



Research Paper

A corpus-based study on transition marker types in PhD dissertations

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ABSTRACT

This study was conducted to evaluate transition marker types in the PhD dissertations written by the native speakers of English and Turkish speakers of English. The purpose was to compare the most salient transition types of the native speakers of English and Turkish speakers of English randomly selected PhD dissertations introduction, results and discussion, and conclusion sections in the field of ELT between the years 2010 and 2014. The WordSmith Tools 5.0 software was used to analyze the data. TM types were analyzed in terms of percentages, frequencies per 1,000 words and they were interpreted by calculating the log-likelihood value of whether there was a significant difference in their usage. The results indicated that the frequencies, and frequencies per 1,000 words of the most salient transition type usage in the sections were different.

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INTRODUCTION

The term 'corpus linguistics' is the study of a language that presents examples of real-life language usage and uses them to study that language (McEnery and Wilson, 1996). Farr's (2008) definition of corpus linguistics is broader as compared to McEnery and Wilson (1996). According to Farr (2008), it is an approach and has been used in many disciplines: e.g. dialectology, lexicography, sociolinguistics, language materials development, language therapies, speech technology, forensic linguistics, literary studies, language change and evolution, and grammar research. Granger (2002) defines it as a linguistic methodology founded on the use of electronic collections of corpora. According to Granger (2002), corpus linguistics is neither a new branch of linguistics nor a new language theory; it is a powerful methodology. Gries (2009) indicated that "Corpus linguistics is one of the fastest-growing methodologies in contemporary linguistics" (p. 32).

Corpus linguistics has been perceived as a sub-field of linguistics like the other areas of linguistic studies in sociolinguistics, pragmatics, semantics, and syntax. Moreover, it has also been applied as a methodology on

research in applied linguistics and utilized as a reference tool for grammar books, dictionaries, and course books (Akbana, 2011). Corpora can also connect the cognitive science of linguistics and many other areas including sociolinguistics, teaching, grammar, and translation (O'Keeffe et al., 2007).

In terms of research on language, corpus linguistics is a source of evidence for improving descriptions of the structure and the use of languages, and for various applications, including natural language processing by machine or how to learn or teach a language. Corpus linguistics primarily is concerned with the description and of the nature, structure and use of language and with particular interests such as language acquisition, variation, and change. Nevertheless, corpus linguistics has developed a tendency within linguistics sometimes focusing on the lexis and lexical grammar rather than pure linguistics (Kennedy, 1998). Corpus linguistics deals with the principles and practice of using corpora in language study. The aim of corpus linguistics is to analyze and describe the language use as realised in texts.

Transition markers

Researchers stated that transition markers (TMs) is one of the elements used by writers to encode the message in the form of a written text and the reader must use them to interpret the message given by the writer. Using TMs appropriately and correctly in written language is an important component of textual competence. When used adequately, they act as guideposts for the reader to perceive the text from the writer's perspective and to see shifts and changes in thought, comparisons, contrasts and countless other relational concepts (Dublin and Olshtain, 1980; Holloway, 1981; Sloan, 1983). Meyer et. al. (1980) suggested that the use of TMs help organize discourse representation and faster discourse segment processing. As stated by Virtanen (2004), appropriate and correct use of TMs is important because they indicate the kinds of thought processes involved in the text, and they invite the reader to construe particular logico-semantic relations between units of the text. Similarly, Zamel (1983) stated that TMs are very important in writing because they signal the relationship between ideas and affected the meaning that the writer is trying to convey. This helps to clearly understand the writer's thoughts and affects the writing quality.

Halliday and Hasan (1976) note that conjunctive cohesive devices are not easily classifiable, they establish relationship between meanings rather than grammatical units. They provide a semantic relationship on 'how' elements are connected instead of simply marking 'which' elements are connected. Moreover, the spaces of TMs in linguistic units could vary from clauses to paragraphs and even longer discourse (Quirk et al., 1985; Hatch, 1992). Therefore, learners first need to familiarize individual TMs, then the type of units they normally occur, finally the distance they can span between units.

