A Cross-linguistic Analysis of Interactive Metadiscourse Devices Employment in Native English and Arab ESL Academic Writings

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Abstract—This study presents a qualitative, comparative study of interactive metadiscourse in the academic writing of two groups of Native speakers of English and Native speakers of Arabic doctorate students working in the field of linguistics. It investigates the writers' capability to deploy the propositional discourse and interpretations in a coherent and convincing way appropriate to the projected readers' comprehensive abilities. A small-scale sample of 80 'discussion' and 'conclusion' chapters constitutes this corpus. This small-size corpus aligns with the contemporary trends in corpus-based work in the fields of English where smaller, more focused corpora, which have been set up for a specific research or pedagogical purpose, are much more likely to yield insights that are directly relevant to teaching and learning for specific purposes. Using Hyland's (2005) interpersonal model of metadiscourse, the discussion and conclusion chapters have been compared to examine the influence of intercultural and local institute academic culture contexts on the writers' use of interactive metadiscourse devices. The findings revealed a significant influence of the local institute culture on the Arab academic writing in most of the interactive subcategories.

Index Terms—interactive metadiscourse, corpus-based approach, ESL writing, writer-reader interaction

I. INTRODUCTION

Academic writing is amongst the foremost concerns of postgraduate students (both native and non-native) throughout the world in their pursuit of an academic degree. Students in general strive to demonstrating their competence in conducting original research, presenting pertinent knowledge of research field literature and producing high-quality writing in the form of theses or dissertations to meet the demands of their departmental, institutional, and later, field micro-communities (Lee & Casal, 2014; Roberts & Cimasko, 2008; Li & Wharton, 2012). Theses and dissertations are distinctive genres due to their differing purpose, rhetorical structures, and immediate reader expectations (Thompson, 2013). Meeting these demands imposes a further burden on non-native English students who typically deploy the propositional content, as viewed from the writers' perspective, with little or no awareness of the audience presence (Tse & Hyland, 2009; Tardy, 2006).

Conversely, academic texts are not just lists of propositional content. They involve social and communicative engagement where the writer/author employs various linguistics devices to assist the reader in organizing, understanding, interpreting, evaluating and reacting to texts the way the author/writer intended (Crismore et al., 1993; Hyland, 2000; Vande & Kopple, 1985). These linguistic devices, which facilitate writer-reader interaction in negotiation of their meaning, are the meta-discourse markers. Metadiscourse markers do not add anything to the prepositional content but are deployed to signal the writer's communicative intent by assisting the reader to organize, understand and assess the information presented (Crismore et al., 1993). They offer readers a way of understanding how a writer attempts to use certain language devices to direct a receiver's perception of the text and the writer's attitudes (Harris, 1991). They illuminate some aspects of how we project ourselves into our discourses by signaling our attitude towards both the content and the audience of the text (Hyland, 2005). Metadiscourse markers are viewed as the interpersonal resources used to organize coherently a discourse and convey its personality and credibility towards either its content or that of the reader (Hyland, 2005). Moreover, this meaning relays on integration of its component elements - both propositional discourse/content and metadiscoursal - which do not work independently of each other (Hyland, 2005).

Therefore, in order to gain a better understanding of the use of meta-discourse markers in the same genre of academic writings of graduate students with different mother tongue background within the same discipline (linguistics), this corpus-based study reports on a comparative analysis of metadiscourse use in doctorate thesis discussion and conclusion chapters written in English by Arab and American apprentice scholars.

II. LITERATURE REVIEW

A review of the literature pertaining to the use of meta-discourse markers in ESL/EFL writing reveals a large number of studies that have been conducted on the English language essays writing of Asian students. Most of these studies examine the employment of metadiscourse markers in Chinese ESL students' English essay writing such as (Deng,

2006 ; Li & Wharton, 2012; Jin, 2004; Liu, 2007; Luo, 2003; Wu, 2007; Xiong, 2007; Zhao, 2003); and in the essays written by Iranian ESL students (Crismore & Abdollehzadeh, 2010; Simin & Tavangar 2009; Pooresfahani & Khajavy, 2012). Fewer studies have been conducted to investigate the broad use of metadiscourse markers in the academic writing of Arab ESL students. These studies include those of Al-Qahtani (2006), Btoosh & Taweel (2011), Hinkel (2005) and Sultan (2011).

