ISSN 1798-4769
Journal of Language Teaching and Research, Vol. 6, No. 6, pp. 1384-1392, November 2015
DOI: http://dx.doi.org/10.17507/jltr.0606.29

A Cross-cultural Analysis of the Use of Hedging Devices in Scientific Research Articles

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***Abstract*—Hedging is a significant aspect of academic writing and it is an important resource for L2 writers (Hyland, 1994). Hence, this study set out to compare the frequency of hedges employed in different sections of research papers written by non-native English speaking authors (NNESA) and native English speaking authors (NESA). To this end, 40 research articles written by the two groups of authors was analyzed based on the taxonomy of hedges proposed by Salagar- Meyer (1994). The results showed that generally NESA utilized more hedges compared to NNESA and there is a significant difference between these authors use of hedging devices. The results can have implications for L2 teachers in that they should take measures to familiarize their students with the hedging devices and show them how to use hedges appropriately.**

***Index Terms*—Hedging devices, NES authors, NNES authors**

I. Introduction

Taking the social structures and professional consequences into account plays an important role in process of the academic writing. That is, the act of academic writing is not done in vacuum. In addition to presenting the propositional fact (which may be the main focus of writing), the potential readers and their expectations should also be considered. There are some different and specific conventions to write academically which differ according to the specific discipline. The existence of such conventions insinuates the importance of considering the readers and reveals the fact that being among special discourse community requires adhering to such conventions. Metadiscourses are among these conventions which show the writer's perspective and at the same time lead the reader to a specific direction. Hyland (2005) defined metadiscourse as "the cover term for self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) to express a viewpoint and engage with readers as members of a particular community" (p. 37). Thus, metadiscourse is a tool through which the writer or the speaker) communicates his/her position to the readers (or listeners). The importance of metadiscourse in language learning and teaching settings led us to investigate this area more closely in order to detect its potential effects to facilitate learning to write fluently.

II. Review of the Literature

A. Theoretical Background

Getkham (2011) defined hedging as one mechanism whose main function is managing the tone, attitude, and information within spoken or written discourse. He claimed that tentativeness is one of the important requirements which help speakers or writers to maintain objectivity in their language productions. One way through which this requirement can be realized is utilizing hedges. Many attempts have been done to provide different taxonomies of metadiscourse (see Hyland's taxonomy 1998, 1999; Van de Kopple's revised taxonomy, 2002; Hyland's revised taxonomy, 2004, etc.). Interactive and interactional resources are among Hyland's recent taxonomy. The former refers to resources which the writer utilizes in order to show the preferred interpretations on the behalf of the reader. *Transitions* (e.g. in addition, moreover, but, and, etc.), *frame markers* (e.g. to conclude, in my opinion, etc.), *evidential* (e.g. according to X, A claims, etc.), *endophoric expressions* (e.g. as mentioned above, as it was clear in the preceding section, etc.), and *code glosses* (e.g. better to say, in other words, etc.) are among the interactive resources. The latter, interactional resources, subdivides into *hedges* (e.g. perhaps, might, etc.), *boosters* (e.g. it is crystal clear, certainly, etc.), *attitude markers* (e.g. I agree, surprisingly, etc.), *engagement markers* (e.g. note that, pay attention to, etc.), and *self-mentions* (e.g. I, we, my, our, etc.). Hyland (2004) purported that these kinds of resources are used to "focus on the participants of the interaction and seek to display the writer's persona and a tenor consistent with the norms of the disciplinary community" (p. 139). Hedges are mainly used to avoid proposing statements absolutely and reducing the force of them. The writer can use hedges as a tool for reducing his/her commitment to the written production and for

presenting his/her statements cautiously and not absolutely. This way of presenting the findings articulates the matter-of-degree nature of truth and falsity and helps the reader to have his/her interpretations accordingly. Many have been trying to define and then to categorize the concept of hedges. One of the early and well-know definitions for hedges has been provided by Lyon (1977). He defines them as: "Any utterance in which the speaker explicitly qualifies his commitment to the truth of the proposition expressed by the sentence he utters is an epistemically modal or moralized sentence" (p. 797).