Transitions as one of the most widely used interactive metadiscourse resources (Burneikaitė, 2009) were used to arrange propositions in the text and involve the readers. According to Hyland (2005), TMs were mainly conjunctions and adverbial phrases which help readers interpret pragmatic connections between steps in an argument by marking additive, contrastive, causative, and sequential steps in the discourse. "Addition" adds elements to the argument and consists of items such as *and*, *furthermore*, *moreover*, *in addition*, and etc. "Comparison" marks arguments as two fold: similarity (*e.g., similarly, likewise, equally, correspondingly*, and etc.) or difference (*e.g., in contrast, however, but, on the contrary, on the other hand*, and etc.). "Consequence relations" tell the reader that a conclusion is either being drawn or justified (*e.g., therefore, consequently, in conclusion*, and etc.) or an "argument" is being countered (*e.g., admittedly, nevertheless, anyway, in case, of course*, and etc.). Cohen (1984) mentions two different functions of TMs, in that transitions enable the reader to recognize coherence relations and allows the reader to recognize coherence relations which could not

be inferred in the absence of a TM. According to Hutchinson (2005), the use of a TM by the writer is optional in some cases whereas in others, it is obligatory. Researchers (Halliday and Hasan, 1976; Schiffrin, 1987; Moser and Moore, 1995; Kehler, 2002) emphasize that a TM might indicate more than one relation. They point out that since the correspondence between TMs and relations is not one-to-one, the writer has to decide which TM to use to signal a given coherence relation (Knott, 1996: 177).

Limitations

The present study was limited to identifying the types of TMs in the introduction, results and discussion, and conclusion sections of the PhD dissertations written by the native speakers (NSs) of English and Turkish speakers (TSs) of English in the field of ELT between 2010 and 2014.

METHODOLOGY

The TM types were analyzed in terms of frequency and log-likelihood (LL) by means of comparing the data groups. LL calculation was used as the statistical analysis method to indicate the overuse which is referred as the higher frequency of occurrence, and the underuse which is defined as the lower frequency of occurrence. The frequency of a linguistic feature is relevant when compared with other features or across groups. In order to make these comparisons, normalized frequency should be discussed. Relative frequency can be determined by calculating the frequency of the construct per x number of words. Depending on the item being investigated and the convention in the literature, the researcher might choose to measure the number of instances per 100; 1,000; 10,000 or 1,000,000 words. This is called normalizing. Normalization not only allows researchers to compare linguistic features with one another, it also allows them to compare texts and corpora of differing lengths (Friginal and Hardy, 2014). This study was designed as twofold: a descriptive study as descriptive statistics gives numerical and graphic procedures to summarize a collection of data in a clear and understandable way (Jaggi, 2003: 1) and the quantitative research because it is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect (Babbie and Mouton, 2001). "The obvious benefits of quantitative data are that the numerical form makes comparison easy, data are standardized, visible and amenable to the tests of classical survey statistics" (Cooper and Branthwaite, 1977 cited by Hart, 1987: 29).

Instrument(s)

Two different instruments were used to collect the data for

Table 1: Overall Frequency and LL Analysis of the TM Types in the Doctoral Dissertations Written by the NSs of English and the TSs of English.

Types	TSs	NSs	LL Value
Corpus Size	2,756,430	2,880,750	
Additive TMs (n)	29838	29169	+65.80*
n per 1,000	11	10	
Frequency (%)	0.11	0.10	
Adversative TMs (n)	4413	3632	+114.30*
n per 1,000	2	1	
Frequency (%)	0.02	0.01	
Sequential TMs (n)	1861	997	+304.83*
n per 1,000	1	0.3	
Frequency (%)	0.01	0.00	
Causal TMs (n)	1094	958	+16.02*
n per 1,000	0	0	
Frequency (%)	0.00	0.00	

this study: a) the PhD dissertations written by the native speakers (NSs) of English in the field of ELT retrieved from ProQuest dissertations database and b) the Turkish speakers (TSs) of English in the field of ELT retrieved from the higher education council's dissertations database. Fifty doctoral dissertations (PhD) of the NSs the TSs (100 theses in total) were randomly selected between the years 2010 and 2014 to analyze and compare the types of the TMs in the introduction, results and discussion, and conclusion sections.

Data collection and analysis procedures

Randomly selected 100 (50 TSs and 50 NSs) doctoral dissertations were analyzed by the researcher, by picking equally ten theses per each year. The data analyses included computer-supported tools of these two corpora. First of all, the introduction, results and discussion, and conclusion sections were extracted and saved as text files and all the other chapters were excluded from the data. Accordingly, each set of corpus was uploaded to the programme of WordSmith Tools 5.0. Liu et al. (2014) also reported on a quantitative study of the use of nominalizations across different English varieties which were calculated per 1,000 words in order to make comparisons of texts of diverse lengths possible. In the present study, the TM types were analyzed according to their frequency per 1,000 words. To observe the frequencies of the TM types in two corpora, the identification of TM types in every 1,000 words (n/1,000) might give a clearer view of possible differences in total TM type frequency in each corpus. In addition to the frequency

analysis, log-likelihood (LL) calculation was also used as the statistical analysis method to indicate the overuse and the underuse of occurrence for the analyzed data. When the expected relative frequency is lower than 5, most tests to measure statistical significance, such as chi-square, are unreliable, except for LL tests (Rayson and Garside, 2000, cited in Buysse, 2011).