Most of these Arab ESL writing studies concentrate on features of textual organization (contrastive rhetoric). For instance, Al-Qahtani's (2006) study investigates the differences and/or similarities between research article introductions written by Arab scholars who obtained their postgraduate degrees from the USA and their native English speaking counterparts. He builds a small corpus of 15 research article introductions written by Arab and American scholars in peer-reviewed professional journals in the field of educational psychology. The findings revealed broad differences in terms of textual section organization and the use of meta-discourse markers. Al-Qahtani notices the use of a milder tone to claim the importance of the topic by native English speakers, compared to the use of over-assertion devices to express a much more assertive tone by the Arab scholars He also notices the use of repetition and parallelism patterns in the Arab scholars' texts. He refers their usage to first language interference being that Arab writers rely very heavily on circularity and repetitions to ensure clarity and prove persuasive to the reader.

The use of rhetorical features (specifically, inflation and over-assertion devices, verbal voices and polyphonic visibility) in Arab ESL learners and native speakers' academic writing is explored by Btoosh and Taweel (2011). This study attempts to uncover the differences between L1 Arabic English essay writings and native English speakers in terms of intensifiers related to inflation and hedges, casting light on the reasons underlying divergence in the Arab ESL learners' use of the target language features. The database for the study consists of two corpora; namely, the Interlanguage Corpus of Arab Students of English and the Louvain Corpus of Native English Essays. Corpus data was tagged and analyzed digitally by using the *WordSmith* tool. Findings indicate that Arab ESL learners use more intensifiers and inflation devices than native speakers. Hedges and downtoners are used more frequently in native speakers' corpora than in Arab student corpora. The authors mainly attribute this fact to the manifested persuasive rhetorical functions that such devices play in Arabic discourse. The findings also revealed Arab learners' overuse of intensifiers, their underuse of the passive voice, and strong visibility in the text in comparison with their native English writers.

The employment of hedges and intensifiers in Arabic ESL academic writings was investigated by Hinkel amongst a diverse sample of 745 American and ESL students enrolled in four American universities in 2005. The participating ESL students spent at least three years on academic preparations to meet the English language proficiency level requirements for joining their academic programs. The corpus consisted of placement and diagnostic tests in class essays. The findings indicate that academic texts written by Arab students contain fewer epistemic and lexical hedging devices in comparison to the native speakers' writing. On the contrary, there is a higher possibility that hedges are present than with their counterpart American students. Hinkel attributes the lower use of hedge to the interference of the Arabic language which does not place a high value on hedges as a means of persuasion. The study also indicates that the use of downtoners in Arabic students' essays was similar to those encountered in native speakers' text, and a higher level of assertive pronouns and frequency adverbs were used in the texts in question.

Sultan's (2011) study examines the metadiscourse function of English and Arabic research articles on linguistics in order to identify culture differences. Sultan (2011) studies attempts to analyze interactive and interpersonal metadiscourse markers to establish points of similarities and differences between the English and Arabic languages and cultures. He focuses on identifying the cultural differences between English and Arabic-speaking researchers. He examines a small corpus of approximately 50,000 words from seventy 'discussion' sections of linguistics research articles written by different contemporary native speakers of English and Arabic between 2002 and 2009 period in Arabic and English refereed linguistics journals. The researcher uses Hyland's (2005) meta-discourse model to identify the different metadiscourse markers. The study results indicate that Arab linguists use most interactive and interpersonal metadiscourse markers more frequently than their English counterparts. Endophoric, evidential and self-mention markers are used more frequently in the English linguists' writing than those of the Arab authors. Sultan attributes this fact to the Arabic tendency to go to greater lengths to establish coherence in the text in order to assist the reader in comprehending the purpose of the text (2011).

