The Use of Hedging Expressions in Research Articles by English Native and Non-Native Researchers

استخدام ألفاظ التحوط في مقالات بحثية لباحثين ناطقين بالإنجليزية وغيرها

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Authorization

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Abstract

This study was an attempt to explore "The Use of Hedging Expressions in Research Articles by English Native and Non-Native Researchers". The corpus represented thirty authentic research articles by different language back - grounds researchers. It aimed to investigate and find out the extent of use of hedging types and expressions used by researchers. A special emphasis was given to the introduction and conclusion sections of the research articles. To achieve this goal, the researcher raised the following four questions:

1. **What are the types of hedging expressions used by English, Arab and Chinese writers or researchers?**

2. **What are the most frequent hedging expressions used by English, Arab, and Chinese writers or researchers?**

3. **In what sections of the articles – introductions or conclusions, are most hedging expressions used?**

4. **What are the implications of the use of the hedging expressions by different language background writers?**

To answer the above questions, the researcher used simple descriptive, contrastive, statistical analyses such as means, frequencies and percentages. Moreover, Hyland's taxonomy of hedges was used.

The results of the study showed that English native researchers tended to use hedging expressions more than non – native researchers. Moreover, the results showed variation and difference in the use of hedging expressions by researchers both qualitatively and quantitatively.

استخدام ألفاظ التحوط في مقالات بحثية لباحثين ناطقين بالانجليزية وغيرها

إعداد

عبير نديم حرب

اشراف

الاستاذ الدكتور: رياض حسين

ملخص الدراسة

هذه الدراسة هي محاولة لكشف النقاب عن " استخدام ألفاظ التحوط في مقالات بحثية لباحثين ناطقين بالانجليزية وغيرها".و تضمنت الدراسة ثلاثين مقالاً بحثياً لباحثين من خلفيات لغوية مختلفة. وهدفت هذه الدراسة الى اختبار مدى استخدام هؤلاء الباحثين المختلفين انماط والفاظ التحوط وقد اولت هذه الدراسة التركيز على المقدمة والخاتمة لكل مقالٍ على حدة.

ولتحقيق هدف الدراسة قامت الباحثة بطرح الاسئلة الاربعة التالية:

1- ما هي اكثر انماط التحوط استخداماً عند الباحثين الناطقين بالانجليزية وغير الناطقين بها؟

2- ما هي اكثر الفاظ التحوط استخداماً عند الباحثين الناطقين بها وغير الناطقين بها؟

3- أي من أجزاء المقال, المقدمة ام الخاتمة, يكثر فيها استخدام الفاظ التحوط؟

4- ما هي المعاني المتضمنة في استخدام الفاظ التحوط عند الباحثين المختلفين؟

للإجابة على هذه الأسئلة, استخدمت الباحثة تحليلاً احصائياً وصفياً مقارناً بسيطاً يتضمن: الوسط الحسابي, التكرار, والنسبة المئوية. واتخذت الدراسة تصنيف (Hyland) لانماط والفاظ التحوط اساساً لها.

و لقد أظهرت النتائج ان الباحثين الناطقين بالانجليزية يميلون الى استخدام الفاظ التحوط اكثر من غيرهم من الباحثين غير الناطقين بها. وبينت نتائج الدراسة التباين والتنوع في استخدام الفاظ التحوط كماً ونوعاً.

Chapter One

Introduction

Writers often tend to qualify their statements, particularly in the context of scholarly writing and publication in order to engage their audience, meet their expectations and be conscious of minor details. Hence, hedges can serve as mediators between the knowledge and information in a text and the interpretation or explanation by the author. However, the use of hedges is bound by culture and context. Their use is therefore context-sensitive and bound by the written text. To this effect, written texts must be analyzed in a specifically controlled context to uncover the strategies of hedging authors use to qualify their statements. Hedges, as well as many other tools, can be used not only to qualify, rectify, moderate, tone down or over-emphasize certain statements and texts, but also to create the sometimes confusing feeling that one reads a new text each time he or she returns to the same text.

The words *hedge* and *hedging* can be broadly defined as referring to a barrier, limit, defense or the act or means of protection or defense (OED). Many of the

pragmatic interpretations of these two terms might be associated with their general meanings suggested in the *Oxford English Dictionary*. However, this should by no means indicate that no other dimensions can be explored, particularly when it comes to written articles.

An attempt is made to analyze the frequency of occurrence and distribution of hedging devices in thirty research articles written by native and non-native speakers of English – namely English, Arabic and Chinese. Research articles demonstrate the way hedges are used, and outline the linguistic means employed, hedging included, to achieve specific purposes pertaining to toning down or scaling up of the weight of the argument(s) at hand.

