

A Contrastive Study on the Utilization of Discourse Markers in the Discussion Section of English Research Articles

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Abstract

Cohesion is an important aspect of English texts, and to achieve that, writers utilize certain devices known as Discourse Markers (DMs). This study thus sought to analyze the discussion section of 12 research articles (RAs) published on two different journals (i.e., *Language Teaching Research* and *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*) which cover contrastive disciplines (i.e., humanities and medicine) so as to find out the most used category of DMs. Additionally, the study aimed at identifying the differences between these two disciplines as to how DMs were utilized. The study thus adopted qualitative methods. That is, the analysis was based on Halliday and Hasan's (1976) and Fraser's (2009) classification frameworks of DMs. Results revealed that elaborative DMs were the most used category of DMs across all the RAs. Furthermore, the *LTR* corpus exhibited more varieties of DMs than the *AJMG* corpus in which DMs were less used. Lastly, some suggestions are given for future research that have interest in discourse analysis in general, and in contrastive analysis in particular.

Keywords: cohesion, contrastive rhetoric, corpus-based analysis, discourse markers

1. Introduction

Producing a cohesive piece of writing is not quite easy as some may think. The process requires the utilization of a number of expressions and techniques. These expressions are used to signal a specific relationship between a segment and another that follows in discourse, whether it be written or spoken. However, these utilizations differ from one individual to another, as well as between a discipline and another. Numerous research attempted to uncover how these techniques were employed, which one was most preferred, and even scrutinized more than one language as to their ways of utilization of such expressions. These research projects appeared significant since they spotted prominent issues, major differences, and multiple styles across languages, journals, and writers (e.g., Hamed, 2014; Mahmood, 2008).

Writers, and even speakers, need to clarify their ideas so as to deliver them flawlessly and to avoid misinterpretations and misunderstandings. To accomplish that, they employ a number of strategies across their texts or speeches which can help them guarantee the vividness of their ideas—that is, these strategies achieve the cohesiveness of texts and then clearly convey the meanings that these texts seek to deliver.

In English, cohesion indicates “a relationship between elements in a discourse, whereby the interpretation of an element is dependent on that of another” (Mohammed, 2015, p. 75). Hence, Halliday and Hasan (1976) explicated that the cohesion of texts can be demonstrated by several strategies: Reference, substitution, ellipsis, lexical cohesion, and conjunction. This current study then focused on the utilization of one of these strategies: Conjunction. This strategy involves a variety of words and expressions that are used to connect clauses to depict a particular meaning. These words are also referred to with different terms by different scholars. For instance, conjunctions are called *discourse adjunct* by Halliday and Hasan (1976); *discourse markers* by Fraser (1999, 2009); and *discourse connectors* by Cowan (2008). In this study, however, conjunctions were labeled as discourse markers (henceforth DMs).

Research on cohesion in texts covered a wide variety of options. Some researchers preferred to examine the influence of the writers' cultural or linguistic backgrounds on their utilization of DMs (e.g., Carrió-Pastor, 2013; Povolná, 2016), whereas some sought to analyze DMs in specific types of documents such as Master's theses,

news stories, and newspaper reports (e.g., Povolná, 2012; Morrow, 1989; Afzal et al., 2020; Al Kohlani, 2010). In addition, Pulungan et al. (2017) chose to adopt a wider perspective. The researchers aimed to investigate whether subordinate DMs or coordinate DMs were mostly used in a number of research articles. It is worth mentioning that the use of DMs was not only analyzed in written discourse but spoken one as well (e.g., Ferrante, 2021).

However, this current study focused on a different aspect while analyzing DMs in the discussion section of 12 research articles (henceforth RAs). That is, the researcher took into account the fields of study for each comprised corpus as a prominent criterion of this study. These RAs thus tackled topics that are related to either genetics studies or language studies. This attempt was in accordance with Casanave's (2004) advice in which she directed her readers either to analyze articles that are written in different languages or to examine articles "in English only, across disciplines" since that "can be equally revealing" as to how DMs are regularly utilized (p. 47). Therefore, this study was undertaken to address two questions pertained to which category of DMs was mostly used in the discussion section of 12 RAs that belong to different branches of knowledge, as well as to spot the differences between the two corpora in their utilization of DMs. To this end, the researcher adopted Fraser's (2009) and Halliday and Hasan's (1976) classifications of DMs as tools for the analysis process. Finally, the researcher speculated that the study's results may provide help to those authors who write on similar issues as to the ones examined. In other words, the authors can benefit from the results by being aware of their fields' most frequently employed conventions of DMs.

2. Literature Review

2.1 Classification Frameworks of Discourse Markers (DMs)

DMs are lexical expressions that are used to express a relationship between a part of discourse and another preceding it (Fraser, 2009). Needless to say, not every lexical expression in English is classified as a DM. Some exceptions were made. These exceptions, however, are not absolute as some scholars agree on such classifications and some do not. For example, Fraser (1999) clarified that there are some expressions that are not considered DMs such as "commentary pragmatics markers (CPMs), focus particles, pause markers, modal particles, vocatives, and interjections" (pp. 942–943). Conversely, Schiffrin (1987), as cited in Fraser (1999), considered interjections as DMs.