RESULTS

The transition marker (TM) types; including additive transitions, adversative transitions, sequential transitions, and causal transitions; were analyzed in order to investigate the most salient TM types in the doctoral dissertations written by the native speakers (NSs) of English and the Turkish speakers (TSs) of English in the field of ELT.

According to Table 1, among all the TM types, the overall usage of the additive transitions for three sections, including; the introduction, results and discussion, and conclusion sections in the doctoral dissertations written by the TSs of English were 29838, whereas it was 29169 for the NSs of English. In addition, the additives were used more than the adversative, sequential, and causal transitions in the TSs' dissertations' three sections. It was revealed that the additive transition usage in all three sections for the TSs was higher than those of the NSs in their dissertations. By means of frequency per 1,000 words, the additive transitions for both groups were observed to be the highest in their PhD dissertations. According to the frequency results, the TSs of English used the additive, adversative, and sequential transitions more than the NSs

Table 2. Frequency and LL frequency analysis of the TM types for the introduction section in the doctoral dissertations Written by the NSs of English and the TSs of English.

Types	TSs	NSs	overuse/underuse + / -	LL Frequency
Additive n	5711	5910	+0.0	+0.28*
%	84.4	88.5		
n/1,000	2	2		
Adversative n	557	444	+0.0	+18.26*
%	8.2	6.6		
n/1,000	0.2	0.2		
Sequential n	333	195	+0.0	+42.84*
%	4.9	2.9		
n/1,000	0.1	0.1		
Causal n	163	126	+0.1	+6.52*
%	2.4	1.8		
n/1,000	0.1	0.0		

of English in every 100 words in three sections of their dissertations. On the contrary, both groups' doctoral dissertations were similar in number per 1,000 words and with a frequency of 0.00 causal transition usage.

Besides the overall frequency analysis, LL calculation was applied. As indicated in Table 1, the LL value for the TM types in the introduction, results and discussion, and conclusion sections of the PhD dissertations between the TSs of English and the NSs of English revealed an overuse which was statistically significant. Moreover, the most significant overuse was observed in the sequential transitions (+304.83) whereas the least LL value was obtained from the causal transitions (+16.02) in the dissertations of both groups. The differences between the TM types in two groups were compared by analyzing their frequencies separately for the introduction, results and discussion, and conclusion sections' doctoral dissertations.

As shown in Table 2, the most frequently used TM type in the introduction section of the doctoral dissertations by the TSs of English was the additive transitions with 5711 frequency and constituted the 84.4% of all the TM types. On the other hand, the most frequently used TM type for the NSs of English was also the additive transitions (5910). In addition, the NSs had the highest percentage (88.5%) for the additives in between the TM types in their dissertations' introduction section. Moreover, the frequency and frequency per 1,000 words of the TM types in both groups PhD dissertations' introduction section were compared to identified the overuse or underuse.

Table 2 shows that the frequency of the additive, adversative, and sequential transitions per 1,000 words in the TSs of English and the NSs of English were equal. However, the frequency of the causal transitions for the TSs

was higher than the NSs. All the TM types were overused in the TSs' doctoral dissertations' introduction section.

As observed in Table 2, the LL values of the TM types of the TSs of English had indicated an overuse and a significant difference in all of the transition types including; the additive, adversative, sequential, and the causal transitions. The highest overuse in the TSs' TM types for the doctoral dissertations' introduction section was in sequential transitions with +42.84 LL value. The least overuse difference in the LL value was in the additives with +0.28 LL value. Extracts from both corpora were illustrated in Example 1. PHDTS-INT refers to the introduction section of the PhD dissertations written by the TSs, and PHDNS-INT refers to the introduction section of the PhD dissertations written by the NSs.

Example 1

[Hence, the appropriateness of considering the native speaker as the model in English language teaching has become questionable.]

Extracted from <PHDTS43-INT>

[Therefore, studies like the present one could constitute data for further research for the MNE to better the curricula of the English courses, coursebooks or the educational system in general.]