Theoretical Background

Two types of hedges or two reasons for hedging can be discerned: one type of hedges deals with certain linguistic items that affect the truth-conditions of propositions; the other type reflects the degree of the speaker's commitment to the truth-value of the whole proposition. Or, to quote Hyland (2000, 179), "the crucial importance of hedges lies in the fact that readers expect claims to be warranted in terms of the assessments of reliability they carry, and appropriate in terms of the social interactions they appeal to". Vold (2006) also writes about *real*

hedges, which serve to give an accurate picture of the level of certainty, and *strategic hedges,* which may fulfill a variety of functions. In short, hedges are used to express the writer's attitude to both proposition and readers.

Hyland (1998) states that straightforward definitions of the notions of *hedges* and *hedging* are rather rare. As it will be later explained, different authors use both terms differently. Lately, researchers have become very strongly concerned about the use of hedges in scientific discourse, i.e. research articles and scientific texts (Hyland, 2000; Salager-Meyer, 1997; Markkanen & Schröder, 2006; Réfega de Figueiredo-Silva, 2001; Vold, 2006). The arguments in favor of such research are very strong: English has become the lingua franca of academic discourse, young researchers as well as renowned ones, despite their nationality, have to express themselves in this language if they want to be fully accepted members of the international academic community. Therefore, the issue of hedging, alongside with other linguistic, cultural, rhetorical aspects became strongly accentuated and researched cross-linguistically and cross-disciplinarily in academic discourse. Nevertheless, other genres like editorials and news stories as well as different registers within these genres also employ hedging strategies.

It goes without saying that readers employ their knowledge about the world when they read and interpret a written text. The process might take place subconsciously or can be otherwise deliberate particularly if the level of text complexity requires such a tendency. To be well-interpreted and understood by readers, a text involves internal and external pieces of evidence that might prove to be instrumental in trying to arrive at the meaning of a written text. Contrary to their designations, both types of evidence mean something that is to the contrary of what their denotative meanings indicate; internal evidence pertains to factors that rest inside the text to help shed more light on the potential embedded meaning – put differently, the only factor an author shares with his readers inside the text is language. Language is not something that is idiosyncratic and is hence attached to other strings outside the text – the ideas, images and connotations it carries. Therefore, internal evidence is ironically an external one since it must fall back on knowledge outside the text in order to illuminate what is inside the text. Similarly, external evidence can be seen as an internal one; factors outside the text like the author's biographical information, intention (if any) and private idiosyncratic denominations that will prove difficult to decipher save after the

cooperation of the author – although they technically exist outside the written text.

Authors have to leave a trace for readers to follow in order to try to lure them into what they think is the targeted meaning of the text. Such a trace can be left by resorting to numerous means and tools like hedges, but also puns and other figures of speech in literary texts. Therefore, reader-text interaction is also matched by meta-discourse or reader-author interaction. Such interaction can create the impression that one reads a new text every time he or she revisits (re-reads) the same text; the cause can be traced to interaction as readers tend to employ their knowledge about the world to grapple with the meaning (if any) of the text. They (readers) then tend to interact with the ideas suggested in statements by expressing – albeit subconsciously, their approval, rejection, or confusion of the ideas the author states or suggests .It is a feeling that somehow resonates well with the idea of dialogue that was defined by Vande Kopple (1977:2) as “discourse used by people not to expand their referential material, but to help their readers connect, organize, interpret, evaluate and develop attitudes toward that material.”

Notably, a text can help prompt versatile reactions among readers, for they often tend to react toward the sender (speaker/ author) and message (content/ text). Otherwise known as tone, the attitude of the recipient/ reader toward the sender/ author can very much be augmented, qualified or minimized by the readers' attitude toward what they read. Such attitudes cannot be obtained through simple scientific one-to-one correspondence of the sign and its signified; they would rather involve elements outside the text to go beyond the immediate "intended" signified.

Statement of the Problem:

The study of hedging and hedging expressions has gained some popularity in literature lately, despite the widespread claim that foreign (non-native) writers and researchers use proportionally fewer hedging expressions in their writings. This, of course, may be due to the fact that their academic training and cultural background largely differ from those of English native speakers.

The researcher therefore seeks to put this hypothesis to test in order to probably confirm or rule it out altogether. Besides, the researcher has attempted to explain the discrepancy of use of hedging by native and non-native speakers.

Such an explanation might yield some data about attitudes in a given text. Explanation of attitudes might contribute to the detection of attitude and subjectivity in text –which have received increased attention over the past several years. Whereas standard text classification typically deals with the identification of the topic of a text, it has become clear that attitudes expressed in the text constitute another very useful dimension.

