 1990; Lei, 2012). Narita, Sato & Sugiura (2004) also found an overwhelming use of LAs in sentence-initial position in their Japanese corpus and explained it as students' need to explicitly mark cohesive ties but doing so without using more flexible placement options. Another reason for using LAs is to mask the authors' otherwise weak writing skills. It is easy to see even from the present corpus that some LAs are treated almost as lexical teddy bears that give writers a feeling of safety and provide a skeleton for any short essay. Venturing out of one's comfort zone may be risky

and not all students take this risk, especially when writing for direct evaluation such as the exam condition under which the essays in this corpus were produced.

## **5. Conclusion**

This study reported the results of a diachronic corpus study that compared the usage patterns of linking adverbials in argumentative essays written in recent years and in some years earlier. The frequency of LAs was found to be high compared to the figures reported in other studies. Of the investigated 113 adverbials, 81 appeared at least once in the essays. Linking adverbials with an additive function were the most frequent ones, followed by sequential, adversative and causal/resultative adverbials. Most subcategories have a handful of LAs that occur very frequently, although not exclusively, with a number of other LAs in the group, often used less than 5 times. This shows that by the end of year 3 students have had experience in producing essays, have received feedback on their writing and have been exposed to academic texts during which they could observe and broaden the range of LAs appropriate for given genres. This knowledge of linking adverbials may, however, stay passive and not turned into active use. Of the most commonly occurring adverbials, *on the other hand* was analyzed more closely as it assumed different semantic roles compared to the ones discussed in other studies.

In terms of the general frequency and the semantic categories of LAs, no major differences were found between the two corpora, with individual adverbials being more frequent in one or the other corpus. This shows that, as a group, students in recent years have employed similar writing strategies and used similar sets of vocabulary to produce exam essays than did students a few years earlier (see also Doró, 2015). Group averages may, of course, mask individual differences. Future studies in this area could include argumentative essays written by first-year students in the same university and could compare usage patterns between more and less experienced writers.

The present study added to the body of research on LAs that investigate locally compiled student corpora in order to have L1 and context specific linguistic data and also to facilitate writing instruction. While those involved in writing pedagogy may have trustful intuitions about their students' writing strategies and text production, corpus investigations built on even small local corpora may provide us with fuller pictures of particular aspects of L2 texts.

## References

- Altenberg, B., & Tapper, M. (1998). The use of adverbial connectors in advanced Swedish learners' written English. In S. Granger (Ed.), *Learner English on computer* (pp. 80-93). Harlow: Addison Wesley Longman Limited.
- Anderson, G. (2014). So, transitions: Linking adverbial use of university ESL students. *The CATESOL Journal*, 26(1), 1–13.
- Anthony, L. (n.d.). AntConc. Computer software. Available online at <http://www.laurenceanthony.net/software.html>.
- Biber, D., Conrad, S., & Leech, G. (2002). *Longman student grammar of spoken and written English*. Harlow, Essex, England: Longman.
- Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken and written English*. London: Longman.
- Cain, K., & Nash, H.M. (2011). The influence of connectives on young readers' processing and comprehension of text. *Journal of Educational Psychology*, 103(2), 429–441.
- Celce-Murcia, M., & Larsen-Freeman, D. (1999). *The grammar book: An ESL/EFL teacher's course*. Boston: Heinle & Heinle.
- Chen, C. (2006). The use of conjunctive adverbials in the academic papers of advanced Taiwanese EFL learners. *International Journal of Corpus Linguistics*, 11(1), 113–130.
- Chitez, M. (2014). *Learner corpus profiles: The case of Romanian learner English*. Bern, Peter Lang.
- Crewe, W. J. (1990). The illogic of logical connectives. *ELT Journal*, 44(4), 316–325.
- Čurković-Kalebić, S. (2009). The use of sentence adverbials in the written discourse of L2 students of English: results of an analysis. In M. Edwardes (Ed), *Proceedings of the BAAL Annual Conference 2008* (pp. 71–74). London: The British Association for Applied Linguistics.
- Doró, K. (2015). Changes in the lexical measures of undergraduate EFL students' argumentative essays. In P. Pietila, K. Doró & R. Pípalová (Eds.), *Lexical issues in L2 writing* (pp. 57-76). Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Garner, J. (2013). The use of linking adverbials in academic essays: How data-driven learning can help. *CALICO Journal*, 30(3), 410–22.
- Granger, S., & Tyson, S. (1996). Connector usage in the English essay writing of native and non-native EFL speakers of English. *World Englishes*, 15(1), 17–27.
- Halliday, M. A. K., & Hasan, R. (2014). *Cohesion in English*. New York, Routledge.
- Jameel, I., Mahmood, M. A., Hussain, Z., & Shakir, A. (2014). A corpus-based analysis of linking adverbials in Pakistani English. *International Journal of Linguistics*, 6(3), 133–140.

- Leedham, M., & Cai, G. (2013). Besides ... on the other hand: Using a corpus approach to explore the influence of teaching materials on Chinese students' use of linking adverbials. *Journal of Second Language Writing*, 22(4), 374–389.
- Lei, L. (2012). Linking adverbials in academic writing on applied linguistics by Chinese doctoral students. *Journal of English for Academic Purposes*, 11, 267–275.
- Leńko-Szymańska, A. (2008). Non-native or non-expert? The use of connectors in native and foreign language learners' texts. *Acquisition et interaction en langue étrangère*, 27, 91–108.
- Liu, D. (2008). Linking adverbials: An across-register corpus study and its implications. *International Journal of Corpus Linguistics*, 13(4), 491–518.
- Liu, G. (2013). On the use of linking adverbials by Chinese college English learners. *Journal of Language Teaching and Research*, 4(1), 149–155.
- Narita, N., Sato, C., & Sugiura, M. (2004). Connector usage in the English essay writing of Japanese EFL learners. In M. T. Lino (Ed.), *Proceedings of 4th International Conference on Language Resources and Evaluation*. <http://www.lrec-conf.org/proceedings/lrec2004/pdf/48.pdf>
- Peacock, M. (2010). Linking adverbials in research articles across eight disciplines. *Ibérica*, 20, 9–34.
- Quirk, R., Greenbaum, G., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language*. London: Longman.
- Sanders, T. J. M. & Noordman, L. G. M. (2000). The role of coherence relations and their linguistic markers in text processing. *Discourse Processes*, 29(1), 37–60.
- Shaw, P. (2009). Linking adverbials in student and professional writing in literary studies: What makes writing mature. In C. Maggie, D. Pecorari & S. Hunston (Eds.), *Academic writing: At the interface of corpus and discourse* (pp. 215–235). London: Continuum.
- Shea, M. (2009). A corpus-based study of adverbial connectors in learner text. *MSU Working Papers in SLS 2009*, 1(1), 1–13.
- Tankó, G. (2004). The use of adverbial connectors in Hungarian university students' argumentative essays. In J. M. Sinclair (Ed.), *How to use corpora in language teaching* (pp. 157–181). Amsterdam: John Benjamins Publishing Company.
- Tazegül, A. B. (2015). Use, misuse and overuse of 'on the other hand': A corpus study comparing English of native speakers and learners. *International Online Journal of Education and Teaching (IOJET)*, 2(2), 53–66.
- Vinčela, Z. (2013). Linking adverbials in the corpus of student-composed texts. *Žmogus ir žodis*, 15(1), 215–222.
- Yeung, L. (2009). Use and misuse of 'besides': A corpus study comparing native speakers' and learners' English. *System*, 37, 330–342.