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An Investigation into Metadiscourse Elements Used by Native vs. Non-Native University Students Across Genders

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Abstract

The present study has aimed at finding out whether or not students' language background and gender bring about a distinction between the frequency and types of metadiscourse elements occurring in their papers. To this end, a dataset of 40 student papers in four series written by a native male, nonnative male, native female, and nonnative female writers was analyzed quantitatively and qualitatively in terms of the use of metadiscourse resources following the metadiscourse model proposed by Hyland and Tse (2004). The results of the frequency count and chi-square tests (p-value<0.05) revealed more or less notable differences in the overall employment of metadiscourse markers in the two major types of metadiscourse resources (i.e., interactive and interactional) and the categories related to each type (i.e., transitions, frame markers, etc. versus hedges, boosters, attitude markers, etc., respectively) by the four groups of university students.

Keywords: Metadiscourse, Interactive Vs. Interactional Resources, Gender, Native Vs. Non-Native Writers

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1. Introduction

Studies of metadiscourse gained prominence among other revolutionary perspectives developed by the early 1990s. These new perspectives were against the strong emphasis on propositional meaning in text analysis (Vande Kopple, 2002). In actual fact, metadiscourse emerged as an alternative to more traditional views in which language was regarded merely as a propositional and expository medium.

The term 'metadiscourse' was first coined by Harris (1959) to label those features in texts which contained no essential information by themselves but commented on information-carrying parts of a text. The concept of metadiscourse has been further elaborated and investigated by such researchers like Williams (1981), Vande Kopple (1985), Crismore (1989), and Hyland (2005, 2015). As a strategy to increase text readability through cohesion and coherence, metadiscourse has also been termed as a self-referentiality technique (Ventola & Mauranen, 1991) and a pre-revealing feature or metamessage (Johns, 1997). It has also been extensively identified as metalanguage (Lyons, 1977), non-topical linguistic material (Lautamatti, 1978), metatalk (Schriffin, 1980), discourse about discourse or communication about communication (Vande Kopple, 1985), and 'signaling devices' (Crismore, 2004) among many other definitions in the literature.

Metadiscourse is a widely employed term in current discourse analysis and English for Academic Purposes, but it has not always been used to represent the same concept. Traditionally, metadiscourse elements have been categorized into textual and interpersonal ones. Early in its emergence, metadiscourse was conceived as writers' attempt to help target receivers in shaping their perception of a text (Harris, 1959). According to Perez-Ltanada (2003), the textual and interpersonal metadiscourse can be viewed from two

convergent disciplines, cognitive and pragmatic. From the cognitive perspective, textual metadiscourse enables the audience to recreate the organizing structure of the text, identify the logical connection of contents, process the incoming information more readily and activate the necessary schemata for communication. From the pragmatic view, the interpersonal metadiscourse enables them to make sense of writer or speaker's implicatures and attitudes. Textual metadiscourse reflects the organization of discourse, and interpersonal metadiscourse represents the writer's stance towards both the information in the text and his target readers. In these early approaches, the concept of metadiscourse was restricted to those aspects which refer to internal elements of the text itself. These elements are regarded as building blocks to construct the text as a text.

This early simplistic view of metadiscourse has been refined and redefined and has come to be seen in the interactive model as a cover term for a variety of tools adopted by writers to explicitly organize their texts, engage their audience, and indicate their stance to both their material and their readers (Hyland, 2005, 2015). This revisited concept of metadiscourse was inspired by the ground-breaking studies in the 1980s such as those by Vande Kopple (1985) and Crismore (1989). According to this more recent view, language is not used solely to convey information about the world outside; it also acts to present the information through organizing the text itself, engaging the readers, and shaping their understanding. This promising account of metadiscourse supports the fact that academic texts do not merely provide a plausible representation of external realities, but use language as a tool to put forward a credible picture of the writers.

The interactive perspective, therefore, regards metadiscourse as a coherent set of interpersonal resources used to organize a discourse or the

writer's stance towards either its content or the reader (Hyland, 2000). Interactive mechanisms used in the interactive domain of metadiscourse allow the writer to control readers' access to information in such a way that impose his or her desired interpretations. Metadiscourse is regarded as a self-revealing linguistic device reflecting the three parties involved in communication: the written text, the writer, and the assumed readers of that text (Crismore, 1989; Hyland, 2004). It discloses how writers reflect themselves in their words to involve readers, indicate their directive and organizing effort, commitments, and attitudes (Hyland & Tse, 2004).

If we come to an understanding that a considerable portion of meaning buried in each text deals with the internal interaction of printed words and the reader, then we can come to a conclusion that metadiscourse is a tool to make the information coherent, understandable and persuasive to certain audience. It can be argued that all metadiscourse elements are part of interpersonal aspects of texts as they provide writers with a rich repertoire of linguistic tools to tailor their requirements with the needs and expectations of their readers.

In this new understanding of metadiscourse, the Hallidayan division between the textual and the interpersonal planes of discourse was abandoned, and Thompson's (2001) explanation of interactive and interactional resources as two inter-related aspects of interaction was adopted. This interpersonal image of metadiscourse seems to be the most comprehensive and probably advantageous one. The interactive features in this framework are used to organize propositional content so that the target readers find it coherent and convincing. The interactional subcategories take account of the ways writers manage the interaction by stepping into the text and commenting on their message.