Objectives of the Study:

The study aimes at tracing the causes and goals behind the use of hedging in research articles. To this effect, a number of articles written by native and non-native speakers have been quantitatively and qualitatively analyzed to trace the influence of the use of hedging on qualifying research statements and findings. The articles have been used to study the frequency and types of hedging expressions, particularly in the introduction and conclusion sections. The study has tried to trace back the causes that prompted the authors to opt for such hedges and develop a theoretical framework (if any) that governs the process. It has also probed the question of objectivity in writing as hedges indicate attempts

on the author's part to scale down the impact and tone of the statements used in the written text.

The study analyzed thirty research articles in order to highlight to what extent these authors are sensitive to higher or lower degrees of cultural sensitivity to tone down or magnify the impact of a written statement, especially when it comes to conclusions and research findings. The articles have been analyzed to trace hedges by type, classification and frequency.

The study has also determined whether or not hedges are more preferably used in introductions or conclusions so as to figure out why writers have opted for tampering with the alleged objectivity they claim to observe in their work and findings. It has also tried to detect and explain why some hedging expressions are used more frequently than others. In doing so, the study seeks to suggest possible alternative versions of conclusions without the interference of hedges to prove that the objectivity of the written texts has been compromised. In other words, the researcher has examined the concluding paragraphs without incorporating the hedges to reveal the extent to which their absence would influence the tone of writing.

Questions of the Study:

5. What are the types of hedging expressions used by English, Arab and Chinese writers or researchers?

6. What are the most frequent hedging expressions used by English, Arab, and Chinese writers or researchers?

7. In what sections of the articles – introductions or conclusions, are most hedging expressions used?

8. What are the implications of the use of the hedging expressions by different language background writers?

Definition of Terms:

- Hedges and Hedging: The words hedge and hedging can be broadly defined as referring to a barrier, limit, defense or the act or means of protection or defense (OED):(2004). Linguists almost unanimously define hedges as a means to tone down utterances and statements, to reduce the risk of what one says, to mitigate what might otherwise seem too forceful, to be polite or show deference to strangers or superiors, etc.

- Hedging can also be defined as the "statements in which an author distances him-/herself from his/her claims or signals low certainty: *these results might indicate that . . . possibly . . .* "(Hyland 1998).

- Zuck and Zuck (1986: 172) define hedges as "the process whereby the author reduces the strength of what he is writing" in case the reported news turns out not to be true. They try to extend the scope of hedging in a way that draws on pragmatic uses of the term in language.

- Native Writers: writers whose native language is English.

- Non-Native Writers: for the purpose of this study, non-native writers are those whose native languages are Arabic and Chinese, but have the proficiency of writing in English.

- Word: for the purpose of this study, a word can be defined as an orthographic unit which is surrounded by two spaces.

Limitations of the Study:

The results of the study cannot be generalized to all research articles written in the languages under investigation due to the limited number of sample articles analyzed. The study results cannot therefore be generalized beyond the sample

and the materials that will be used in this study. Another limitation has to do with the time in which this research has been conducted as the findings may not hold if this research is replicated twenty or thirty years later, or earlier.

Chapter Two

Review of Related Literature

This chapter introduces two major sections; the first is the theoretical literature and the second deals with the empirical studies.

Theoretical Literature:

Traces of hedging can be found across various fields and areas of knowledge. Analysis of the corpus of studies across genres has revealed the traits or characteristics of hedging. A survey of a larger cross- section of studies highlights how much the phenomenon has permeated this area of scholarship. Hyland lists the researchers who made such characteristics or traits discernable for many as follows: “Analyses of written academic corpora have revealed some of the characteristics of hedging in text-books (Myers, 1992), economic forecasting (Pindi & Bloor, 1986), science digests (Fahnestock, 1986), abstracts (Rounds, 1982), medical discourse (Salager-Meyer, 1994) and molecular genetics articles (Myers, 1989). Studies have also shown the importance to academic discourse in

general of modal verbs (Hanania & Akhtar, 1985; Butler, 1990), imprecise numeric expressions (Channell, 1994; Dubois, 1987) and “commentative” items (Adams-Smith, 1984; Skelton, 1988).” (Hyland 1996)

As it has been earlier explained in the definition of terms, linguists tend to define hedges as a means to tone down utterances and statements. Hyland maintains that hedging is the expression of tentativeness and possibility and that it is central to academic writing where the need to present unproven propositions with caution and precision is essential (Hyland 1996). He also adds that “hedging has received a great deal of attention in conversation analysis where devices such as *I think, sort of, maybe* and *possibly* are frequently used to create conviviality, facilitate discussion, show politeness and oil the *phatic* wheels (eg Holmes, 1984 & 1995; Coates, 1987)”, (Hyland 1996). The latter argues that hedging – in scientific research writing, "cannot be fully understood in isolation from social and institutional contexts." (1996: 433).