In the similar vein, Holmes (1982) defined hedges as rhetorical devices whose main function is taking the readers into account and provides them an opportunity to have their own ideas through reading. Another definition of term provided by Hyland (1996a) in which hedges were considered as linguistic devices used to "show two main purposes: a) a lack of complete commitment to the truth of a proposition and b) a desire not to express that commitment categorically" (Afshar & Baghericeh, 2014, p. 1821). In sum, the most comprehensive definition may be provided by Lakoff (1972), the pioneer in this field, "hedges are words whose job is to make things fuzzier or less fuzzy" (p. 195). Salager-Meyer (1994) categorized different kinds of hedges in terms of their functions. *Shields*, *approximators of degree*, *quantity*, *frequency* and *time*, *authors' personal doubt* and *direct involvement*, *emotionally-charged intensifiers*, and *compound hedges* are among them.

Hyland (1994) purported that epistemic modality plays an important role in academic writing. He believed that this modality deals with presence or absence of confidence on the behalf of writer in the truth of propositional information. The exact nature of academic writing makes it necessary and sometimes obligatory for writer to utilize hedges in their writing in all academic disciplines. What is different among disciplines is the use of various kinds of these metadiscourses in different disciplines. This study is an attempt to investigate the spread and the frequency of hedging devices in different sections of academic research articles in the field of applied linguistics among native (NESA) and non-native English speaking authors (NNESA).

B. Previous Studies on the Concept of Hedges

"Hedging allows writers to manipulate both factivity and affect and invites readers to draw inferences about the reasons for their use" (Skelton, 1988b, p. 107). Many researchers have attempted to define and categorized the hedging devices and their efforts resulted in different classification of this kind of metadiscourse. Classifying the hedging devices into neat and separate subcategories makes it easier for researchers to investigate the frequency and range of their use in different genres of written production. Some studies were concerned with the use of hedges in general language texts (e.g. McKinley 1983, Powell 1985, Stubb 1986), others involved with the frequency of these linguistic devices in academic writing (e.g. Kubui 1988 in medical research papers, Rounds 1981, 1982 in social sciences, & Myers 1988 in a corpus of molecular genetics), and others discussed the problem from a contrastive rhetoric point of view (e.g. Clyne 1991) (Salager-Meyer, 1994). The followings are among some research works which take hedging devices in academic writing. Behnam and Khaliliaqdam (2012) took the hedging devices into account in the Kurdish spoken language (i.e. in conversations). The researchers attempted to discover whether Kurdish speakers used hedging devices with the purpose of being less commitment to their utterances. The relevant data was collected through dialogues and interview sessions. They reported that the hedges were mainly used as mitigating devices in different conversations (interviewees with different social statues). Moreover, they reported that the role of the hedges in both Kurdish and English conversations was the same to some extent.

In a similar attempt, Nasiri (2012) investigated the utilization of hedging devices in Civil Engineering field. In his study, these metadiscourses were examined in the writings of American and Iranian writers. Nasiri (2012) also had a look on cultural backgrounds and their manifestation in the writing. Twenty research papers on Civil Engineering by writers from different cultural backgrounds (American and Iranians) were collected and the frequency of different types of hedging in them (Discussion section) was calculated. He found that these writers used different hedging devices in the Discussion section. The results also revealed that it was Americans who applied more hedges in comparison to Iranians. But, what was clear in the study was the fact that the differences observed in the writing of Iranian and American writers were not significant and cultural backgrounds were not deciding factors in utilizing hedging devices. In the same vein, Mirzapour and Rasekh Mahand (2012) compared the frequency of hedges in different parts of scientific research papers. They selected their data among Library and Information (LI) and Computer Science (CS) papers by both native and non-native writers. Holmes' (1998) lexical devices were used for analyzing the papers. Unlike previous one, this study reported the significant differences between native and non-native writers in using the hedges and boosters. A research study which is more or less closer to the present one was conducted by Samaie, Khosravian, and Boghayeri (2014). They aimed to study the frequency and the types of hedges in the field of Literature. They did this in introduction of published articles. The logic behind choosing the introduction section for investigation was that they claimed that "hedges allow researchers to establish an early niche for their research" (Samaie, et al., 2014, p. 1678). Analyzing the data revealed that English writers, in comparison to Persian counterparts, are more tentative in expressing their ideas and claims and so used more hedges.