Metadiscourse in academic discourse has enjoyed extensive attention as a central rhetorical tool which could considerably influence the communicative ability of the members of the academic community. Swales (1990) illustrates the discourse community as having apparatus for communication among its members; thus, taking advantage of specific genres in communicating their aims. As you might expect, the multilingual members of these communities attempt to follow relatively comparable patterns in their behavior so as to maintain their membership (Bizzell, 1992). Here, writing is used as a social act by these members to communicate among themselves and with other communities

In the literature, academic discourse has been approached through two perspectives. From the more traditional point of view, academic texts are a mere account of findings and arguments expressed through a distant and objective piece of writing. Discourse is composed of facts that solely support a larger one. In the second perspective, which is more widely accepted, discourse is regarded as a form of social engagement, entailing interaction between writers and their audience. Widdowson (1984) suggests that academic discourse requires writers to consider the target readers and their relevant schema, processing needs, and reaction to the text. Crismore and Farnswarth (1990) also emphasize the interaction between writer and readers in academic genres.

Metadiscourse has been studied in various genres including casual conversation (Schiffrin, 1980), company annual reports (Hyland, 1998) slogans and headlines (Fuertes–Olivera et al., 2001); newspaper discourse (Le, 2004; Dafouz-Milne, 2008) and more extensively in academic genres. Various researchers studied how the knowledge of metadiscourse elements could help university students in their writing and reading comprehension. Camiciottoli

(2003), for example, examined the effect of metadiscourse on reading comprehension of Italian university students and found that the higher frequency of some types of metadiscourse could improve students' reading comprehension. Steffensen and Cheng (1996) have also studied the effect of instruction of metadiscourse elements on the writing performance of university students. They concluded that the higher variety and frequency of using metadiscourse led to better writing performance. More recently, Fu and Hyland (2014) examined some of the ways that interaction results in the success of two journalistic genres: popular science and opinion articles. The analysis of 200 popular science and 200 opinion texts showed that despite the broadly similar audience and sources of these genres, authors structure their interactions very differently, contributing to the rhetorical distinctiveness of these genres and variations in communicative purposes.

Contrasting English and other languages regarding academic genres have been the subject of various inter-language and intercultural studies over the last few decades. Various studies inspired by the contrastive rhetoric of Kaplan (1966) have tried to compare rhetorical conventions of different cultures and languages with English (Conner, 1996), first and foremost with the intention of disclosing how nonnative speakers use rhetorical resources differently from their English counterparts when trying to communicate with other members of their discourse communities. A variety of differences in rhetorical elements were revealed in studies between native and nonnative speakers. For example, Mauranen (1993) studied English texts written by non-native Finnish and Native Anglo-American students. She concluded that Anglo-Americans tried to be as explicit as possible in their writing as they used more metadiscourse markers than Finnish students. Vassileva (2001) compared Bulgarian and English research articles and found substantial differences between the two

languages regarding the use of metadiscourse elements. Crismore, Markkanen, and Steffensen (1993) investigated texts written by Finnish and English native writers in terms of metadiscourse elements and explain the observed differences from the perspective of sociocultural motivations.

Academic texts written in different languages or by native and non-native writers have been compared and contrasted in the context of various academic genres such as book reviews (e.g., Moreno & Sua´ rez, 2008, 2009 regarding Spanish and English; Bondi, 2009 regarding English and Italian; Vassileva, 2000, 2001 regarding English and Bulgarian; Mauranen, 1993 regarding English and Finnish languages), Abstracts (e.g., Swales & Van Bonn, 2007; Molino, 2010), textbooks (e.g., McCabe, 2004) and research articles (e.g., Salager-Meyer et al., 2003; Moreno, 2004; Sheldon, 2009). The findings of the study by Mardani (2017) revealed that meta-discourse markers play a very significant role in persuasive texts in both writing and translating. His study centered on writing and translating in the Persian language concerning the use of metadiscourse in persuasive texts.

Lee and Subtirelu (2015) investigated teachers' use of metadiscourse in EAP lessons and academic lectures. Two corpora of instructor contributions to classroom discourse were compared to examine the influence of pedagogical content and context on teachers' enactment of metadiscourse in the classroom and found that the aspects of teaching and learning influence teachers' use of metadiscourse in significant ways: EAP teachers seem to be more concerned with explicitly framing the discourse primarily to set up classroom tasks and engendering greater student involvement and participation, while university instructors' priority lies in establishing relationships between ideas in the unfolding arguments of lectures. Kawase (2015) investigated how research writers construct metadiscourse in the introductions of their Ph.D. theses and

subsequently published research articles. He found that the majority of the writers make greater use of metadiscourse in their article introductions.

Alyousef (2015) explored the use of metadiscourse markers in three multimodal management reports written by 10 international Masters' of Accounting students and found a high frequency of interactive and interactional markers in the orthographic texts compared with a lack of implicit interactive markers and a high frequency of implicit interactional markers in the tables and graphs.