To date, comparatively few studies have addressed Arab ESL students' use of some metalinguistic functions and devices; precisely, the use of textual conjunctions and transitions in Arab ESL academic texts from a rhetorical contrastive prospective. None of these studies has looked at how trained Arab ESL postgraduate students (PhD students) employ the full range of interactive and interpersonal metadiscourse markers in presenting their opinions and interpretations of the finding of their research through the discussion sections of their dissertations for developing a better L2 writing instruction. The current study is a corpus-based approach to analysis the Arabic postgraduate PhD's discussion sections. Hyland's (2005) interpersonal model of metadiscourse is used to portray a holistic picture of the Arab postgraduate writers' presence in their academic texts via the use of meta-discourse markers.

III. RESEARCH AIMS AND QUESTIONS

This paper aims to investigate the presence of interactive and interpersonal metadiscourse markers in the 'discussion' sections of academic writing by Arab postgraduate ESL students'. The present study has been conducted in order to add to the emerging literature about the use of meta-discourse markers in an ESL writing context. It is therefore an attempt to bridge these gaps in Arab ESL writing research. In order to achieve these aims, the study sought to answer the following research questions:

1- What were the similarities and differences in the use of interactive meta-discourse by Arab graduate writers and by equivalent native English writers?

2- Within each interactive subcategory, what were the differences in metadiscoursal elements use between Arab graduate writers and their native English counterpart?

Together, these questions not only furnish us with a detailed picture of how metadiscourse markers are used by these two groups of writers, but also cast light upon the areas of weakness in Arab ESL writings that should be taken in consideration while teaching advanced writing courses.

IV. MODEL OF ANALYSIS

This research adopts Hyland's model of meta-discourse markers as the basis for identifying the similarities and differences of use by Arab and English writers. The model is divided into two main categories of interactive and interpersonal metadiscourse markers. Each category consists of five sub-group sets.

Interactive Metadiscourse Markers

Interactive markers empower the writer to deploy propositional discourse and writers' interpretations in a coherent and convincing way appropriate to that of the projected readers' comprehensive abilities. They are grouped into five sub-types:

1. Transitions Markers

These markers are used to show different semantic relations with the text. Their main function is to draw the reader's attention to steps of argument in the discourse and so help in shaping his or her understanding of the text. Transitions include three sub-categories: additive (additionally, also), comparative (although, however) and consequence (as a result, nonetheless) markers. Some examples of these subcategories from the data are:

(1) Her criterion relies on the presence or absence of an equivalent in the other variety. *Additionally,* I take into consideration the phrasal and sociolinguistic/semantic context of the term.

(2) The terminology that we generally use to describe the structure of a building is very limited. *Although* it is difficult to claim that the nature of the source…

(3) … the communicative value of the utterance at the expense of the semantic form. *Nonetheless*, this optimistic assumption instantly clashes with his rendition of the Arabic phrase.

2. Frame Markers

Frame markers function as an indicator of the change in the writer's order of discourse or steps of arguments. They help the reader to identify textual boundaries and the shift of arguments which successively make the discourse clear for the target reader. This category includes sequencers (in chapter x); stage labels (all in all); announce goals (aim/goal); and topic shifters (back to). The following are examples of these subcategories:

(1) …the situational analysis *in Chapter 6* illustrated, a great deal of variation exists as to the various sections…

(2) …capture or to relay the intended or the desired message to his TL audience. *All in all*, Davies has used many strategies while rendering…

(3) One major *aim* of this work has been to consider the impact of hegemonic structures…

(4) Going *back to* Figure 9.4 in Chapter 9, we see that Dimension 2 is actually a very strong descriptor of qualitative…

3. Endophoric Markers

Endophoric markers act to provide guidance for the reader's understanding of the text by signifying a relation to other parts of the text. Their aim is to facilitate comprehension and support the reader's interpretations of the text. Endophoric markers include two main sub-categories: non-linear (Figure X), linear (in section). Some examples of these sub-categories drawn from the data are:

(1) These comparisons are summarized in *Figure 4.2*

(2) This technique was applied in *Section 10.2.2* above in the interpretation of the characteristic features of theoretical articles