Thus, Fraser (2009) elucidated that there are three grammatical groups from which DMs are obtained: Conjunctions, adverbs, and prepositional phrases. Halliday and Hasan (1976) also added another group called prepositional expressions. These expressions are basically prepositional phrases + that/this. Fraser and Halliday and Hasan sorted DMs under several categories and subcategories, as explained next. First, Fraser categorized DMs into three classes based on their purposes as follows:

- 1) Contrastive DMs, which express a feeling of polarity between two segments in a discourse.
- 2) Elaborative DMs, which signal further explanations or clarifications to certain information provided in a previously stated part of a discourse.
- 3) Inferential DMs, which indicate that the first segment of a discourse "provides a basis for inferring" the second segment of the same discourse (p. 301).

Similarly, Halliday and Hasan (1976) classified DMs into four categories: Adversative, additive, causal, and temporal. The first three categories correspond to Fraser's (2009), respectively. Halliday and Hasan then added another classification, namely, temporal DMs. These DMs signal the order of events in a discourse. All the categories were grouped into one entity in Table 1 below. For each subcategory of DMs, the table provides a few examples of DMs retrieved from the same sources of these classifications. However, the researcher wants to highlight the fact that the provided subcategories of the four categories of DMs are not exhaustive as some were left out. Nonetheless, those left out subcategories were not excluded from the study but from Table 1 below due to some space constraints and presentation requirements.

Table 1. The categories and subcategories of DMs in English

Subcategories of DMs	Categories of DMs
	Elaborative-Additive DMs
Similarity	Likewise, similarly, in the same way
Exemplificatory	For instance, for example, thus
Emphatic	In addition, furthermore, moreover
Alternative	Or, or else, alternatively
	Contrastive-Adversative DMs
Emphatic	However, despite this, nevertheless, nonetheless
Avowal	In fact, as a matter of fact, to tell the truth, actually, in point of fact
Correcting of meaning	Instead, rather, on the contrary
Correcting of wording	At least, rather, I mean...
	Inferential-Causal DMs
Empathic	Consequently, accordingly, because of this
Result	As a result (of this), in consequence (of this), arising out of this
Purpose	For this purpose, with this in mind/view, with this intention, to this end
	Temporal DMs
Simple temporal relations (e.g., sequential)	Next, (and) then, afterwards, after that, subsequently
Complex temporal relations (e.g., Repetitive)	Next time, on another occasion, this time, on this occasion
'Here and now' relations (e.g., past)	Up to now, up to this point, heretofore

Note. The information within the table were all retrieved from Fraser's (2009) and Halliday and Hasan's (1976) classifications of DMs.

2.2 Previous Research on the Utilization of DMs

As a result of the importance of DMs in English texts, several studies were conducted in different disciplines, among different writers with different cultural backgrounds, and across different languages. For example, Fareh et al. (2020) attempted to investigate the ability of 100 Arab learners of English as a foreign language (*ALEFL*) in recognizing and producing DMs throughout their writings. To achieve that, the researchers conducted a test and analyzed 200 pieces of writing produced by the learners. Fareh et al. found that the learners either misused or underused DMs. Therefore, their ability to recognize and produce DMs was low.

On the other hand, Fattah and Yahiaoui (2019) compiled a corpus that consisted of two translated from English and into Arabic texts in addition to two originally written in Arabic texts; all the texts were composed by the same authors in similar domains. This study was driven by the urge to scrutinize the use of a single category of DMs, namely, contrastive. Findings suggested that contrastive DMs were more frequently used in the Arabic texts that were translated from English. Conversely, the texts that were originally written in Arabic exhibited less use of contrastive DMs. This was attributed to the fact that the language used in the source texts was English—that is, English writers are notoriously famous for using a high number of DMs across their writings which are regularly translated into the target texts.

Vogel (2008) also aimed to analyze the use of DMs in 20 essays written by Czech students of English and then compare their essays with five academic papers that were composed by native authors (i.e., British and American authors). The study demonstrated that the Czech students overly used DMs in their writings, whereas the native authors barely applied DMs all over their papers. Another study was conducted by Elahi and Badeleh (2013) that examined the distribution of DMs in RAs that were published on *English Language Teaching (ELT)* journal by native speakers of English (NSs) and non-native speakers of English (NNSs). The NNSs had a Persian background. 30 RAs were analyzed, 15 for each group. Therefore, the study revealed a significant difference between the two groups of writers. The NSs appeared to use contrast and purpose DMs much more than the NNSs who preferred other categories of DMs such as additive, temporal, exemplificatory, summary, and emphatic DMs. Both groups, however, employed comparison and similarity DMs quite regularly.

Based on Halliday and Hasan's (1976) framework, Nadoushani and Shirazi (2017) investigated 200 RAs that were published on two different journals, namely, *TESOL Quarterly (TQ)* and *Iranian Journal of Applied Linguistics (IJAL)*. They aimed to find out how NSs and NNSs used adversative DMs in their RAs, as well as to examine the differences between the two groups in such usage. The researchers found that the NSs applied adversative DMs in their RAs more than the NNSs. It was also revealed that the use of proper and correction DMs (i.e., subcategories of adversative DMs) exhibited a major difference between the NSs and NNSs. On the contrary, the use of contrastive and dismissal DMs (i.e., subcategories of adversative DMs) did not indicate any sign of difference between the two groups as to their applications and productions of such DMs.