Having reviewed some relevant literature, this study attempted to address some unanswered questions regarding hedging devices and their frequency and range of use. Generally speaking, the logic behind of this study was twofold: (1): to address the dearth of the research work on the use, frequency, and spread of hedging devices in the field of Applied Linguistics and (2) to provide more evidence for the claim that the main function of hedging devices is

reducing the writer's commitments to mentioned statements and propositions. Having taken these aims into account, this study attempted to investigate the spread and the frequency of hedging devices in different sections of academic research articles in the field of applied linguistics among native (NESA) and non-native English speaking authors (NNESA).

III. Purpose of the Study

The main purpose of this study to investigate the spread and frequency of hedging devices in the different sections of academic research articles in the field of applied linguistics by native (NESA) and non-native English speaking authors (NNESA) along with discovery of the existence of any significant difference in their use. Hence the following research questions were put forward:

1. How much do native English speaking authors (NESA) and non-native English speaking authors (NNESA) in the field of applied linguistics use different types of hedging devices in their research articles?
2. Is there any significant difference in the frequency of different types of hedging devices in the research papers in applied linguistics by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?
3. How is the spread and distribution of hedging devices in different sections of research papers (IMRAD) by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?
4. Is there any significant difference in the frequency of hedging devices in different sections of a research paper by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?

IV. Methodology

The data of the present study was obtained from 40 research articles in the field of applied linguistics written by native and non-native English speaking authors (20 papers from each group of authors). The papers written by native English speaking authors were published between 2010 to 2014 and were drawn from journals such as *International Journal of Research Studies in Language Learning, Journal of Language Teaching and Research, English Language Teaching, MEXTESOL Journal, Language Teaching Research, International Education Studies, Theory and Practice in Language Studies and The Journal of Language Teaching and Learning* . The papers by non-native English speaking authors were published between 2012 and 2014 in journals such as *Journal of language & Linguistic Studies, MEXTESOL Journal, Journal of Language Teaching and Research, English Language Teaching, International Journal of English Linguistics, Theory and Practice in Language Studies, International Journal of Research Studies in Language Learning, International Education Studies.*

Utilizing the taxonomy of hedges proposed by Salager-Meyer (1994) all papers were analyzed regarding the number of hedging devices used by native and non-native English speaking authors in different sections of research articles and the number of different type of hedges employed in different sections of research papers. Salager-Meyer (1994) divided hedging devices into five groups and her classification includes: *Shields* that includes all modal verbs which express possibility for example *to appear, to seem, probably*, *Approximators* including those words used as approximators of quantity, degree, frequency and time, for instance, *approximately, roughly, Authors' personal doubt and direct involvement* that includes expressions that expresses the writer's personal beliefs such as *I believe* and *to our knowledge*. *Emotionally- charged intensifiers* including words that are used to show the writer's reactions and feelings toward different issues, for instance, *extremely difficult/interesting* and *dishearteningly weak*, and *Compound hedges* such as *it may suggest that* and *it could be suggested that*.

After counting the number of hedges used by NESA and NNESA in different sections of papers and the number of different kind of hedges in different parts of papers, chi square analyses were run to find any significant different between the two groups of authors in this regard.

V. Results

The results of the study will be presented regarding the use of different kinds of hedging devices by NNS and NS writers, any significant difference between these two groups of writers' use of hedges, distribution of hedging devices in different sections of papers written by NNS and NS and any significant difference in this regard.

1. How much do native English speaking authors (NESA) and non-native English speaking authors (NNESA) in the field of applied linguistics use different types of hedging devices in their research articles?

To answer this research question, the hedging devices used in two groups of papers had been counted and their percentages computed. Table 1 shows the frequency and percentage of hedging devices used by NESA and NNESA in their research papers. As can be seen, generally NESA used more hedging devices compared to NNESA. While native authors used 992 hedging devices, their nonnative counterparts used 624.