Bruce (2014, 2016) examined the expression of criticality in the literature review that occurs in the Introduction sections of academic journal articles in two social science disciplines: applied linguistics and psychology. The findings show systematic use of three generic elements to establish this type of stance: recursive use of content-structuring moves, the metadiscourse device of attitude markers and a concessive contrast relation between propositions.

An inseparable aspect of metadiscourse is a gender-specific investigation of metadiscoursal resources used by men and women. These types of analysis are practiced to reveal how men and women rely on various metadiscoursal strategies to express their meaning through the texts to their target audience.

It has been found that male and female writers resort to different linguistic resources in their academic writing in order to express themselves and communicate with peer researchers (Tannen, 1994; Herring, Johnson & Dibenedetto, 1995; Holmes, 1995). I have further been suggested that women tend to adopt a more polite and personal stance in their arguments, while men are more willing to be competitive and assertive (Flynn, 1988). However, Cambridge others refuted such claims and argued that men and women project themselves almost in the same way in their writing (Lynch & Strauss-Noll, 1987). Some more recent empirical efforts within specific disciplinary cultures

(e.g., Tse & Hyland, 2006) have backed up earlier claims regarding the effect of gender on academic discourse.

As documented in the literature, writers' gender can influence the interpersonal metadiscourse tools they choose to express themselves. The advent of studies in the domain of gender-based preferences in using linguistic forms can be traced back to 1970s (Grey, 1998). Since that time, various studies have been carried out on the role of gender in the choice of linguistic resources. The majority of investigations into gender differences with respect to metadiscoursal choices were focused on spoken language. The subject of these studies has normally been conversation and findings have more or less supported gender-differences in using various linguistic resources. As an example, Tannen (1994) found that women used more supportive and cooperative styles in their talks, while men employed more competitive strategies which led to their dominance in mixed-gender conversation.

Holmes' (1984) study is among the scarce studies which were done in the context of written language. The result of his study on English essays revealed that females used interpersonal metadiscourse more significantly than males. Female writers employed 'attitude markers', 'commentary markers' and 'interpretive markers' including code glosses, illocution markers, and announcements more frequently than men. However, male writers tended to use textual metadiscourse including connectives, sequencers, topicalizers, and reminders; and used hedges more than their female counterparts did. In another study with a similar focus, Crismore et al. (1993) compared the frequency of metadiscourse in persuasive essays of male and female university students. They found that both males and females used interactional metadiscourse elements more frequently than interactive ones, but females used them more than males. The result of an interesting study by Janssen and

Murachver (2004) revealed that the choice of topic had a decisive effect on the type of language used by male and female writers. Female writers tended to reflect their preferential elements in socio-emotional texts, but male writers favored elements more prominent in politics. They came to a conclusion that certain choices of topics can eliminate the effect of gender on the application of metadiscourse types. In a similar study conducted by Herring and Paolillo (2006), it was found that male preferential elements were prominent in filters, while female preferential ones were more significant in dairies. In a more recent investigation on the role of gender on academic book reviews by Tse and Hyland (2008), it was revealed that both genders employed the interactional metadiscourse features significantly more than interactive, particularly by male writers. Male writers were more directed at using 'boosters', 'hedges', 'engagement markers', and 'self mentions'. Regarding interactive features, female writers tended to use more transitions. However, the observed differences between the two groups in terms of using code glosses were negligible.

This study seeks to compare employment of metadiscourse resources – namely, interactive and interactional ones with their sub-categories as proposed by Hyland (2005) -- in student papers written by university students with different language backgrounds (i.e., native and non-native ones) and genders in order to find out whether they follow similar or different patterns in using metadiscourse markers, and to reveal how they project their identity as native or non-native speakers of English.

The study further attempts to bridge the gap in the literature regarding the interaction of language background and gender in the use of metadiscourse elements in a written academic genre, namely, student papers. More specifically, the study aims to address the following four research questions:

1. Is there any significant difference between metadiscourse elements used by Native and Non-native female writers (NF vs. NNF) in their research articles in English?
2. Is there any significant difference between metadiscourse elements used by Native and Non-native male writers (NM vs. NNM) in their research articles in English?
3. Is there any significant difference between metadiscourse elements used by female and male native writers (FN vs. MN) in their research articles in English?
4. Is there any significant difference between metadiscourse elements used by female and male non-native writers (FNN vs. MNN) in their research articles in English?

2. Methodology

2.1. The Materials

The materials for this study consisted of 40 student papers written in English by university students. They were selected randomly from four sub-corpora (10 from each group) including texts written by native female writers, native male writers, nonnative female writers, and nonnative male writers (henceforth, abbreviated to NF, NM, NNF, and NNM, respectively). All the research articles were available in the form of electronic versions, and they could be scrutinized for metadiscourse features by the Concordance software. It is worth mentioning that the reference sections of articles were not included in the corpora. A brief description of the material used in the study is presented in table 1. The research articles were selected from the Michigan Dataset of Upper-level Student Papers (2009) which is a collection of around 830 A grade papers (roughly 2.6 million words) from a range of disciplines across four

academic divisions (Humanities and Arts, Social Sciences, Biological and Health Sciences, Physical Sciences) of the University of Michigan. The genre of student paper normally involves a (more or less) novice text producer addressing an expert audience – that is, academic people.