The aforementioned studies explicated that DMs indeed play a significant role in English, in different contexts, and among different writers. It was demonstrated that NNSs mostly tend to either overuse, misuse, or underuse DMs in their writings. Conversely, NSs exhibited a higher level of proficiency in creating cohesive texts with or without DMs. Nevertheless, these studies commonly focused on the texts' authors attempting to relate these techniques of using DMs to them solely. They neglected the fields of study in which these texts took place. This study thus attempted to fill this gap by analyzing the utilization of DMs in 12 RAs published on two different journals representing contrastive disciplines: Humanities and medicine. That is, these RAs' fields of study were treated as a prominent criterion through which the researcher attempted to justify the different ways of utilizing DMs instead of relating them to the authors' cultural backgrounds. It is worth noting that a single section of these RAs was analyzed, namely, the discussion section.

3. Methodology

3.1 Textual Analysis

This study is an analytical one that aimed to scrutinize the utilization of DMs in two corpora of RAs that were published on different journals that revolve around contrastive topics; however, these RAs were all written in the same language (i.e., English). To achieve this, the researcher adopted two frameworks of DMs, as well as looked at the texts with a contrastive rhetoric (henceforth CR) lens. CR surfaced for the first time when the number of foreign students in American universities increased; therefore, they exhibited multicolored ways of writing that attracted the attention of many American composing teachers such as Robert Kaplan (Casanave, 2004; Hamadouche, 2013). Moreover, CR attempts to investigate the "differences and similarities in ESL and EFL writing across languages and cultures as well as across such different contexts as education and commerce" (Connor, 2002, p. 493). In other words, CR is "the study of cultural dimension of discourse" (Enkvist, 1997, p. 188).

As mentioned earlier, CR seeks to examine the different kinds of conventions in writing between either two languages, cultures, or discrete contexts. Hence, the current study built its foundation on the latter since it investigated the utilization of DMs in two different contexts, namely, medicine and humanities. Furthermore, the analysis process was much more on the macrolinguistic-level rather than the microlinguistic-level. This is because the researcher mainly examined a particular type of cohesive devices (i.e., DMs) by which writers organize, arrange, and connect their sentences in order to produce a consistent and clear piece of writing, rather than investigating minor aspects of the language (e.g., syntax and phonology). DMs are grammatical devices that can be classified under the umbrella of conjunctions. Besides, they aim to "tie the sentences together conceptually, so they are read as one cohesive entity of text" (James, 1980, p. 105).

3.2 Data Collection Procedure

The current study aimed to analyze the discussion section of 12 RAs published on different journals that reflect contrastive disciplines (i.e., medicine and humanities). This aim was driven by the urge to draw a conclusion about the utilization of DMs, to identify the category of DMs by which the authors mostly tended to arrange their writings, and most importantly, to spot the differences between these two disciplines. Clearly, the present study is qualitative in nature; therefore, the researcher looked for the data by herself. The data were then retrieved from two different journals, namely, (a) *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics* (henceforth AJMG) and (b) *Language Teaching Research* (henceforth LTR). To justify this specific selection of journals, AJMG has an impact factor of 3.3 and LTR has an impact factor of 3.4. In addition, these two journals are placed in Quartile 1 which gives them a high sense of reliability and credibility in comparison with other available options. AJMG tackles topics that investigate "genetic, epigenetic, and protein signaling mechanisms underlying neurologic and psychiatric disorders" (Author guidelines, 2021, Aims and Scope section). Whereas, LTR provides research articles that examine matters related to teaching foreign or second languages (Submission guidelines, n.d.). Hence, the prominent criterion of this study was met (i.e., contrastively analyzing texts from two different fields of study).

Afterward, the researcher searched for six RAs from each journal with a specific criterion in mind: These RAs had to be published recently or at least to be relatively recent. Thus, the AJMG's RAs were published between 2021-2022, while the LTR's RAs were all published in the first quarter of 2022. In addition, the researcher examined the appropriateness and quality of these RAs' discussion sections in order to reach the fairest findings as much as possible. See Appendix A for further information about the chosen RAs.

3.3 Data Analysis

The current study sought to analyze how DMs were utilized in a single section of 12 RAs, namely, the discussion

section. To fulfill this aim, the researcher chose two frameworks for the study to rely on. These frameworks involved Fraser's (2009) and Halliday and Hasan's (1976) classifications of DMs. Furthermore, the analysis process was embarked on manually. In other words, the researcher created two Word files and then listed all the discussion sections for each journal in each file. It is worth mentioning that the tables, figures, and direct quotations within each discussion section were eliminated from the analysis process and that the texts of the authors were exclusively read and analyzed. However, some of these discussion sections contained the limitations of the study (i.e., four out of six in the *AJMG* corpus) and the conclusion of the study (one out of six in the *LTR* corpus) which all were included in the analysis.

Each discussion section was then read repeatedly and carefully in order to capture its sense. The context was also taken into account all along the process of analyzing. Afterward, the researcher identified each DM and its purpose within that specific context by using the text highlighting and comment features of Word processor in order to address the research questions fairly and efficiently. Moreover, 12 tables were printed on separate papers and the four categories of DMs (i.e., elaborative, contrastive, inferential, and temporal) were used as main headings. Thus, each column within these tables was filled with the appropriate and related DMs. Finally, the researcher calculated the number of DMs for each category.

4. Results

This study aimed to analyze the utilization of DMs in the discussion section of 12 RAs that were published on two well-known journals (i.e., *AJMG* and *LTR*) that cover different fields of study (i.e., medicine and humanities). To this end, the researcher adopted two classification frameworks of DMs: Fraser's (2009) and Halliday and Hasan's (1976). These frameworks are consisted of four categories of DMs (i.e., elaborative, contrastive, inferential, and temporal). Each one of these categories was found within the comprised corpora.