Regarding the frequency of use of different kind of hedging devices, as can be seen in fig.1, the hedging words that were used most frequently in the two groups of papers by native and non native authors were shields and approximators. These two categories accounted for the 77.01% and 11.49% of total hedging devices in papers by native authors and constituted 64.5% and 24.35% of hedging words used by non-native authors respectively. It should be mentioned that the frequency of using approximators was higher among non-native authors compared to native authors.

The next frequently employed category of hedging devices by native authors was emotionally charged hedges which accounted for 5.24% of the total hedging words employed by them and 2.08% of the total hedging words employed by non-native authors. Like approximators this group of hedging words was used more by non- native authors than native ones. The other category of hedging devices, compound hedge, constituted 3.62% of hedging words found in papers written by native authors and 7.85% of the hedging words found in papers written by non-native authors.

TABLE1.
FREQUENCY OF DIFFERENT TYPES OF HEDGES IN BY NATIVE AND NON-NATIVE AUTHORS

Hedging type	Shields		Approximators		Authors' personal doubt and direct involvement		Emotionally-charged intensifiers		Compound hedges		Total frequency
	F	P	F	P	F	P	F	P	F	P	
Native authors	764	77.01%	114	11.49%	25	2.5%	52	5.24%	36	3.62%	992
Non-native authors	403	64.5%	152	24.35%	7	1.12%	13	2.08%	49	7.85%	624

Finally, the least employed category of hedges by both native and non-native authors was author's personal doubt. It accounted for the 2.5% of the total hedges used by native authors and 1.12% of hedges used by non-native authors.

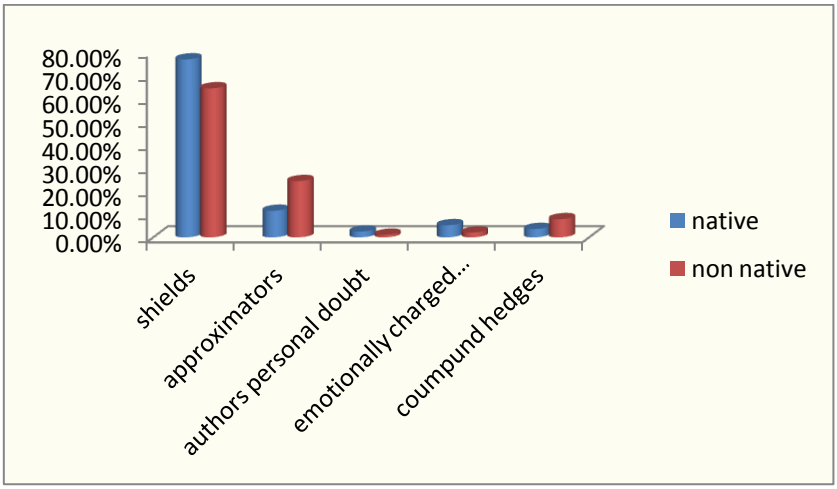

Figure 1. Percentage of different kinds of hedges used by native and non-native authors

2. Is there any significant difference in the frequency of different types of hedging devices in the research papers in applied linguistics by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?

It has been found that native authors made more use of hedging devices compared to non-native authors and the second research question addressed the significance of the observed difference. To this aim a chi square analysis was run to see if there is a significant difference between native and non-native authors regarding the use of hedging devices. Table 2 shows the results of chi square analysis. As can be seen, there is a significant difference between native and non- native authors' use of hedging devices (X^2 = 71.70, df = 4, p < .05). In other words, native authors used significantly more hedges compared to non-native authors.

TABLE 2.
CHI SQUARE RESULT OF THE FREQUENCY OF HEDGES USED BY NESA AND NNSEA

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71.708[a]	4	.000
Likelihood Ratio	71.211	4	.000
Linear-by-Linear Association	11.441	1	.001
N of Valid Cases	1609		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.47.

3. How is the spread and distribution of hedging devices in different sections of research papers (IMRAD) by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?