Table 1. *Dataset Summary*

	N F	N M	NN F	NN M	Total
No of papers	10	10	10	10	40
Total number of words	29,228	28,991	31,772	31,565	121,556
Range	2253-3905	1650-4543	1690-4655	1424-5126	

2.2. Instruments

2.2.1. Framework of Analysis

For the purpose of carrying out metadiscourse exploration in the current study, a recent metadiscourse framework introduced by Hyland and Tse (2004) and Hyland (2005) was used. In this model, Hyland and Tse (2004) categorized metadiscourse items into two major divisions, each of which including five subcategories. The definitions and examples of each category are presented briefly in Table 1 and more comprehensively listed in Appendix A.

Table 2. *An Interpersonal Model of Metadiscourse* (adapted from Hyland, 2005, p. 49)

Category	Definition	Examples
Interactive	Help to guide the reader through the text	
Transitions	Express relations between clauses	Yet, still, but,
Frame markers	refer to discourse acts, sequences, and stages	in sum, then, now,
Endophoric markers	refer to information in other parts of text	noted above, see figure x earlier
Evidentials	refer to information from other texts	Date, name, cite, etc.
Code glosses	elaborate propositional meaning	Namely, I mean, e. g.
Interactional	Involve the reader in the text Resources	
Hedges	withhold commitment and open dialogue	about, almost, seems
Boosters	emphasize certainty and close dialogue	must, never, no doubt
Attitude markers	expresses writers' attitude to propositional information	!, admittedly, agree
Self- mentions	explicit reference to author(s) I; we; my; me; our	I, we, the author
Engagement markers	explicitly build relationship with reader	allow, let us, suppose

2.2.2. Concordance Software Program

The AntConc 3.2.1 text concordance software was used in exploring metadiscourse elements. This program is a comprehensive text scrutinizing instrument that searches for pre-specified elements in the dataset. A picture of the result page of AntConc program is given in appendix B.

2.3. Procedure of Data Collection and Analysis

Each dataset was electronically searched for the items which commonly perform metadiscourse functions in academic writing (see appendix A), using AntConc concordance program and the instances were recorded for further analysis. Then, each individual token which was a potential example of

metadiscourse elements was functionally analyzed in its linguistic context to ensure it played the assumed metadiscoursal role.

The following sample outputs of the concordance program show how a single item could be counted as a metadiscourse element or an irrelevant one based on the context in which it appears. In each pair of the following examples, the first underlined word was retained as a metadiscourse feature, while the second one was sifted out as an erroneous example which cannot be considered as an instance of metadiscourse elements.

(1)

i. … my data in comparison to those expectations. Second, I discuss important allophonic alternation …

ii. … to read the other person's message, a few seconds to type a response, and a second to send …

(2)

i. … cross-derivative of utility is greater than zero. That is, if this cross-derivative is positive, …

ii. … stance this is a concept (not really an approach) that is an essential feature of any …

(3)

i. … to experiencing higher levels of depressed mood. Overall, this study contributes to …

ii. Some previous literature has correlated overall attachment scores, including all …

(4)

i. … point is evaluated. This is done using the following formulas: Figure 3.1. …

ii. … reform and political parties within Indonesia <u>following</u> president Suharto's resignation in …

2.4. Reliability of the Analyses

In order to ensure the reliability of the analyses and to improve the rating credibility, one more rater as well carried out the process of verification/rejection of potential metadiscourse elements. Using the Kappa statistic, the researchers found that there exists an inter-rater reliability index of 0.958 between the analyses. Accordingly, the consistency between the raters turned out to be rather high.

2.5. Quantitative Analysis

The raw frequency count of metadiscourse elements in each paper was adjusted to the criterion length of 3,000 words (i.e., the average length of each paper), and the results were rounded up. In order to check the significance of observed differences, the chi-square test was applied 52 times for the total number of metadiscourse elements--that is, for the interactive and interactional subdivisions, as well as for the ten metadiscourse subcategories between the 4 pairs of comparisons (NNF vs. NF, NNM vs. NM, NNF vs. NNM, and NF vs. NM). The significance level was determined at 0.05, with one degree of freedom for each pair of comparisons.

3. Results

Table 3, below, shows the overall results of counting frequency items to map out the more detailed analyses which are to be presented in the following sections. Note that these calculations were made after adjusting the raw

frequencies to the criterion length of 3,000 words in each paper. All of the following results are also based on the same procedure.

Table 3. *The Overall Frequency of Metadiscourse Items*

	interactive	interactional	Total
Female	1619	2718	4337
Male	1592	3134	4726
Nonnative	1477	2799	4276
Native	1734	3053	4787
Total	6422	11704	18126

To illustrate a clearer picture of the metadiscourse frequencies in the dataset, the number of metadiscourse subcategories across the four groups of the participants is also presented in Table 4.