Nonetheless, temporal DMs were not used in two RAs, one for each journal (i.e., *LTR* and *AJMG*). Inferential DMs were not used either in one out of six of the RAs of the *AJMG* corpus. As to elaborative and contrastive DMs, these two categories were notoriously famous because the authors employed them the most in their writings. More precisely, it was elaborative DMs that conquered the spotlight, and thus, they were excessively used across all the RAs. However, there were some differences in the utilization of DMs across the RAs of each journal.

4.1 Differences in the Utilization of Elaborative DMs

As mentioned above, the most commonly used DMs in the RAs of each journal were elaborative DMs. These DMs are used to place another idea on top of a previously mentioned one so as to extend or strengthen it (Mahanani, 2008). Besides, there are many examples of elaborative DMs in English such as *moreover*, *also*, *in addition*, *and*, *i.e.*, *for instance*, and *or*. In the *LTR* corpus, the researcher found more varieties of elaborative DMs in comparison to the *AJMG* corpus. For example, in the *LTR* corpus, the authors used somehow infrequent examples of elaborative DMs such as *more importantly*, *on the one hand*, *on the other hand*, *viz.*, *equally*, and *in other words*, whereas the authors of the *AJMG* corpus used more common examples of elaborative DMs such as *and*, *also*, and *or*.

The way by which the authors utilized some of their elaborative DMs differed as well. In the *LTR* corpus, for example, the abbreviations "i.e." and "e.g." (which are another ways of saying "that is" and "for example" in written texts, respectively) were used to connect two sentences in which these abbreviations—on some occasions—were barely placed in the middle of these sentences instead of using parentheses; as it is depicted in the following examples:

- 1) "As Excerpt 3 shows, when an explanation is being given about one word, clarifications of other words contained in that explanation may also be needed, *e.g.* [emphasis added] 'molten basalt' contained in the explanation of 'magma'" (An & Macaro, 2022, p. 18).
- 2) "Yet, Role B players in the experimental group were more actively involved and performed better in expressing modulation, *i.e.* [emphasis added] obligation, willingness, and ability..." (Xiao, 2022, p. 20).

On the other hand, the authors of the *AJMG* corpus always used parentheses to enclose the sentences by which they wanted to add more similar ideas or explanations via utilizing "i.e." and "e.g." Nonetheless, the authors of the *LTR* and *AJMG* corpora extremely utilized what Fraser (2009) referred to as "the primary DM of the [elaborative DMs] and has the broadest meaning of all [these] DMs," which is *and* (p. 301). The number of occurrences of each elaborative DM in the two corpora is exhibited in Table 2.

Table 2. The number of occurrences of elaborative DMs in the comprised corpora

Elaborative DMs	LTR	AJMG
And	252	230
In addition	1	4
Additionally	1	3
Also	35	15
Or	35	12
For example	1	2
For instance	2	1
Similarly	2	2
Alternatively	-	1
Furthermore	3	4
Moreover	4	2
More importantly	3	-
On the one hand	1	-
On the other hand	1	-
Equally	1	-
In other words	3	-
e.g.	29	6
viz.	1	-
i.e.	6	5
Total	381	288

4.2 Differences in the Utilization of Contrastive DMs

In the comprised corpora, contrastive DMs (henceforth CDMs) ranked second as to their number of occurrences. These DMs are used to indicate “a direct or indirect contrast between [the first segment] and [the second segment]” in discourse (Fraser, 2009, p. 300). Fraser (2015) clarified that the meanings of CDMs can be collectively expressed by a single and primary CDM, namely, *but*. Fraser further explicated two additional types of CDMs: (a) Semi-primary CDMs such as *however* and *nevertheless* and (b) secondary CDMs such as *conversely* and *instead*. Once again, the *LTR* corpus exhibited a more comprehensive range of CDMs which included DMs such as *on the contrary*, *even so*, *in fact*, *rather than*, *though*, *actually*, and *conversely*. All these examples were not used in the *AJMG* corpus. The number of occurrences of CDMs in both corpora is exhibited in Table 3.

Table 3. The number of occurrences of CDMs in the comprised corpora

CDMs	LTR	AJMG
But	13	10
Instead (of)	2	1
By contrast	-	1
Although	4	10
However	23	10
Yet	1	2
Whereas	2	1
In contrast (to)	2	3
Despite (doing) this/that	3	5
Nonetheless	-	1
Nevertheless	2	1
At least	2	5
Regardless of	3	1
still	2	1
Conversely	1	-
Actually	1	-
Rather than	1	-
In fact	1	-
though	2	-
Even so	1	-
On the contrary	2	-
Total	68	52

4.3 Differences in the Utilization of Inferential DMs

Inferential DMs are also called causal DMs by Halliday and Hasan (1976). These DMs have three functions: (a) They either attempt to indicate that what is coming is a justification for what has been said in a preceding segment in a discourse; (b) to strengthen and clarify the relationship between two segments; or (c) to “signal that there is some logical or rational grounds to conclude that [segment 2] should be taken as true or relevant” (Fraser, 2015, p. 51). Additionally, inferential DMs can be “expressed by *so, thus, hence, therefore, consequently, accordingly*, and a number of expressions like *as a result (of that), in consequence (of that), because of that*” (Halliday & Hasan, 1976, p. 256, italic in the original). However, inferential DMs were used more in the *LTR* corpus than the *AJMG* corpus. This difference between the *LTR* and *AJMG* corpora was caused by four specific inferential DMs: *Hence, so, as a result*, and *under the (doing) circumstances*. The number of occurrences of inferential DMs in the *LTR* and *AJMG* corpora is exhibited in Table 4.