Extracted from <PHDTS18-INT>

In Table 3, the most frequently used TM type was the additive transitions with 16523 frequency and constituted the 78.4% of all the TM types in the doctoral dissertations'

Table 3: Frequency and LL frequency analysis of the TM types for the results and discussion section in the doctoral dissertations written by the NSs of English and the TSs of English.

Types	TSs	NSs	overuse/underuse + / -	LL Frequency
Additive n	16523	13465	+1	+461.87*
%	78.4	81.7		
n/1,000	6	5		
Adversative n	2852	2034	+0.0	+0.00*
%	13.5	12.3		
n/1,000	1	1		
Sequential n	978	424	+0.3	+250.12*
%	4.6	2.5		
n/1,000	0.4	0.1		
Causal n	701	551	+0.1	+25.24*
%	3.3	3.3		
n/1,000	0.3	0.2		

results and discussion section by the TSs of English. Moreover, the most frequently used TM type for the NSs of English was also the additive transitions (13465) with 81.7%. Furthermore, the NSs had the highest percentage (81.7%) for the additive transitions in between the TM types of the PhD dissertations' results and discussion section.

The frequency of the additive transitions per 1,000 words in the TSs was 6 as shown in Table 3. The difference between two groups (6-5) was 1. In other words, additive transitions in the doctoral dissertations' results and discussion section written by the TSs of English had been used more than the NSs of English. Furthermore, when the frequencies were compared between the groups TM types in the dissertations' results and discussion section, it was observed that all the transition types; including the additive, adversative, sequential and causal transitions; were overused by the TSs. In between these types, the highest overuse was indicated in the additive transitions for the TSs' PhD dissertations' results and discussion section.

As indicated in Table 3, the LL values of the TM types of the TSs had determined an overuse with a significant difference in the additive transitions. On the other hand; all of the TM types; including the additive, adversative, sequential, and the causal transitions revealed an overuse and a significant difference was observed in the TSs' results and discussion section of the doctoral dissertations. The highest overuse in the TSs' TM types was in the additive transitions with +461.87 LL value. The least amount of overuse was revealed as +0.00 in the adversative transitions which was statistically significant in the TSs' dissertations' results and discussion section. The TM types

could be observed in the following examples extracted from the TSs and the NSs.

PHDTS-RD refers to the results and discussion section of the PhD dissertations written by the TSs, and PHDNS-RD refers to the results and discussion section of the PhD dissertations written by the NSs.

Example 2

[It **also** should provide them with a pedagogical tool to handle the pedagogical, institutional and personal inhibitory factors that impede their developments towards a changed perspective.]

Extracted from <PHDTS29-RD>

[**In addition**, the participants were asked whether they agree with the idea that people in their country are very good at learning languages.]

Extracted from <PHDTS12-RD>

In Table 4, the most frequently used TM type in the conclusion section of the doctoral dissertations by the TSs of English was the additive transitions with 7604 frequency and for the NSs of English, it displayed a frequency of 9794. In addition, the NSs had the highest percentage (84.3%) in between the TM types in their dissertations' conclusion section. Table 4 also indicated that, the frequency of the additive, adversative and causal transitions per 1,000 words in the NSs and the TSs was equal. The sequential transition usage by the TSs was higher than the NSs and the difference between two groups (0.2-0.1) was +0.1. In other

Table 4: Frequency and LL frequency analysis of the TM types for the conclusion section in the doctoral dissertations written by the NSs of English and the TSs of English.

Types	TSs	NSs	overuse/underuse + / -	LL Frequency
Additive n	7604	9794	+0.0	-188.26*
%	80.9	84.3		
n/1,000	3	3		
Adversative n	1004	1154	+0.0	+0.00*
%	10.6	9.9		
n/1,000	0.4	0.4		
Sequential n	550	378	+0.1	+40.10*
%	5.8	3.2		
n/1,000	0.2	0.1		
Causal n	230	281	+0.0	-3.10*
%	2.4	2.4		
n/1,000	0.1	0.1		

words, the sequential transitions in the TSs' PhD dissertations' conclusion section had been used 0.1 times more than the NSs. Consequently, when the frequencies of the TSs and the NSs' TM types in the doctoral dissertations' conclusion section were compared, the results indicated that all the transition types were overused by the TSs.