Table 4. *Distribution of Metadiscourse Subcategories across the Four Groups of Participants*

		Non-Native		Native	
		Female	Male	Female	Male
Interactive	Transitions	274	309	364	369
	Frame Markers	49	120	106	125
	Endophoric Markers	91	126	54	147
	Evidentials	283	53	210	150
	Code Glosses	85	87	103	106
	Total	782	695	837	897
Interactional	Hedges	567	607	655	755
	Boosters	135	162	136	135
	Attitude Markers	290	524	403	533
	Self Mentions	289	124	176	135
	Engagement Markers	18	83	49	76
	Total	1299	1500	1419	1634
Total		2081	2195	2256	2531

As it is reported in the table, above, Non-Native Females (NNF), Native Females (NF), Non-Native Males (NNM), and Native Males (NM) used 2081, 2195, 2256 and 2531 metadiscourse elements, respectively. Therefore, the most outstanding finding here is that Native Male speakers used more metadiscourse elements than other groups, while Non-Native Female speakers used the least number of metadiscourse items among other groups.

Furthermore, the chi-square test was employed to find out if any significant differences exist between the four groups of participants with respect to the use of metadiscourse elements (See Table 5, below).

Table 5. *Chi-square Values for Comparisons between Groups*

		NN F vs. N F		NN M vs. N M		NN F vs. NN M		N F vs. N M	
		χ2	*p-value*	*χ2*	*p-value*	*χ2*	*p-value*	*χ2*	*p-value*
Interactive	Transactions	12.69	0.000	5.31	0.021	2.101	0.147	0.034	0.853
	Frame Markers	20.961	0.000	0.102	0.749	29.828	5e-8	1.563	0.211
	Endophoric Markers	9.441	0.002	1.615	0.203	5.645	0.017	43.03	0
	Evidentials	10.809	0.001	46.35	0	157.44	0	10	0.001
	Code Glosses	1.723	0.189	1.87	0.171	0.023	0.879	0.043	0.835
	Total	1.868	0.171	25.631	4.1e-7	5.125	0.023	2.076	0.149
Interactional	Hedges	6.337	0.011	16.082	0.000	1.363	0.243	7.092	0.007
	Boosters	0.004	0.949	2.455	0.117	2.455	0.117	0.004	0.949
	Attitude Markers	18.426	0.000	0.077	0.781	67.268	0	18.056	0.000
	Self Mentions	27.46	1.6e-7	0.467	0.494	65.92	0	5.405	0.020
	Engagement Markers	14.343	0.000	0.308	0.578	41.832	0	5.832	0.015
	Total	5.298	0.021	5.729	0.016	14.434	0.000	15.141	0.000
Total		7.061	0.007	23.888	0.000	3.039	0.081	15.798	0.000

Note: NF=Native Female, NNF=Nonnative Female, NM=Native Male, NNM= Nonnative Male

Moreover, as it is displayed in the table, above, the chi-square values and the resulting *p*-values indicate that except for the third pair -- that is, Non-Native Female vs. Non-Native Male writers (χ2: 3.039, *p*-value: 0.081) -- there exist significant differences between Non-Native Female vs. Native Female writers (χ2: 7.06, *p*-value: 0.007), Non-Native Male vs. Native Male writers (χ2: 23.88, *p*-value: 0.000), and Native Male vs. Native Female writers (χ2: 15.798, *p*-value: 0.00) with regard to using metadiscourse elements.

The following barographs provide a more vivid illustration of the differences among the groups of participants with regard to the use of the sub-categories of metadiscourse elements. The sub-categories are presented in two major categories of *Interactive* (See Figure 1) and *Interactional* metadiscourse items (See Figure 2).

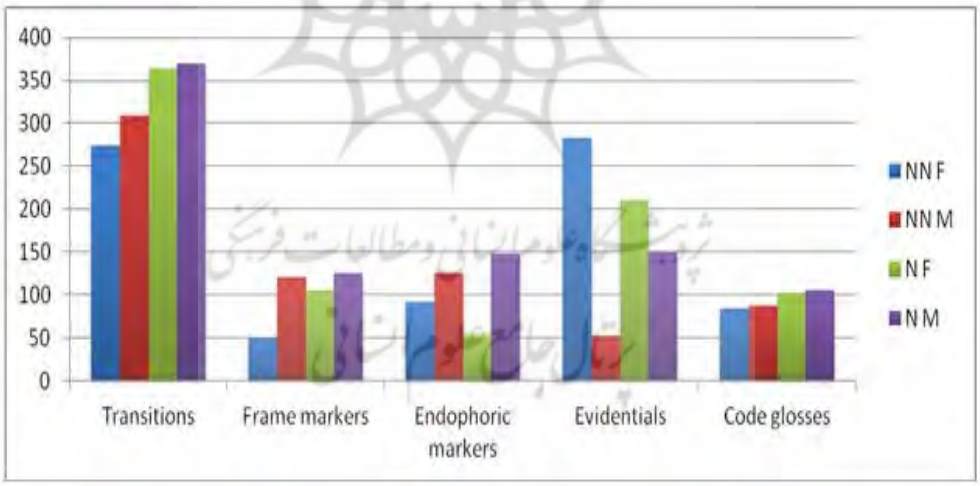

Figure 1. **Number of *Interactive* Metadiscourse Sub-categories Used by the Four Groups of Participants out of 3,000 Words**