Table 4. The number of occurrences of inferential DMs in the comprised corpora

Inferential DMs	LTR	AJMG
Thus	19	5
Because (of)	4	4
then	2	1
Hence	3	-
Therefore	2	3
So	1	-
Under the (doing) circumstances	1	-
As a result	3	-
Consequently	1	2
Total	36	15

4.4 Differences in the Utilization of Temporal DMs

According to Halliday and Hasan (1976), temporal DMs are used to signal the sequence of an event. To achieve this, writers tend to utilize several expressions in their discourse such as *then, finally, previously, to sum up, meanwhile, soon, after a time*, and *at once*. Unlike the aforementioned results, temporal DMs were used in the *AJMG* corpus more than the *LTR* corpus. However, there were a few expressions that were used in one corpus but not in the other such as *meanwhile* and *secondly*. The number of occurrences of temporal DMs in both corpora is exhibited in Table 5.

Table 5. The number of occurrences of temporal DMs in the comprised corpora

Inferential DMs	LTR	AJMG
Previously	2	4
Firstly	1	1
First	2	3
Secondly	-	1
Second	1	2
Fourth	1	1
Third	1	2
Meanwhile	1	-
Finally	5	3
Total	14	17

The results then indicated that elaborative DMs were the most used category of DMs in the comprised corpora. Moreover, each category of DMs occupied different and discrete ranks. Elaborative DMs were ranked first, CDMs were second, inferential DMs were third, and temporal DMs were the least used DMs in both *LTR* and *AJMG* corpora. All in all, the *LTR* corpus exhibited a wider variety of DMs than the *AJMG* corpus. In the subsequent section, these results will be discussed in much detail.

5. Discussion

In this study, the researcher analyzed how DMs were utilized in the discussion section of 12 RAs that were published on two different journals that represent different disciplines (i.e., medicine and humanities) and then

attempted to find out the differences between the comprised corpora. The study also aimed at identifying the most used category of DMs in both corpora, *LTR* and *AJMG*. Therefore, a number of considerable differences were spotted. Besides, elaborative DMs which “introduce the units of discourse which repeat and emphasize the key point or add relevant new information to the expressions mentioned previously and maintain the text’s cohesion and coherence” turned out to be the most used category of DMs in both corpora (Suleiman & Seyyedi, 2020, p. 57). This goes in line with Elahi and Badeleh’s (2013) study which demonstrated that the NNSs of English preferred the additive DMs (which is another term for elaborative DMs) more than contrastive and inferential DMs. Furthermore, the elaborative DM “and” was excessively used in both corpora. *And* as a DM is fundamental and quite common in most compositions since it can immediately tie “two words, phrases, clauses or prefixes together” so as to clarify or support what has been said previously (Cambridge University Press, n.d., para. 1). This result is consistent with Pulugan et al.’s (2017) and Suleiman and Seyyedi’s (2020) studies in which was found that the coordinating DM “and” was the most commonly used expression of elaboration. Suleiman and Seyyedi analyzed a corpus of 61 RAs that were written by NNSs and NSs of English in order to examine their utilization of elaborative DMs specifically. The results revealed that the NNSs and NSs overused “and;” nonetheless, the NSs used much more elaborative DMs than the NNSs.

On the other hand, the differences between the two corpora of this current study can be attributed to a number of justifications. Before that, it is worth recalling that the *LTR* corpus utilized more elaborative, contrastive, inferential DMs than the *AJMG* corpus. Nevertheless, the *AJMG* corpus exhibited a relatively higher degree of utilization of temporal DMs which goes hand in hand with the results of Elahi and Badeleh’s (2013) and Hussein and Mudhhi’s (2014) studies which demonstrated that temporal DMs were more used in a corpus of NNSs’ compositions than a comparative corpus of NSs’ writings. However, there are three possible explanations for such discrepancies between the two current corpora.

First, the fields of study in which these corpora existed were a potential influence. The *LTR* corpus is comprised of six RAs that revolve around topics which are pertained to second or foreign languages teaching, whereas the *AJMG* corpus is made up of six RAs that cover psychiatric and mental-health-associated issues. Consequently, the area of focus differs for each corpus and apparently this affected the way by which DMs were utilized. Since the *LTR* journal deals with languages teaching, its authors are presumably well-acquainted with the importance of DMs for English texts, and thus, more varieties of DMs were utilized and employed. In contrast, and since the *AJMG* journal tackles scientific and psychological events, the authors seem to apply elaborative and contrastive DMs more than inferential and temporal DMs.

