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An Investigation of Interactional Metadiscourse in Discussion and Conclusion Sections of Social and Natural Science Master Theses

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Abstract

This study is a corpus-based study of interactional metadiscourse in natural and social science master theses. For this purpose, 30 natural and social science master theses in six disciplines were randomly selected out of the library of five universities. Five master theses were selected in each discipline, in a period of six years (2010-2016). This study analyzed only the discussion and conclusion sections of master theses. To investigate interactional metadiscourse, Hyland's (2005) classification was used. The results of this study demonstrated that the percentile proportion of total interactional metadiscourse markers in social science master theses was more than natural science master theses. Among the analyzed resources, *hedges* were the most frequent role in both corpora while *attitude markers* in social science and *self-mention* in natural science were the least favored role. The results of the present study suggested that being aware of interactional metadiscourse markers can shed light on the way of writing of academic texts because these markers help writers to negotiate with their readers and make the text more comprehensible and coherent. The results of the present study might offer pedagogical implication of this aspect of metadiscourse for postgraduate students.

Keywords: Interactional Markers, Master Theses, Metadiscourse, Natural Science, Social Science

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Introduction

The notion of interaction, especially the linguistic mechanisms used by speakers and writers to convey their personal feelings and comprehension, has become an increasingly attractive area of research in recent years. According to Schiffrin (1994), communication is basically social interaction. Communication is not an isolated island with one to one relationship, while it is realized among different people with different knowledge, purpose, and needs in a given society (Aguilar, 2008). Metadiscourse embodies the idea that communication is more than just the exchange of information, goods, or services, but also involves the personalities, attitudes, and assumptions of those who are communicating (Hyland, 2005). The significance of metadiscourse has recently been recognized as a pivotal feature in communication.

The term metadiscourse, according to Vande Kopple (2002), goes back to the work of the linguist Zellig Harris in 1959 to offer a way of understanding language in use, representing a writer's or speaker's attempts to guide a receiver's perception of a text. In discourse literature, definitions of metadiscourse have varied. One of them is Vande Kopple (1985) definition. He defines metadiscourse as "discourse about discourse or communication about communication" (p. 83). Another definition belongs to Hyland (2005); for him, metadiscourse is an umbrella term including a range of cohesive and interpersonal features which aid to relate a text to its context.

According to Hyland's model (2005), all metadiscourse can contribute to the interpersonal dimension of a text. Nevertheless, he identifies two classes of metadiscourse categories: *interactive* resources, which help the writer or speaker organize the information presented in ways that the audience may find coherent and convincing, and *interactional* resources, which involve the readers and alert them to the author's perspective on propositional information or on the readers themselves. The *interactive* resources consist of five categories: Transitions markers, Frame markers, Endophoric markers, Evidentials, and Code glosses. The *interactional* resources consist of the following categories: Hedges, Boosters: Attitude markers, Engagement markers, and Self-mentions.

Table 1. An interpersonal model of metadiscourse (Hyland, 2005)

Category	Function	Examples
Interactive resources	**Help to guide reader through the text**	
Transitions	Express semantic relation between main clauses	In addition/but/thus/and
Frame markers	Refer to discourse acts, sequences, or text stages	Finally/to conclude/my purpose is
Endophoric markers	Refer to information in other parts of the text	Noted above/see Fig. /in Section 2
Evidentials	Refer to source of information from other texts	According to X/(Y, 1990)/Z states
Code glosses	Help readers grasp meanings of ideational material	Namely/e.g./such as/in other words

Interactional resources	Involve the reader in the argument	Examples
Hedges	Withhold writer's full commitment to proposition	Might/perhaps/possible/about
Boosters	Emphasise force or writer's certainty in proposition	In fact definitely/it is clear that
Attitude markers	Express writer's attitude Proposition	Unfortunately/I to agree/surprisingly
Engagement markers	Explicitly refer to or build relationship with reader	Consider/note that/you can see that
Self-mentions	Explicit reference to author(s)	I/we/my/our

Different scholars have investigated metadiscourse markers in academic texts. One of them belongs to Abdi (2002) who investigated interpersonal metadiscourse and identity in academic writing. His purpose was to study the way writers use interpersonal metadiscourse to partly reveal their identity and examines their selected mode of interaction in two major academic fields. The analysis showed that the social science writers employed interpersonal metadiscourse more frequently than the natural science writers.

In another study, Hyland (2005) carried out a research on the use of stance and engagement features in research articles. He utilized a corpus of 240 research articles from eight disciplines and insider informant interviews to offer a framework for understanding the linguistic resources of academic interaction. The findings of his study demonstrated the significance of stance and engagement features in contextualizing arguments in the interactions of members of disciplinary communication. And recently, Khalili & Aslanabadi (2014) explored the use of metadiscourse devices by non-native speakers in research articles based on Hyland and Tse's (2004) model. The results showed huge discrepancy in the use of all metadiscourse devices in general, and some in particular.