The number and percentage of hedging devices in different sections of papers written by native and non-native authors are shown in Table III and Fig. 2. The results show that the most heavily-hedged section of papers by native authors is the results and discussion section with 57.05% hedging words followed by the introduction and literature

section with 40.42% hedging words. On the contrary the most heavily hedged section of papers by non-native authors is the introduction and literature review section by 46.95% hedging words followed by results and discussion section by 45.19% hedging words. And the least heavily hedged section of papers by both native and non-native authors is the methodology section with 2.52% and 7.85% hedging words respectively.

TABLE 3.
FREQUENCY OF HEDGING DEVICES IN DIFFERENT SECTIONS OF PAPERS BY NATIVE AND NON-NATIVE AUTHORS

Sections of Paper	Introduction & Review of Literature		Methodology		Results & Discussion		Total frequency
	F	P	F	P	F	P	
Native authors	401	40.42%	25	2.52%	566	57.05%	992
Non-native authors	293	46.95%	49	7.85%	282	45.19%	624

Regarding the difference between native and non-native authors in terms of the use of hedging devices in different sections of research papers, it was found that native authors outnumbered non-native authors in introduction and literature review and result and discussion sections. They used 401 hedging words in the introduction and literature section compared to 293 hedging words used by non-native authors. Native and non-native authors used 566 and 282 hedging words in the results and discussion section respectively. Using 49 hedging words in the methodology section, non-native authors outnumbered native authors who used 25 hedging words in this section.

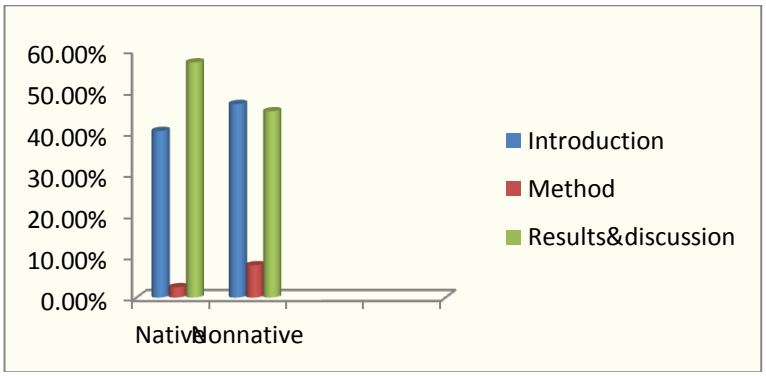

Figure 2. Percentage of hedges in different sections of papers by native and non-native authors

4. Is there any significant difference in the frequency of hedging devices in different sections of a research paper by native English speaking authors (NESA) and non-native English speaking authors (NNESA)?

Three chi square analyses were run to explore any significant difference between the native and non-native authors' use of hedging devices in different sections of research papers. Tables 4, 5 and 6 show the chi square results for the three sections of introduction and literature, methodology and results and discussion. As can be seen, there is a significant difference between the two groups of authors in terms of utilizing hedging devices in introduction and literature (X^2 = 694.00, df = 1, p<.05), methodology (X^2 = 74.00, df = 1, p < .05) and results and discussion sections (X^2 = 848.00, df = 1, p < .05).

TABLE4.
CHI SQUARE RESULT OF THE INTRODUCTION AND LITERATURE REVIEW SECTION OF PAPERS BY NESA & NNES

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	694.00[a]	1	.000
Likelihood Ratio	945.21	1	.000
Linear-by-Linear Association	693.00	1	.000
N of Valid Cases	694		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.47.

TABLE 5.
CHI SQUARE RESULT OF THE METHODOLOGY SECTION OF PAPERS BY NESA & NNES

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	74.00[a]	1	.000
Likelihood Ratio	94.65	1	.000
Linear-by-Linear Association	73.00	1	.000
N of Valid Cases	74		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.47.			

TABLE 6.
CHI SQUARE RESULT OF THE RESULT AND DISCUSSION SECTION OF PAPERS BY NESA NNESA

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	848.00[a]	1	.000
Likelihood Ratio	1078.60	1	.000
Linear-by-Linear Association	847.00	1	.000
N of Valid Cases	848		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 93.78.			