Moreover, the abstractness of the *AJMG*’s field of study can account for the less use of inferential DMs (i.e., 15 inferential DMs were used in the *AJMG* corpus and 36 inferential DMs were used in the *LTR* corpus). The researchers cannot give evident reasons for mental disorders such as MDD and PTSD. Allsopp et al. (2019) explicated that mental and psychiatric disorders cannot be successfully diagnosed because (a) it is hard to precisely identify these disorders’ symptoms; (b) the duration of occurrence of mental disorders differs from one patient to another; (c) the severity of these disorders also plays a significant role in diagnoses; (d) the symptoms may overlap between a disorder and another; (e) the perspective of who determines the patients’ conditions affects the act of justification of mental issues; and (f) those patients’ previous social and emotional statuses may impact how these disorders are identified. Therefore, it appears to be difficult for psychiatrists and researchers to justify and infer their examined cases and that “this heterogeneous flexibility has important consequences for the diagnostic classification’s model of discrete disorders and the way cause is understood” (Allsopp et al., 2019, p. 20).

Second, these differences in the utilization of DMs in the *LTR* and *AJMG* corpora can also be attributed to the journals’ submission guidelines. On the one hand, the *LTR* journal does not devalue and diminish the importance of any section of the RAs since each section is required. On the other hand, the *AJMG* journal states that only the abstract, materials, methods, and the results sections are required; anything else is optional. Hence, and although speculative, the researcher hypothesized that this may be the reason why the *AJMG* corpus’ authors did not seem to utilize a wide variety of DMs similar to that one of the *LTR* corpus since the discussion section is not a fundamental part of their RAs. In addition, the number of words is restricted to 8000 words in the *LTR* journal, unlike the *AJMG* journal which does not put any kind of restrictions on the number of words, pages, or figures. That is, the *AJMG*’s authors have no word-limit that may hinder their ability to write which consequently lead them to carefully utilize DMs for their own good. Therefore, they can freely compose an article with no word-count restrictions at all which results in loosely written discussion sections. The existence and absence of this kind of restrictions may have an impact on how the four categories of DMs were utilized in the comprised corpora.

Third, another possible explanation for the differences in the utilization of DMs can be the number of the participated researchers in these RAs. The RAs of the *LTR* corpus were composed by either one, two, or three researchers. In the *AJMG* corpus, however, the number of the researchers was eight as minimum and eighteen as maximum. Therefore, the involvement of many researchers in a study may have an influence on the way an article is composed due to the possible differences in the researchers' language preferences and proficiencies.

As has been demonstrated in this section, elaborative DMs were the most utilized category of DMs in the two comprised corpora. More precisely, the elaborative DM “and” was commonly used in the *LTR* and *AJMG* corpora. Moreover, a number of differences were found between the two corpora as to the way by which elaborative, contrastive, inferential, and temporal DMs were employed in the discussion section of 12 RAs. The number of the researchers/authors in a study, the submission guidelines of the journals, as well as the fields of study may account for these spotted differences.

6. Conclusion

Halliday and Hasan (1976) explained that cohesion is a concept that “refers to relations of meaning that exist within the text, and that define it as a text” (p. 4). In their book, *Cohesion in English* (Longman, 1976), it was clarified that it [cohesion] is achieved through many strategies such as references, ellipses, substitutions, and conjunctions (i.e., DMs). Thus, and once Halliday and Hasan's book was published, studies that attempted to examine the cohesiveness of English texts were conducted onward (Arabi & Ali, 2014). The current study is indeed one of them. It took the same path as those previous studies since it aimed at analyzing the utilization of a single strategy that is frequently used to maintain the texts' cohesiveness, namely, DMs. More precisely, the discussion sections of 12 RAs that tackled contrastive topics were analyzed. The goal was to identify the differences in utilizing DMs within the comprised corpora, as well as to find out the most used category of DMs.

Therefore, the results indicated that elaborative DMs were the most used category of DMs in both corpora; moreover, the DM “and” was the most adopted DM across all the RAs. As to the differences, there were a considerable number of differences between the two corpora of RAs (i.e., *LTR* and *AJMG*). The *LTR* corpus contained a wider variety of DMs in comparison to the *AJMG* corpus in three categories of DMs: Elaborative, contrastive, and inferential DMs. However, the *AJMG* corpus exhibited a little increase as to the utilization of temporal DMs. These differences were then attributed to the fields of study for which these RAs were written, the submission guidelines of the two journals, and to the number of the researchers/authors involved in these studies. All in all, the *LTR* corpus contained more DMs than the *AJMG* corpus. These results may indicate useful implications and highlight prominent features concerning how DMs are utilized in humanities and medicine studies. Thus, this may give numerous researchers and authors from both fields of study a helping hand.

For future analyses, researchers may adopt quantitative methods to analyze how authors tend to utilize DMs in their texts. Besides, the cultural and linguistic backgrounds of the authors can be taken into account—if necessary. Finally, the number of the RAs of this study is considered a limitation in itself, for which researchers are advised to consider increasing the quantity of their samples.

References

- Afzal, N., Aldawood, A. A., & Alsager, H. N. (2020). Discourse markers in Arabic and English newspaper articles: The case of the Arabic *Lakin* and its English equivalent *But*. *Arab World English Journal*, 11(1), 154–165. <https://doi.org/10.24093/awej/vol11no1.13>
- Al Kohlani, F. A. (2010). *The function of discourse markers in Arabic newspaper opinion articles*. Doctor's thesis, Georgetown University. Retrieved from <http://hdl.handle.net/10822/552822>
- Allsopp, K., Corcoran, R., Kinderman, P., & Read, J. (2019). Heterogeneity in psychiatric diagnostic classification. *Psychiatry Research*, 279, 15–22. <https://doi.org/10.1016/j.psychres.2019.07.005>
- An, J., & Macaro, E. (2022). Exclusive use of the second language in classroom interaction in English Medium Instruction science classrooms: The beliefs of students and their monolingual teachers. *Language Teaching Research*. <https://doi.org/10.1177/13621688221075786>
- Arabi, H. A., & Ali, N. A. (2014). Explication of conjunction errors in a corpus of written discourse by Sudanese English majors. *Arab World English Journal*, 5(4), 111–130.
- Author guidelines. (2021, February 17). *Wiley Online Library*. Retrieved from <https://onlinelibrary.wiley.com/page/journal/1552485x/homepage/forauthors.html>
- Cambridge University Press. (n.d.). And. In *Cambridge dictionary*. Retrieved April 14, 2022, from <https://dictionary.cambridge.org/grammar/british-grammar/and>