Although many researchers (Abdi, 2002; Hyland, 2005; Khalili & Aslanabadi, 2014) have investigated this function in academic texts including research articles, to our best knowledge, there has been little research on the role of interactional metadiscourse in master theses. Since metadiscourse elements play important roles in creating an organized and understandable kind of discourse (Hyland, 2005) and they are about the linguistic elements which refer to the organization of the discourse itself and not to the aspects of external reality (Crismore et al., 1993), material developers and textbooks developer should pay enough attention to make use of these markers appropriately in different disciplines with special kinds of texts and special kinds of addressees to produce a desired effect on intended readers .The purpose of this study was to gain insights into the function of interactional metadiscourse in developing discussion and conclusion sections of social and natural science master theses. The findings of this study may benefit more broadly the teachers of writing courses. And these teachers can be aware of the variety of important functions displayed by interactional metadiscourse in academic texts.

This study attempts to find answers to the following research question:

RQ # 1: Is there a difference in the frequency of the use of Interactional Metadiscourse in social and natural science master theses?

RQ # 2: What are the functions of Interactional Metadiscourse in social and natural science master theses?

Research Method

Corpus

This study was an attempt to reveal variation on the use of interactional metadiscourse in discussion and conclusion sections of social and natural science master theses. To fulfil this aim, the descriptive method is used to determine the use of interactional metadiscourse elements in social and natural science master theses. The corpus of the study consisted of 30 social and natural science master theses. For this purpose, 15 social science (MA) and 15 natural science (MSc) theses were randomly selected out of master theses available in the online library of five universities: Pennsylvania University, Brock University, Ohio University, University of Central Florida, and University of Iowa.

Furthermore, this study focused on the corpus in six different disciplines: Applied Linguistic, Psychology, and Political Science as a social science; Physics and Astronomy, Chemical and Biological Engineering, and Earth Science as natural science. Five master theses were selected in each discipline, in a period of six years (2010-2016). This study analyzed only the discussion and conclusion sections of the master theses. The selected corpus was converted to text format. The corpus ran to approximately 59278 words.

Procedure

In order to meet the objective of this study, frequency analysis was conducted to provide quantitative data for the analysis of interactional metadiscourse markers in these texts. After that, discussion and conclusion sections of these theses were read word by word carefully so as to find out the interactional metadiscourse markers based on Hyland (2005) model. The markers were counted manually and functionally to ensure the validity of the research. All data were analyzed twice by researchers to forestall any fault in counting the frequency of metadiscourse markers and to make certain that the functional roles were investigated properly in the corpus. Therefore, this study applied inter-reliability. Frequency of these interactional metadiscourse markers were compared between social and natural sciences master theses.

Instrumentation

The analysis in this research was based on Hyland's (2005) model of metadiscourse in academic texts. The rationale for choosing the model was that it was a robust, explicit, and useful model of metadiscourse.

Analysis Result

In this section, the results of descriptive analysis are presented. First, frequency of interactional metadiscourse markers in each disciplines are shown in tables. Second, the analysis of differences between social and natural science master theses are explained. Table 2 shows the frequency of use of these roles in each corpora as well as their frequencies.

Table 2. Frequency of interactional metadiscourse in social science master theses

Category	Applied linguistic	Psychology	Political science
Hedges	25 (49.01%)	23 (39.65%)	18 (35.29%)
Boosters	8 (15.68%)	9 (15.51%)	11 (21.56%)
Attitude markers	4 (7.84%)	5 (8.62%)	5 (9.80%)
Engagement markers	10 (19.68%)	6 (10.34%)	8 (15.68%)
Self-mention	8 (15.68%)	10 (17.24%)	7 (13.72%)
Total	51 (31.8%)	58 (36.2%)	51 (31.8%)

Frequency of Interactional metadiscourse in natural science master theses

Category	Physics & Astronomy	Chemical & Biological Engineering	Earth science
Hedges	14 (48.27%)	7 (35%)	10 (43.47%)
Boosters	4 (13.79%)	3 (15 %)	5 (21.73%)
Attitude markers	3 (10.34%)	5 (25 %)	3 (13.04%)
Engagement markers	6 (20.68%)	2 (10 %)	4 (17.39%)
Self-mention	2 (13.79%)	3 (15%)	1 (4.34%)
Total	29 (40.2%)	20 (27.7%)	23 (31.9%)

As the table 2 clearly demonstrates, interactional metadiscourse occurred in both corpora, but their frequencies were quite different. Among analyzed elements, psychology as a social science with the frequency of 58 (36.2%) has the more frequency and Chemical & Biological engineering as a natural science with frequency of 20 (27.7%) has the low frequency in the corpus.

Table 3. Frequency of Interactional Metadiscourse in social and natural science master theses

Category	Social science	Natural science	Overall
Hedges	66 (42.3%)	35 (46.05%)	101 (43.3%)
Boosters	28 (17.8%)	12 (15.7%)	40 (17.1%)
Attitude markers	14 (8.9%)	11 (14.4%)	25 (10.7%)
Engagement markers	24 (15.2%)	12 (15.7%)	36 (15.4%)
Self-mention	25 (15.9 %)	6 (7.8%)	31 (13.3%)
Total	157 (67.3%)	76 (32.6%)	233 (100%)

It can be clearly seen in Table 3, that the total frequency of interactional metadiscourse elements in social science is 157 (67.3%) and in natural science 76 (32.6%). Among the analyzed interactional metadiscourse elements, *hedges* with the frequency of 66 (42.3%) in social science and 35 (46.05%) in natural science was the most frequent role while *attitude markers* with the frequency of 14 (8.9%) in

social science and *self-mention* with the frequency of 6 (7.8%) in natural science were the least favored role that master theses writers used. To better illustrate these findings, the results are shown in figure 1.