4. Evidentials

These are metalinguistic resources to cite an idea within the discourse community-based literature. These resources are essential in supporting the writer's command of the course of argument and consequently enables the reader to understand the discourse. Evidential markers are categorized into integral and non-integral citation markers, represented in the following examples from the data:

(1) This corroborated the findings reported by previous studies on the acoustic correlates of emphasis (Card, 1983; Al-Masri and Jongman, 2004)…

(2) … they should be removed from instructional content according to Clark and Mayer (2003)

5. Code Glosses

Code glosses briefly represent previous propositional information in a new format with further explanation to ensure reader's attainment of the writer's proposed meaning. These elaborations help to contribute to the creation of coherent, reader-friendly prose, while conveying the writer's audience-sensitivity and relationship to the discourse (Hyland, 2007). Code glosses include reformulation and exemplification markers, as illustrated in these two examples:

(1) Several factors that promoted agency *such as* reaching milestones, using literacy tools, life experiences, and forging strong identities…

(2) Almost all of the stimuli sounded more Southern than they did rural. *In other words*, Stacy is identified as being more or less Southern in the stimuli…

V. RESEARCH METHODS

A. Building the Corpus

The study aims to investigate the similarities and differences of meta-discourse (interactive and interpersonal) markers by analyzing a specific textual corpus that can reveal connections between linguistic features (interactive and interpersonal metadiscourse markers) and contexts of use (presenting the writers' interpretations and attitudes to the target community-based readers). The discussion and conclusion chapters of a doctorate dissertation are appropriate pieces of academic writing for constructing the corpus as they represent the writer's interpretation of the findings and link them with the current literature in a logical and clear form. Therefore, the corpus consists of 80 discussion and conclusion chapters randomly selected from recent linguistics dissertations written in English by Arab and Native English graduate students (henceforth, ArbWDCs and NEWDCs) between 2011 and 2014, taken from the ProQuest Dissertations & Theses (PQDT) database. It is to be presumed that these dissertations followed the academic conventions. Authors' family names were the indicator used to determine the linguists' mother tongue background for these selected dissertations. They are organized into two sub-corpora: Arabic Writers' Discussion and Conclusion chapters (ArbWDCs) and Native English Writers' Discussion and Conclusion chapters (NEWDCs) to form an electronic corpus of almost half a million (471554) words. The corpus description is provided in Table 1.

TABLE 1
DESCRIPTION OF THE CORPUS

	NEWDCS	ArbWDCs
Number of chapters	40	40
Length of texts (Range)	4313 - 16488	2958 - 11687
Average Length of chapters	6220	5570
Total number of words	248784	222770

The dissertations were electronically downloaded, labeled and saved as TXT files. The next step was to select the discussion and conclusion chapters, while the remaining chapters, references, and appendixes in both subcorpora were removed. Chapter titles, section headers, and graphics were removed from each of the selected chapters. The small-scale of this corpus aligns with the contemporary trends in corpus-based work in the fields of English for Specific Purposes (ESP) and English for Academic Purposes (EAP) where smaller, more focused corpora, which have been set up for a specific research or pedagogical purpose, are much more likely to yield insights directly relevant to teaching and learning for specific purposes. The corpus assembled satisfies Moreno's (2008) criteria of corpus comparison by drawing upon similar contextual factors such as genre, disciple, the writers' level of expertise and other dimensions.

B. Data Coding and Analysis

Wordsmith (v. 6.0.0.186, Scott, 2012), a text analysis and concordance tool, was used to examine the data for potential metadiscoursal items and labels within the chosen chunks of text. The concordances were then meticulously analyzed in their context to endorse that they serve specific functions as metadiscourse markers. For instance, the topic shifter marker *back to* acts as metadiscourse in Example 7 and as part of the content in Example 14.

(1) This issue dates *back to* the age of Pan-Arabism era six decades ago.

The identified metadiscoural instances were normalized to occurrences per 10,000 words to facilitate statistical treatment. Chi-square statistical analysis tests were performed to compare the use of metadiscoursal categories and subcategories in these two sub corpora to determine whether the differences in the occurrences were significant. The significance level was established at <0.05.