- Carrió-Pastor, M. L. (2013). A contrastive study of the variation of sentence connectors in academic English. *Journal of English for Academic Purposes*, 12(3), 192–202. <https://doi.org/10.1016/j.jeap.2013.04.002>
- Casanave, C. P. (2004). *Controversies in second language writing*. The University of Michigan Press. <https://doi.org/10.3998/mpub.9691>
- Connor, U. (2002). New directions in contrastive rhetoric. *TESOL QUARTERLY*, 36(4). <https://doi.org/10.2307/3588238>
- Cowan, R. (2008). *The teacher's grammar of English: A course book and reference guide, with answers*. Cambridge.
- Elahi, M., & Badeleh, M. T. (2013). A contrastive study on transitional markers in English language teaching research articles written by English and Persian academic writers. *Journal of Language Teaching and Research*, 4(4), 839–844. <https://doi.org/10.4304/jltr.4.4.839-844>
- Enkvist, N. E. (1997). Why we need contrastive rhetoric. *Alternation*, 4(1), 188–206.
- Fareh, S., Jarad, N., & Yagi, S. (2020). How well can Arab EFL learners adequately use discourse markers? *International Journal of Arabic-English Studies*, 20(2). <https://doi.org/10.33806/ijaes2000.20.2.4>
- Fattah, A., & Yahiaoui, R. (2019). Contrastive analysis of concessive conjunctions in translated and non-translated Arabic texts: An exploratory study. *Advances in Language and Literacy Studies*, 10(4), 28–41. <https://doi.org/10.7575/aiac.all.v.10n.4p.28>
- Ferrante, L. D. (2021). Transitioning between small talk and work talk through discourse markers: Evidence from a workplace spoken corpus. *Brno Studies in English*, 47(2), 7–30. <https://doi.org/10.5817/BSE2021-2-2>
- Fraser, B. (1999). What are discourse markers? *Journal of Pragmatics*, 31, 931–952. [https://doi.org/10.1016/S0378-2166\(98\)00101-5](https://doi.org/10.1016/S0378-2166(98)00101-5)
- Fraser, B. (2009). An account of discourse markers. *International Review of Pragmatics*, 1(2), 293–320. <https://doi.org/10.1163/187730909X12538045489818>
- Fraser, B. (2015). The combining of discourse markers—A beginning. *Journal of Pragmatics*, 86, 48–53. <https://doi.org/10.1016/j.pragma.2015.06.007>
- Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Longman.
- Hamadouche, M. (2013). Intercultural studies in the Arab world from a contrastive rhetoric perspective. *Arab World English Journal*, 2, 181–188.
- Hamed, M. (2014). Conjunctions in argumentative writing of Libyan tertiary students. *English Language Teaching*, 7(3), 108. <https://doi.org/10.5539/elt.v7n3p108>
- Hussein, R. F., & Mudhhi, S. K. (2014). A corpus-based study of conjunctive adjuncts in the writings of native and non-native speakers of English. *English Linguistics Research*, 3(2). <https://doi.org/10.5430/elr.v3n2p18>
- James, C. (1980). *Contrastive analysis*. Routledge.
- Mahanani, N. (2008). *An analysis of the transitional words in essays written by the students of English Department of the State Islamic University of Malang*. Undergraduate thesis, the State Islamic University of Malang. Electronic Theses. <http://etheses.uin-malang.ac.id/id/eprint/4733>
- Mahmood, L. Z. (2008). A contrastive study of conjuncts in English and Arabic. *Journal of Education and Science*, 16(3), 1–19.
- Mohammed, A. S. (2015). Conjunctions as cohesive devices in the writings of English as second language learners. *Procedia – Social and Behavioral Sciences*, 208, 74–81. <https://doi.org/10.1016/j.sbspro.2015.11.182>
- Morrow, P. R. (1989). Conjunct use in business news stories and academic journal articles: A comparative study. *English for Specific Purposes*, 8, 239–254. [https://doi.org/10.1016/0889-4906\(89\)90015-X](https://doi.org/10.1016/0889-4906(89)90015-X)
- Nadoushani, S. M. M., & Shirazi, M. A. (2017). The locus of adversative conjunctions in the research articles: Have they niched or vanished? *SAGE Open*, 7(1), 1–6. <https://doi.org/10.1177/2158244017700946>
- Povolná, R. (2012). Causal and contrastive discourse markers in novice academic writing. *Brno Studies in English*, 38(2), 131–148. <https://doi.org/10.5817/BSE2012-2-8>
- Povolná, R. (2016). A cross cultural analysis of conjuncts as indicators of the interaction and negotiation of