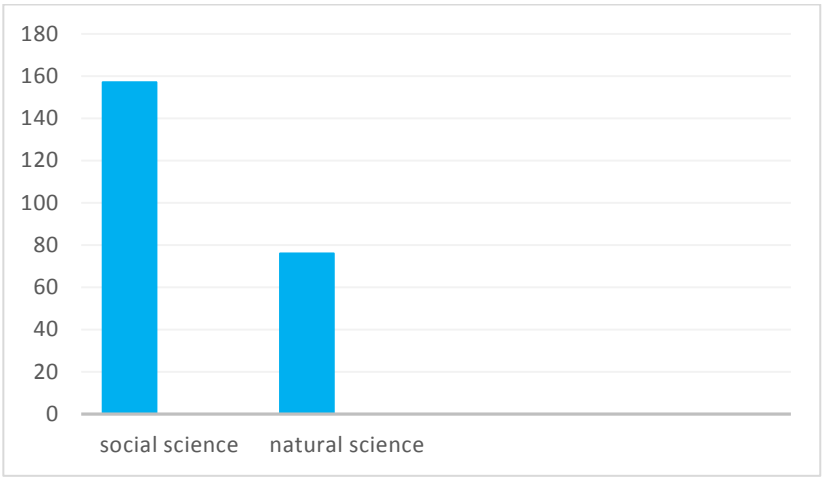

Figure 1. Frequency of interactional metadiscourse in social and natural science master theses

Figure 1. clearly demonstrated that the frequency of interactional metadiscourse in social science was higher than natural science master theses. These results reveal that social science writers most prefer the use of interactional metadiscourse markers in comparison with natural science writers in their texts.

Discussion

This study attempted to investigate the Interactional Metadiscourse in discussion and conclusion sections of social and natural science master theses. The results of this study demonstrated that the percentile proportion of total interactional metadiscourse markers in social science master theses was more than that in natural science master theses. This revealed that interactional metadiscourse markers were used more frequently in social science master theses than in natural science master theses. Among the analyzed resources, *hedges* with the frequency of 66 (42.3%) in social science and 35(46.05%) in natural science was the most frequent role while *attitude markers* with the frequency of 14 (8.9%) in social science and *self-mention* with the frequency of 6 (7.8%) in natural science were the least favored role that master theses writers used.

The findings of this study are in line with the findings of Hyland and Tse (2004), who suggested that "metadiscourse use vary in the two corpora, and there were also substantial variations across disciplinary communities. Social science disciplines employed the more metadiscourse markers in their texts" (p. 144).

In line with the findings of this paper, the outcomes of the study conducted by Hyland and Tse (2004) also supported this finding; they found that interactional

metadiscourse markers as the most frequent markers (hedges, transitions, and engagement markers). They also suggested that the most usage of metadiscourse was in Applied Linguistics and the least usage of metadiscourse in the electronic discipline. Hyland (2005) believed that interactional resources helped writers make their inputs clear and engage their readers in the text. Metadiscourse represents a reflective awareness of self, text, and audience, and its use here suggests writers' attempts to present themselves as competent academics immersed in the ideologies and practices of their fields (Hyland & Tse, 2004).

Interactional metadiscourse features pave the way for writers to interact with readers, get access to them, and signal their truth-value about current propositional information. This finding may indicate the significance of involving the readers in the text and alerting them to the writer's perspectives for information over guiding the reader through the text and enabling the writer to manage the information. The results of this study suggested that writers were aware of the subjective nature of discussion and conclusion sections and these sections were more explicitly interpersonal and evaluative.

Conclusion and Implications

According to the obtained results of the study, it can be claimed that the importance of metadiscourse markers lies in the fact that they contribute to the organization of the text and effective interaction between authors and their readers. In addition, metadiscourse markers enable writers or speakers to express their attitudes towards the information they convey and also towards their audience (Fuertes-Olivera et al., 2001).

> Hyland and Tse (2004) state,
>
> Metadiscourse is particularly important at advanced levels of academic writing as it is [*sic*] represents writers' attempts to present and negotiate propositional information in ways that are meaningful and appropriate to a particular disciplinary community. . . . Meta-discourse thus provides a link between texts and disciplinary cultures, helping to define the rhetorical context by revealing some of the expectations and understandings of the audience for whom a text was written. (p. 136)

The results of the study can be beneficial for postgraduate students. It is necessary to make learners aware of these markers and their functions in the text. Professors can encourage students to apply these metadiscourse markers in master theses appropriately. It is crucial for instructors to teach these metadiscourse markers especially to master theses writers. The findings of this study may render some pedagogical implications for ESP courses and especially writing master theses.

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