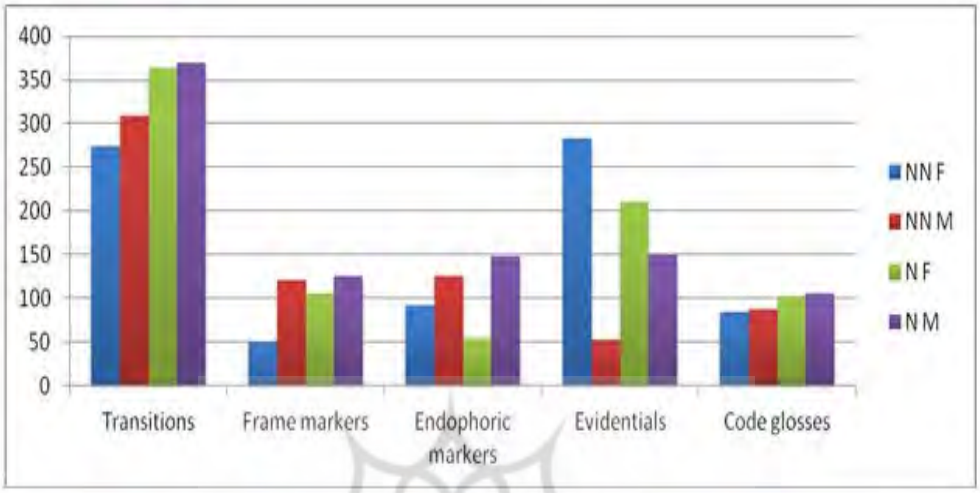

Figure 2. **Number of *Interactional* Metadiscourse Sub-categories Used by the Four Groups of Participants out of 3,000 Words**

To provide space for further detailed analyses of the distribution of metadiscourse sub-categories, the following pie graphs (Figure 3, below) depict the percentage of the frequencies for each sub-category of metadiscourse items employed by the four groups of the participants.

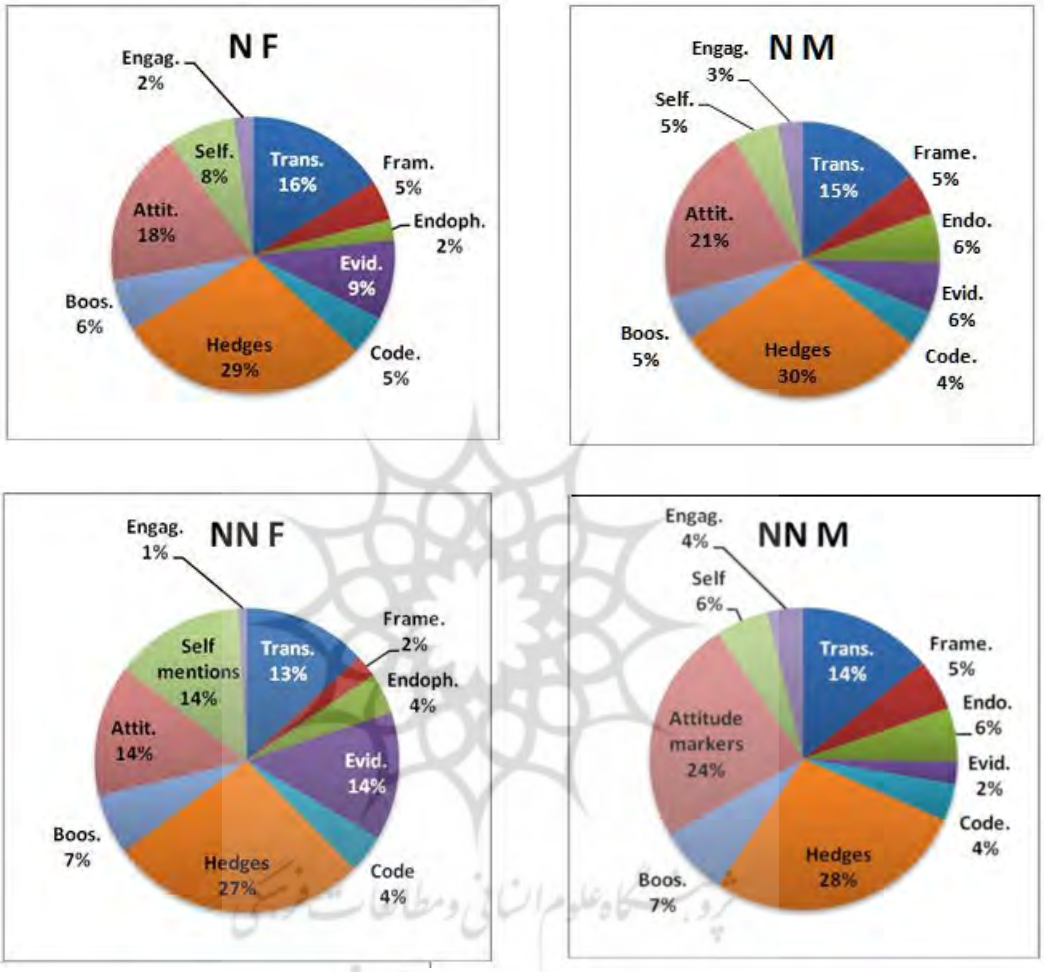

Figure 3. ***Distribution of Metadiscourse Elements in Texts Written by the Four Groups of Participants in Terms of Percentages***