In addition, a chi square analysis was run to compare the general utilization of hedging devices by native and non-native authors in three sections of papers. The result of the chi square is shown in table 7 ($X^2 = 34.63$, df = 2, $p < .05$) and confirms that generally there is a significant difference between native and non-native authors in terms of using hedging devices in different sections of papers.

TABLE 7.
CHI SQUARE RESULT OF THE THREE SECTIONS SECTION OF PAPERS BY NESA NNESA

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.631[a]	2	.000
Likelihood Ratio	34.056	2	.000
Linear-by-Linear Association	13.654	1	.000
N of Valid Cases	1613		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 27.33.			

VI. DISCUSSION

Hedging devices are tools that can be used to manage the tone, attitude and information within a discourse (Getkham, 2011). They are central to academic writing in that they help writers to reduce their commitment to the truthfulness of a statement (Hyland 1998 cited in Hinkel 2004). In addition, hedging devices help authors to express tentativeness and possibility and to present unproven propositions with caution and precision. (Hyland, 1996).

The present study had four-fold purposes. It set out to investigate the frequency of using the different kind of hedges by native and non-native authors, any significant difference between native and non-native authors, the distribution of hedging devices in different rhetorical sections of papers by native and non-native authors and the existence of any significant difference in this regard.

The results revealed that native authors employed different kind of hedging words more frequently than non-native authors. As far as the kind of hedging words is concerned, shields were the most common in papers by both native and non-native authors. This finding confirms the result of some other studies conducted on hedging devices. For instance, Getkham (2011) found that modal auxiliaries which are part of shields were the most frequently used strategy with the average of 4.35 in applied linguistic research articles. It was concluded that modal auxiliaries can be the most straight forward device to express modality. In addition Nasiri (2012) also found that shields were the most frequently utilized hedging devices by both Iranian and American authors in the field of civil engineering.

In an attempt to investigate the frequency and type of hedges utilized in the introduction section of research articles in the field of literature written by Persian and English authors, Samaie, Khosravianb and Boghayeri (2014) found that modal auxiliaries that are related to shields were the most frequent hedge types used in the corpus under study. In a recent study Afshar and Bagherieh (2014) suggested that shields were one of the most frequently employed types of hedges in the abstract section of theses in the fields of Persian literature and civil engineering.

The second research question addressed the existence of significant difference in the frequency of hedging devices used by native and non-native authors. The chi square analysis confirmed that native authors used significantly more hedges compared to non-native authors. This result is in line with some other studies done on hedging devices (e.g. Atai & Sadr, 2006; Yang, 2013, & Samaie et al., 2014). The difference can be due to the fact that the corpus of the study was from two groups of authors from different linguistic and cultural background. While one group wrote in their native language, the other wrote in a foreign language. L2 writers typically utilize few hedging devices which are "associated with conversational discourse and casual spoken interaction" (Hinkel, 2005 P.29). They do not receive much instruction

in hedging devices and how to use them and hence they are mostly unfamiliar with them. Another possible cause of the difference can be the concern of Iranian and English authors when writing their articles. While English authors write with their readers in mind, Iranian authors are not concerned much with potential readers. Hence, Iranian learners focus on propositional content of their text rather than its affective nature and as a result the discourse they create contain less metadiscourse and hedging devices compared to English authors (Falahati, 2004).

The observed difference can also be justified in terms of the difference between English and non-English rhetorical traditions. Rhetorical persuasion of many non "Anglo-American" traditions does not require hedging and many non-native authors do not concern themselves with the desirability of hedging devices, generalizations and claims (Hinkel, 2004) and as a result do not use hedging devices frequently.