- meaning in research articles. *Topics in Linguistics*, 17(1), 45–63. <https://doi.org/10.1515/topling-2016-0004>
- Pulungan, R., Purba, D. R., & Safnil (2017). A comparative study of types of conjunctions used in the results and discussion section of students' RAs and TEFLIN JAs published in 2015. *Journal of English Education and Teaching*, 1(1). <https://doi.org/10.33369/jeet.1.1.65-73>
- Seyyedi, K., & Suleiman, H. H. (2020). Additive discourse markers in English journal articles written by Kurdish and English native speakers: A corpus-based study. *International Journal of Linguistics, Literature and Translation*, 3(1), 56–68. <https://doi.org/10.2139/ssrn.3528326>
- Submission guidelines. (n.d.). SAGE Journals. Retrieved from <https://journals.sagepub.com/author-instructions/LTR#WhatDoWePublish>
- Vogel, R. (2008). Sentence linkers in essays and papers by native vs. Non-native writers. *Discourse and Interaction*, 1(2).
- Xiao, H. -Z. (2022). Role-based interaction analysis for FLL: A sociocognitive UBL perspective. *Language Teaching Research*. <https://doi.org/10.1177/13621688221077368>

Appendix A

Two Corpora of Research Articles

1. AJMG Corpus

- AJMG1*. Bakian, A. V., Callor, W. B., Chen, D., Christensen, E. D., Coon, H., Crockett, D. K., Crowell, S. E., DiBlasi, E., Docherty, A. R., Fraser, A., Gray, D., Keeshin, B., Kirby, A., Li, Q. S., Monson, E. T., Shabalin, A., Staley, M., & Yu, Z. (2022). Extended familial risk of suicide death is associated with younger age at death and elevated polygenic risk of suicide. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 1–14.
- AJMG2*. Campbell-Sills, L., Choi, K. W., Ge, T., Gelernter, J., He, F., Jain, S., Kessler, R. C., Smoller, J. W., Stein, M. B., Ursano, R. J., & Ware, E. B. (2021). Polygenic risk for major depression is associated with lifetime suicide attempt in US soldiers independent of personal and parental history of major depression. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 186(8), 469–475. <https://doi.org/10.1002/ajmg.b.32868>
- AJMG3*. Benke, K., Campos, A., Cohen, D., Eaton, W., Ialongo, N. S., Jin, J., Kahn, G., Kertes, D., Kuo, S. -C., Maher, B. S., Rabinowitz, J. A., Renteria, M., Uhl, G., Wagner, B. M., & Wilcox, H. (2021). Genetic propensity for risky behavior and depression and risk of lifetime suicide attempt among urban African Americans in adolescence and young adulthood. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 186(8), 456–468. <https://doi.org/10.1002/ajmg.b.32866>
- AJMG4*. Fullerton, J. M., Hadzi-Pavlovic, D., Hulvershorn, L. A., Mitchell, P. B., Nurnberger, J. I., Overs, B. J., Ridgway, K., Roberts, G., Schofield, P. R., Toma, C., & Wilcox, H. C. (2021). Effects of polygenic risk for suicide attempt and risky behavior on brain structure in young people with familial risk of bipolar disorder. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 186(8), 485–507. <https://doi.org/10.1002/ajmg.b.32879>
- AJMG5*. Benjet, C., Campos, A. I., Cruz-Fuentes, C. S., García-Marín, L. M., Martínez-Levy, G. A., Méndez, E., Rabinowitz, J. A., & Rentería, M. E. (2021). Suicidal ideation and planning among Mexican adolescents are associated with depression polygenic risk scores. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 186(8), 476–484. <https://doi.org/10.1002/ajmg.b.32864>
- AJMG6*. Agrawal, A., Colbert, S. M. C., Coon, H., Docherty, A. R., Hatoum, A. S., Johnson, E. C., Li, Q. S., Nelson, E. C., & Shabalin, A. (2021). Exploring the genetic overlap of suicide-related behaviors and substance use disorders. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, 186(8), 445–455. <https://doi.org/10.1002/ajmg.b.32880>

2. LTR Corpus

- LTR1*. Xiao, H.-Z. (2022). Role-based interaction analysis for FLL: A sociocognitive UBL perspective. *Language Teaching Research*. <https://doi.org/10.1177/13621688221077368>
- LTR2*. Teng, M., & Xu, J. (2022). Pushing vocabulary knowledge from receptive to productive mastery: Effects of task type and repetition frequency. *Language Teaching Research*.

<https://doi.org/10.1177/13621688221077028>

LTR3. Gagné, N., French, L. M., & Hummel, K. M. (2022). Investigating the contribution of L1 fluency, L2 initial fluency, working memory and phonological memory to L2 fluency development. *Language Teaching Research*. <https://doi.org/10.1177/13621688221076418>

LTR4. An, J., & Macaro, E. (2022). Exclusive use of the second language in classroom interaction in English Medium Instruction science classrooms: The beliefs of students and their monolingual teachers. *Language Teaching Research*. <https://doi.org/10.1177/13621688221075786>

LTR5. Lin, J. (2022). A structural relationship model for L2 oral proficiency, L2 interest, perceived importance of speaking, and out-of-class L2 contact. *Language Teaching Research*. <https://doi.org/10.1177/13621688221074027>

LTR6. Vold, E. T. (2022). Learner spoken output and teacher response in second versus foreign language classrooms. *Language Teaching Research*. <https://doi.org/10.1177/13621688211068610>

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