VI. RESULTS AND DISCUSSION

Table 2 illustrates the vital role of meta-discourse markers in empowering the writer to deploy the propositional discourse and its interpretations in a coherent and convincing way appropriate to that of the projected discourse. It also indicates that both corpora contain more interactive metadiscourse (50.83%; 57.57%) than interpersonal markers (49.17%; 42.43%) respectively, which is consistent with previous studies investigating met discourse use in theses and dissertations (see Hyland, 2004; Lee & Casal, 2014).

TABLE 2
METADISCOURSE USE BY THE TWO GROUPS

	NEWDCs	ArbWDCs
Number of words	248784	222770
Number of Metadiscourse Markers	25914	19142
Number of Interactive Markers per 10,000 words	529.75	484.54
Proportion of total met discourse	50.83%	57.57%
Number of Interpersonal Markers per 10,000 words	513.22	358.07
Proportion of total metadiscourse	49.2%	42.5%

A. Similarities and Differences in Interactive Metadiscourse Use between Arab Graduate Writers and Native English Writers

TABLE 3
COMPARISON OF INTERACTIVE METADISCOURSE IN THE TWO CORPORA

	NEWDCs			ArbWDCs		
	Tokens	per 10,000 words	%	Tokens	per 10,000 words	%
Interactive Markers	13186	529.57	50.83%	10978	484.54	57.57%
Transition	7296	293.03	28.10%	6299	279.33	33.15%
Frame Markers	2035	81.73	07.84%	1640	71.93	08.54%
Evidential	1640	65.86	06.32%	882	38.68	04.60%
Endophoric Markers	1031	41.39	03.97%	1033	45.3	05.38%
Code Glosses	1184	47.55	04.60%	1124	49.3	05.90%

The results of the analysis of the two corpora indicate that writers in both the groups are similar in using transition markers and Frame Markers in both corpora as shown in Table 3. Transitions are obviously the most commonly used interactive linguistic device. Transition markers constitute nearly one-third of the interactive met discourse markers in both corpora (33.15% of ArbWDCs and 28.1% of the NEWDCs). The use of these high frequencies in transitions pinpoint the writer's concern in guiding readers through these dense chapters to areas of argument in the discourse, so helping to shape his or her understanding of the text. Framework markers are the second most used category in Native English and Arab PhD writing corpora with less than one tenth of the total interactive devices (7.84% and 8.54% respectively). These small frequency levels of frame markers use in both groups signpost the text boundaries and the shift of arguments, which successively make the discourse clear for the target reader. Table 3 also shows differences between writers in these two groups in using the remaining three discourse groups of evidentials, code glosses and endophoric markers. Evidential interactive devices should be understood as the third interactive category used in the English native group with 6.32%, followed by code glosses and finally by endophoric markers as highly uncommon interactive devices with 4.6% and 3.97 respectively. The Arab writers' group has a different order. Code glosses form the third category of interactive devices used in gradate students' academic writings, with a 5.9% proportion of the total metadiscourse. Endophoric markers follow with about 5.4%, while evidential devices are the least used discourse devices with 4.6% of the total metadiscoursal markers in the ArbWDCs corpus.

The high frequency use of transition markers by NE and Arab ESL writers in this study echoes with the findings of interactive metadiscourse markers used by Hong Kong Chinese academic dissertations (Hyland, 2004) and with Spanish language theses (Lee & Casal, 2014). However, the remaining interactive categories vary in the frequency of their use in these three studies of graduate students' dissertations, as shown in Table 4.

TABLE 4
COMPARISON OF METADISCOURSE FINDINGS WITH SIMILAR STUDIES

	The study Findings		HYLAND (2004)	LEE & CASAL (2014)
Sample Size	471554 WORDS		4,000,000 WORDS	670463 WORDS
Writers L1	ENGLISH	ARABIC	HONG K0NG CHINESE	ENGLISH & SPANISH
disciplines	Soft (Linguistics)		Soft & Hard	Hard (Engineering)
Graduate Level	PhD		PhD & MA	MA
Frequent use High	Transition	Transition	Transitions	Transitions
	Frame Markers	Frame Markers	Evidentials	Endophorics
	Evidential	Code glosses	Code glosses	Code glosses
	Endophorics	Endophorics	Frame markers	Frame markers
Low	Code glosses	Evidentials	Endophorics	Evidentials

These differences in the frequency of level of use of these four interactive categories are related to disciplinary variation between soft (e.g. linguistics, public Administration,) and hard disciplines (e.g. Engineering, Computer Science, Biology), and substantial differences between the length and format of theses and dissertations.