The third research question was concerned with the distribution of different type of hedges in different parts of papers. It was found that native authors outnumbered non-native authors in the introduction and literature and results and discussion sections and utilized less hedging devices in methodology section compared to non-native authors. Hence, as our last research question we investigated the existence of any significant difference in the distribution of hedges in different sections of papers by these authors. The result of chi square suggested that the difference is a significant one. Although native authors used more hedges in introduction and literature and results and discussion parts compared to non-native authors, these two sections were also the most heavily hedged parts in papers by non-native authors. This is a finding that has been confirmed by some other studies (e.g. Salager-Meyer, 1994; Yang, 2013) that showed that these two sections usually feature with the frequent use of hedges.

Different frequency of hedging words in different sections of papers can be attributed to the different purposes of those sections (Falahati, 2004).

As yang (2013) stated, one of the aims of the introduction part is to introduce the topic of the discussion and researchers should review previous studies to note their limitations and estimate various view points. West (1980, cited in Mirzapour, & Mahand, 2012), stated that the reason of the study is justified in introduction part by showing the gap in the literature and the significance of the study. Therefore, authors employ hedging as a useful strategy to cautiously introduce their views toward other studies.

According to Swales (1990) discussion "mirror-images the Introduction by moving from specific findings to wider implications" (P. 133). The major aim of the discussion is to report the result and draw conclusion (Getkham, 2011). In addition authors make claim and argue the result of their study in discussion, therefore, hedges are highly represented in this part (Hyland, 1994).

Regarding the methodology section, its function is to present factual information about the participants, instruments and procedures of the study. It is the least discursive section of papers which utilizes the least amount of hedging devices (Hyland, 1994). The result of the study also showed that both native and non-native authors used the least amount of hedging in this section. What is more, non-native authors used more hedges compared to native ones in this section. This can be due to unfamiliarity of non-native authors to the rhetorical conventions of the English speaking community. They do not often receive instruction in the use of hedges and many of them conceive hedging as one the most problematic areas of English writing convention (Hyland, 1998, cited in Nasiri, 2012).

The result of this unfamiliarity and lack of instruction is that non-native authors usually make fewer hedges compared to native authors and they may use them inappropriately. Sometimes as in the case of this study, they overuse hedges in sections which do not necessitate their use.

VII. Conclusion and Implication

"Hedging refers to linguistic strategies that qualify categorical commitment to express possibility rather than certainty" (Hyland, 1996 P.251). They are one of the characteristics of many rhetorical traditions that help authors to decrease their responsibility towards the truth value of statements and to convey politeness and hesitation (Hinkel, 2005). Hedges also make it possible for authors to reveal their attitude to the truthfulness of claims and predicate potential objections (Hyland, 1996). Hyland (1994) stated that Varieties of cognition is the focus of academics and cognition is necessarily "hedges". Besides, enabling authors to express claims with precision, caution, and modesty hedges are a significant resource for academics (Hyland, 1996).

The purpose of this study was to compare the frequency of hedges used by native English speaking authors and non-native English speaking authors in their research articles and the distribution of hedging devices in different rhetorical section of papers by these authors. The findings of the study revealed that generally native authors employed more hedges compared to non-native authors. In addition, it was found that non-native authors are not so much familiar with hedges and do not know how to use them appropriately.

This can have some pedagogical implication for language instructors, particularly in second language and foreign language contexts. They should familiarize learners with the role and importance of hedging devices in academic writing. L2 students should be aware that learning to use hedging devices appropriately is a crucial communicative resource for them since it can help authors to develop academic arguments and establish a relationship with their readers (Hyland, 1996). Moreover**,** as a crucial tool to effective argument in scientific writing, hedging devices can help authors to gain acceptance for claim from both readers and a powerful peer group by presenting appropriate and cautious statements and to negotiate the perspective that helps the conclusions to be accepted (Hayland, 1996).

Learners should also be reminded that hedges are beneficial for them when they want to get their papers published in journals that are reviewed by native English speakers and hence find a voice in their discipline (Nasiri, 2012).

Instructors and course designers can employ various techniques to help learners improve their ability in using hedging devices. For instance, Getkham (2011) suggested that instructors include several devices related to particular functions in the curriculum. They should also make students aware of different types of hedging devices and to state the relationship among functions and language. Wishnof (2000) suggested instructors to provide students with activities that help them to increase their language awareness, in particular with regard to using hedging devices.

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