Note: NF=Native Female, NNF=Nonnative Female, NM=Native Male, NNM= Nonnative Male

4. Discussion and Conclusion

The results of the study support the view that metadiscourse is a universal aspect of academic writing since all types of metadiscourse elements were

found in the four texts written by the four groups of writers. The frequent occurrence of metadiscourse elements further indicates the central role such elements play in organizing the content of the text and paving the reader's path through the text to find out the writer's message better. The total number of metadiscourse elements identified in the whole dataset studied is equal to about one instance per seven words. Such findings suggest that academic texts consist of a comparatively large number of metadiscourse elements, a property which can noticeably contribute to the intelligibility of such texts. Interestingly enough, the results seem to reject the claim that metadiscourse has a secondary role in texts (e.g., Crismore & Farnsworth, 1990).

The findings also revealed that native writers seemingly tend to employ more metadiscourse elements in their writings than their non-native counterparts, a result being in line with those of other studies (e.g., Crismore, Markkanen & Steffensen, 1993; Markkanen, Steffensen, Crismore, 1993), reporting that metadiscourse elements are used with different frequencies by native and nonnative writers.

Furthermore, as reported in various studies, interactional metadiscourse relies heavily on features indicating the writes' stance toward their text and creating a two-way connection between the writer and the target reader than on resources that help structuring the information. So, it can be well discussed that as a result of the high frequency of interactional metadiscourse features found in the examined corpora, by employing such elements, a more convergent writer–reader relationship seems to be built throughout the text. That is possibly why native writers' sub-dataset displays a notably higher inclusion of both interactive and interactional metadiscourse features, establishing perhaps a stronger interaction between the writer and the reader in the texts written by native writers. Moreover, both native and nonnative female writers used fewer

interactional metadiscourse elements in their writing than the native and non-native Male writers. Such a lower frequency of using interactional metadiscourse features is supposed to affect the writer–reader relationship in the process of reading comprehension of the text.

As a whole, native and non-native writers showed various frequencies in using metadiscourse items, possibly due to different degrees of familiarity with metadiscourse conventions in the English language. Such variability in the use of metadiscourse elements may be attributed to the fact that the majority of non-native writers do not have a good repertoire of metadiscourse features to use readily in their writing.

The overall pattern of using metadiscourse elements in this study may be considered a challenge to the claims made by some scholars that male and female academic writers employ such elements in a similar manner (e.g., Lynch & Strauss-Noll, 1987; Francis, Robson & Read, 2001; Robson, Francis & Read, 2002; Tse & Hyland, 2008). Our findings further failed to support Holmes' (1984) claim regarding females' preference for using metadiscoursal elements.

A high distribution of Evidentials in the texts written by females among both native and nonnative writers suggests that female writers tended to seek more support for their opinion through framing their arguments with various pieces of evidence borrowed from the literature. It seems to be the consequence of women's greater effort to persuade their audience and provide a sounder justification. These findings are in line with those of D'Angelo's (2008) research in which female writers made use of a higher number of Evidentials than their male colleagues.

With regard to hedges, as a sub-group of "interactional" metadiscourse elements, functionally speaking, they refer to linguistic elements that point to reverence towards the discourse community (Vassileva, 2001), or they suggest a

sort of uncertainty and tentativeness (Silver, 2003). According to our findings, hedges turned out to be the most frequent sub-category of metadiscourse elements employed by the four groups of the participants in their writing samples, constituting 29% of metadiscourse elements used by Native Females (NFs), %30 of those used by Native Males (NMs), %27 of the metadiscourse elements used by Non-Native Females (NNFs), and finally, %28 of those used by Non-Native Males (NNMs), suggesting that expressing new knowledge cautiously seems to be a central aspect of academic writing. Therefore, it seems that our participants employed a large number of hedges in their writings to communicate new knowledge possibly more tentatively, since, perhaps they feel, addressing an expert audience demands one to be more cautious. Moreover, native writers used significantly more hedges than their nonnative peers both among female and male writers, indicating that they were possibly more conscious of the necessity of leaving space for alternative or contradictory arguments. This finding provides further support for Tse and Hyland's (2008) study, in which no difference in the use of hedges was found across genders.

As for boosters, in terms of our results, they were frequently used by both native and nonnative writers, with no notable difference between genders in this respect. Our findings are in harmony with Hinkel's (2002) claim that writers in many languages use boosters to exaggerate and overestimate their statements (See also Johnson & Roen, 1992; Herbert, 1990; Rubin & Greene, 1992).

However, no statistically significant difference was found in the inclusion of attitude markers between native and nonnative male speakers. It seems that gender preference overrides possible inter-language differences when it comes to the male writers' attempt to project their attitude towards certain issues. Regarding female writers' papers, native female writers used significantly more

examples of attitude markers than female non-native ones. The use of attitude markers happened to be higher in male writers' papers both among the native and nonnative writers, though they were normally known to be very economical with verbalizing their feelings. Accordingly, the first language being the same, male writers tended to display more instances of attitude markers than women do. The resulting males' superiority in using attitude markers goes against Lakoff's (1975) theory that women's higher employment of empty adjectives can be linked to their emotional aspects and feminine nature. A possible explanation could be that men used attitude markers more frequently in order to intrude and gain control over the readers' understanding of the text and imply how it should be interpreted. It seems that academic considerations and conventions override male reluctance in making their discourse affective in other genres.