According to **Table 4**, the LL values of the TM types of the TSs had indicated an underuse with a significant difference in the additive, and the causal transitions. The highest underuse in the TSs' TM types was in additive transitions with -188.26 LL value in their doctoral dissertations' conclusion section. On the contrary, the TSs had overused the adversative, and the sequential transitions. The highest amount of overuse was revealed as +40.10 in the sequential transitions which was statistically significant in the TSs' dissertations' conclusion section. The extracts obtained from each corpus was illustrated in Example 3. PHDTS-CON refers to the conclusion section of the PhD dissertations written by the TSs, and PHDNS-CON refers to the conclusion section of the PhD dissertations written by the NSs.

Example 3

[In addition, students reflected on their strategic planning and adjustments based on the feedback they received from their self-monitoring and self-evaluations.]

Extracted from <PHDTS46-CON>

[The participants mostly preferred familiarisers such as *Guys*, *Friends*, and *Everybody/Everyone* to address the given interlocutors, the popularity of which, **gain**, was found to

change according to the age of the interlocutors and also to the familiarity of the interlocutors.]

Extracted from <PHDTS10-CON>

DISCUSSION AND CONCLUSION

Transition marker types that are dramatically important to combine thoughts in writing are classified as the additive, adversative, sequential, and causal. Regarding the results on these types taken part in the three sections of which are the introduction, results and discussion, and conclusion in the doctoral dissertations (PhD) written by the Turkish speakers (TSs) of English and the native speakers (NSs) of English, it was observed that all the TM types were significantly overused. To explain them in detail, a wide variety of additive transitions were observed to be used more than the other types of transitions which are additive, adversative, sequential, and causal in the PhD dissertations by both groups. In terms of investigation of the corpus size, the findings indicated that the NSs used them in higher amount than the TSs. However, the TSs used the additive transitions more than the NSs regarding their amount, frequency and usage per 1,000 words in all three sections. The TSs used the additives 11 times in every 1,000 words whereas they were used 10 times in the doctoral dissertations by the NSs fluently. These results mentioned, are also supported by the study of Mohamed-Sayidina (2010), which was conducted to investigate the use of transition words and cohesive devices in English compositions and found that non-native speakers used more additive words than native speakers. According to the overall frequency of the PhD dissertations, the causal

transitions were used the least in both groups because they are limited in number and they were exposed to certain types with few variations. The loglikelihood (LL) overall frequency indicated that the TSs significantly overused all the transition types. However, the most overused transition type in total was the sequentials realized as the reason for this fact might stem from the fact that TSs preferred “therefore” twice as much as the NSs in their dissertations, but mostly excluded the others.

In terms of the introduction section of their doctoral dissertations, additives per 1,000 words, it appears that the TSs of English and the NSs of English used them equally. However, the NSs used them more frequently than the TSs in the introduction, and the results and discussion sections. The additive usage, including their amount and usage per 1,000 words were high for the TSs in the results and discussion section of their PhD dissertations. The TSs had the highest significant overuse in this section because of the high proportion of the additive transition usage. Among all three sections, both groups used the highest amount of additive transitions in this section. In line with the results mentioned, the use of the additives might also have contributed to the positive development of fluency in both groups’ writing and experience in effective writing. On the contrary, in between the groups, the NSs used the additives; regarding their amount, frequency and usage per 1,000 words more than the TSs in the conclusion section. Furthermore, the highest significant underuse of the additives for the TSs in the conclusion section was due to the frequency interval of both groups in their doctoral dissertations. It could be interpreted that the NSs explicitly guided the readers more dramatically through their PhD dissertations by the extensive use of additive transitions than the TSs since they put their written texts naturally in their native language.

The awareness of metadiscourse could facilitate comprehension in that the reader approaches to a written text with an awareness of the discourse organization with the presence of certain kinds of resources including specifically transition markers (TMs) with other markers (Aidinlou and Vafae, 2012; Camiciottoli, 2003; Intarapraw and Steffensen, 1995). This study shows that explicit teaching of TM types from corpus can be an efficacious alternative to make learners more proficient in their academic writing. With a corpus-based implementation, learners could be provided with several written materials whether authentic or semi-structured/structured ones including various linguistic patterns directly or indirectly presented within samples of numerous markers so that they could individually examine the types of TMs in different contexts.

The learners should be made familiar with the different types of TMs in order to enable to make good variation. Also, in order to ensure that they make use of a wider repertoire of TMs in their academic texts and to prevent their use of limited types and their excessive use, it is also

important to introduce the different types of markers with their alternatives apart from the markers that they consistently employ in their academic writings. In addition, providing various TM types with their contextual information could be helpful for learners to better understand the functions of them that occur within their specific contexts.

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