B. Within Each Interactive Subcategory, What Were the Differences in the Use of Metadiscoursal Elements between Arab Graduate Writers and Their Native English Counterpart?

A further analysis of the data was conducted to provide a holistic image of which of these interactive devices within each subcategory portray the difference in use between these two corpora.

1. Transition Markers

TABLE 5
COMPARISON OF TRANSITION TYPES USE IN THE TWO CORPORA

Transition Type	NEWDCs			ArbWDCs		
	Tokens	per 10,000 words	%	Tokens	per 10,000 words	%
Addition	4515	181.33	61.9%	3902	174.2	62.3%
Comparison	1748	70.3	24%	1372	60.17	21.6%
Consequence	1033	41.3	14%	1025	44.96	16.1%

The NEWDCs corpus comprises of higher occurrences of transitions than the ArbWDCs corpus, consistent with the literature on English writers' rhetorical features providing explicit guidance to the reader in her navigation through the discourse. Table 5 shows marginally more frequent use of the transition additive and comparative devices than the Arab writers' corpus. These findings also show English writers' preference for a progressive style over the retrogressive style previously used, one that employs more additive devices than comparative and consequence devices. Arab writers also employed the same progressive style over the retrogressive style with approximately the same ratio (2:1) as a result of using the same writing genre to meet the demands of their departmental, institutional, field micro-communities (Lee & Casal, 2014; Roberts & Cimasko, 2008; Li & Wharton, 2012). Differences in the frequency use of these transition devices in these three sub-categories are to be attributed to divergent degrees of experience in composing research genres between the writers in the two corpora and between novice and expert L2 writers in the ArbWDCs group (Hyland, 2008).

2. Frame Markers

Frame marker devices are the second most common used interactive categories in both groups. As shown in Table 6, the Native English writers used the frame markers more frequently in the four subcategories than in the Arabic writers' corpus. Sequences are the most frequently used devices with almost half of the share of the frame markers used in both groups, followed by topic shifters constituting more than two-third of the frame markers total portions (71.17% and 79.8%) respectively. These findings suggest that writers in both groups employ these linguistic devices to signpost internal organization, text boundaries and the shift of arguments, all of which make the discourse clear for the target reader. Findings indicate a large difference (2:1) in the use of stage labeling devices in the NEWDCs corpus in comparison with that within the ArbWDCs corpus. Announcing goal is the least used frame marker devices in both groups.

TABLE 6
COMPARISON OF FRAME MARKERS SUB-CATEGORIES USE IN THE TWO CORPORA

Frame Marker Sub-categories	NEWDCs			ArbWDCs		
	Tokens	Per 10,000 words	%	Tokens	Per 10,000 words	%
Sequences	939	37.7	46.13%	847	37.15	51.7%
Announce goals	281	11.3	13.83%	173	7.59	10.5%
Stage Labeling	305	12.25	15%	159	6.97	9.7%
Topic Shifters	510	20.48	25.04	461	20.22	28.1%

3. Evidentials

Evidentials are amongst the least represented interactive met discourse devices in the English (6.32%) and the Arabic subcorpora (4.6%). This is due to only the the discussion and conclusion chapters being included in this corpus. In these two chapters, writers vary in using evidential devices to establish credentials (i.e. support their stances). The findings indicate a difference in evidential use by writers in both corpora. As shown in Table 7, the English corpora used twice as many evidentials as the Arabic writers (65.86 to 38.68 per 10,000 words), in explaining the findings and in justifying their claims and conclusions by establishing more rigorous intertextual support with previous research represented in the previous chapters of their dissertations and theses (Hyland, 2004; Lee & Casal, 2014).