Engagement markers were among the low-frequency occurring metadiscourse elements by all the four groups of participants. Such results might refer to the distance university students assumed between themselves and the expert community they were addressing in their writings. In accordance with the results of Tse and Hyland's (2006) study, engagement markers were used more frequently by male writers in both native and non-native participants. Accordingly, male writers created a sense of shared purpose with their audience and tried to get them actively involved in a two-way process of recreating meaning.

Finally, the high frequency of metadiscourse elements in the students' papers indicated that they attempted to avoid using language monologically in their academic writings, doing their best to organize the presentation of information more vividly and cautiously by employing several instances of metadiscourse elements. The findings further revealed that the writers' gender

and language background could influence the frequency of use as well as the type of metadiscourse elements they might employ in their academic papers.

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Appendix A

Metadiscourse Markers According to Hyland (2005)

Interactive Resources: help guide the reader through the text

1. Transitional Markers: Express relations between clauses

Words to look for:

Accordingly, additionally, again, also, alternatively, although, and, accordingly, additionally, again, also, alternatively, although, and, as a consequence, as a results, At the same time, because, besides, but, by contrast, consequence, by the same token, consequently, conversely, equally, even though, further, furthermore, hence, however, in addition, in the same, leads, to likewise, moreover, nevertheless, nonetheless, on the contrary, rather, results in, similarly, since, still, thereby, though thus, whereas, while, yet

2. Frame Markers: refer to discourse acts, sequences and stages

Words to look for:

(in) chapter x, (in) part x (in) section x, (in) this section, finally, first, First of all, firstly, last, lastly, listing (a, b, c) next, numbering, second, subsequently, then, third, to begin, to start with, All in all, at this point, at this stage, by far, in brief, in

conclusion, in short, in sum. overall, so far, thus far, to conclude, to repeat, to sum up, on the whole, now, In this chapter, in this part, in this section, aim, desire, focus, goal, intend to, intention, objective, purpose, seek to, want to, with to, would like to, I argue here, my purpose, Well, right, ok, now, let us return to, back to, digress, in regard to, move on , resume, return to revisit, shift to so, to look more closely, turn to with regards to:

3. **Endophoric Markers**—Refers to information in other parts of text

Words to look for:

In Chapters x, in part s, in section x, in the x chapter, in x part, in x section, in this part, in this section, example x, fig x, p, x, x above, x earlier,

4. **Evidentials**—refers to information in other texts

Words to look for:

Date, name, cite, quote, reference number, name, according to,

5. **Code Glosses**—elaborates propositional meaning

Words to look for:

(mm), as a matter of fact, called, defined as, e.g. for example, for instance, I mean, in fact, in other words, indeed, known as, namely, or, put another way, say, specifically, such as, that is to say, that means, via, which means,

Interactional Resources: involves the reader in the text

1. **Hedges**—withhold comment and open dialogue

Words to look for:

about, almost, apparently, appear, approximately, argue, around, assume, broadly, certain amount, certain extent, certain level, claim, could, couldn't, doubt, essentially, estimate, fairly, feel, felt, frequently, from my perspective, generally, guess, indicate, in general in most cases, in my opinion, in my view, likely, mainly, may, maybe, might, often, on the whole, ought, perhaps, plausible, possible , probably, quite, rather, relatively, roughly, seems, should, sometimes, tend to, typical uncertain, unclear, unusual, would, wouldn't

2. **Boosters**—emphasize certainty and closes dialogue

Words to look for:

have, beyond doubt, certain, clear, conclusively, decidedly, definitely, demonstrate, doubtless, established evident, find, found, in fact, incontestable, incontrovertible, indeed, indisputable, know, known, must, never, no doubt, obvious, of course, prove, realize really, show, sure, think thought, truly, Indicate

3. **Attitude Markers**—expresses writer's attitude toward the propositional information

Words to look for:

!, admittedly, agree, amaze, appropriate, astonish, correctly, curious, fortunate, hopeful, important, inappropriate, interesting, prefer, preferred, remarkable, shocked, striking, shocking, surprising, unbelievable, understandable, unexpected, unfortunate, unusual, usual

4. **Self Mention**—explicit reference to the writer

Words to look for:

I, we, me, my, our, mine, us, the author, the author's the writer, the writer's

5. **Engagement Marker**—explicitly build relationship with reader

Words to look for:

Add, allow, analyze, apply arrange, asses, assume, by the way, calculate, choose, classify, compare, connect, consider, consult, contrast, define, demonstrate, determine, do not develop employ, ensure estimate, evaluate, find, follow, go, have to imagine, incidentally, increase, input, insert, integrate, key, let us, look at, mark, measure, mount, must, need to , note, notice, observe, one's order, ought our, pay, Picture, prepare, recall, recover, refer, regard, remember, remove, review, see, select, set, should show, suppose, state, take, think about, turn, us (inclusive)

Appendix B

The result page of AntConc Concordance Program for texts written by native female writers