TABLE 7
COMPARISON OF EVIDENTIAL SUBCATEGORIES USE IN THE TWO CORPORA

Evidential Types	NEWDCs			ArbWDCs		
	Tokens	Per 10,000 words	%	Tokens	Per 10,000 words	%
Integral citation	103	4.14	6.3%	94	4.12	10.8%
Non-integral citation	1537	61.72	93.7%	788	34.56	89.2%

4. Endophoric Markers

Despite endophorics' essential role in guiding readers' understanding of the text and signifying to other parts of the text in order to facilitate comprehension and support the writers' interpretations of the text, they are very infrequently used interactive metadiscourse in both corpora (less than 5.5%). The Arabic corpus used slightly more endophoric devices than the English Corpus, as illustrated in Table 8. The non-linear and linear low reflexivity endophoric subcategories are mostly used in the Arabic corpus, while the linear devices at the sentence level and linear low reflexivity are the most frequently used in the English corpus.

TABLE 8
COMPARISON OF ENDOPHORIC MARKER SUB-CATEGORIES IN THE ENGLISH AND ARABIC CORPORA.

Endophoric Markers Types	NEWDCs			ArbWDCs		
	Tokens	Per 10,000 words	%	Tokens	Per 10,000 words	%
Non-linear	348	13.97	33.7%	283	12.41	27.4%
Linear chapter/section level	211	8.47	20.5%	133	5.83	12.9%
linear sentence level	207	8.31	20.1%	315	13.82	30.5%
linear low-reflexivity	265	10.64	25.7%	302	13.24	29.2%

5. Code Gloss Markers

Code glosses are the least frequent interactive metadiscourse category found in the English Category (4%). On the contrary, the Arabic writers' corpus is constituted of more gloss subcategories (6%). The findings presented in Table 9 reveal much more frequent use of exemplifications devices than reformulations in English and Arabic corpora (64% and 57% respectively). Hyland (2007) elucidates that soft fields, such as linguistics, use more examples to reconstruct contexts for a broader readership with less of a shared background. Although reformulation devices serve a paramount function in explaining, elaborating and rephrasing the statement to help the readers understand the main ideas of a text, as devices they are less frequently used. Lee & Casal (2014) attribute this trend to a lingua-culture influence.

TABLE 9
COMPARISON OF ENDOPHORIC MARKER SUB-CATEGORIES IN BOTH CORPORA

Code Glosses Types	NEWDCs			ArbWDCs		
	Tokens	Per 10,000 words	%	Tokens	Per 10,000 words	%
Reformulation	429	17.23	36.24%	481	21.1	42.8%
Exemplification	755	30.32	63.76%	643	28.2	57.2%

VII. CONCLUSION

The findings of this study indicate that, in terms of academic writing, Arab graduate writings appear to be influenced by the discipline of particular genres and the expectations of the institute and examiners of producing successful dissertations. However, Arab writers' L1 interference view of the writer's role is reflected in their use of limited number of transitions, frame markers and evidentials. The native English writers, on the contrary, employ greater transitions, frame markers and evidential devices to assist the reader to navigate through the texts. These results are in line with the previous studies that compared theses and dissertations written both by Native English and non-native writers such as Hyland (2004) and Lee and Casal (2014).

VIII. RESEARCH IMPLICATIONS

The findings of the analysis here show a variation in the Arab writers' use of interactive devices, one that should be taken into considerations by teachers during the English Learning/preparation programs (ELP). Students should be provided with extensive training and detailed feedback in reference to their use of these devices in their academic writing courses at ELP advanced levels.

Limitations and Possibilities for Further Research

The present study investigated the use of interactive metadiscourse markers in a specific-genre context (linguistics) by examining small-size sample corpora. These findings therefore serve as a trigger for an ambitious researcher to pursue further projects examining large corpora covering whole chapters of dissertations. Further research could investigate the use of these met discourse markers by Arab writers in two different institutional culture contexts (Home country vs English-speaking community) and between different disciplines (soft vs hard disciplines).

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