Highlighting the types of hedges used with reference to functionality prompts one to emphasize the different functions of hedges. Falahati(2002) suggests two types of functions/models for hedges: the *politeness* and *poly-pragmatic* models. Falahati adds that hedging has been treated as a sign of politeness by Brown and

Levinson (1987) in their unified model of politeness in spoken context. According to this model, hedging is a strategy which is employed to reduce the risk of confrontation in social interactions. “In this model, hedges are one type of linguistic device through which negative politeness strategies can be realized. Negative politeness, according to Brown and Levinson (1987: 129), refers to addressee’s “want to have his freedom of action unhindered and his attention unimpeded” (Falahati 2002). However, this model can be criticized on the premise that it lacks the distinction between negative and positive politeness. It seems that the line between the two kinds of politeness is not as clear as it is indicated by Brown and Levinson’s study. Falahati claims that as a result of the *polysemous* and *poly-pragmatic* nature of hedging tools, Hyland asserts that assigning specific meanings exclusively to particular forms is not attainable. In light of the categories, Hyland defines (surveyed above), hedging categories always convey traces of meaning which are sent by the other.

According to Hyland, content-oriented hedges can be defined as expressions that “mitigate the relationship between propositional content and a representation of reality; they hedge the correspondence between what the writer says about the world and what the world is thought to be like.” All in all, the writer is concerned

with accuracy in this situation. Accuracy-oriented hedges involve "the writer's desire to express propositions with greater precision in areas often subject to revision." In this case, hedging becomes an important instrument to stress uncorroborated facts or statements. According to Hyland again, the use of attribute hedges, which signify variability, "allows deviations between *idealised* models of nature and instances of actual *behaviour* to be accurately expressed. They enable writers to restructure categories, define entities and *conceptualise* processes more exactly to distinguish how far results approximate to an *idealised* state, specifying more precisely the attributes of the phenomena described." (1996)

Lakoff, a pioneer in this field, defined items like *largely, rather… etc* as words which "make things fuzzier or less fuzzy" (Lakoff 1972). However, further researches showed that though there exist certain commonalities concerning the role of hedges in everyday and institutional communication, scholars' opinions differ concerning the inventory of hedges, their functions, reasons for hedging etc. Thus, for example, Markkanen and Schröder (2006), following Prince/Frader/Bosk (1982), distinguish two types of hedges, or two reasons for hedging: one type of hedges deals with certain linguistic items that affect the

truth-conditions of propositions; the other type reflects the degree of the speaker's commitment to the truth-value of the whole proposition. Or, to quote Hyland (2000, 179), "the crucial importance of hedges lies in the fact that readers expect claims to be warranted in terms of the assessments of reliability they carry, and appropriate in terms of the social interactions they appeal to". Vold (2006) also writes about *real hedges,* which serve to give an accurate picture of the level of certainty, and *strategic hedges,* which may fulfill a variety of functions. In short, hedges are used to express the writer's attitude to both proposition and readers. Koutsantoni (2006) classifies these functions into the following five categories: limitations of method, limitations of the scope of the paper, limited knowledge, agreement of other research and limitations of the study. Writers use strategic hedges to protect themselves from negative criticism and admit limitations of their work.

Yet, it seems that scholars are keen on the causal correlation between hedges and a written piece. They opt for classifying the use of hedging within a needs-based framework or approach. The goal, thus, is to stress the indispensible nature of hedges – suggesting that they simply satisfy certain needs and requirements, and that they are hence integral to written texts or discourse in general. Ken Hyland

echoes this idea in particular: “In sum, hedges anticipate a need to justify claims because the writer is dependent on their ratification by the reader. The writer must make a hypothesis both about the nature of reality and about the acceptability of the hypothesis to an audience, the question of adequacy corresponding to the objective negatability of a proposition and acceptability to its subjective negatability.” (Hyland 1996) As a result, Hyland asserts in an article published two years later that “straightforward definitions of the notions of *hedges* and *hedging* are rather rare” (Hyland 1998). All in all, hedging limits the writer's commitment to what he or she suggests or advocates, yet it helps him to avoid errors – especially when he or she is unsure or lacks knowledge about a certain issue.

Another major contribution by Ken Hyland to the theoretical foundation of this area of study can be found in his 1998 book entitled *Hedging in Scientific Research Articles* (John Benjamins). This book provides a comprehensive study of hedging in academic research papers, relating a systematic analysis of forms to a pragmatic explanation for their use. Based on a detailed examination of journal articles and interviews with research scientists, the study shows that the extensive use of possibility and tentativeness in research writing is intimately

connected to the social and institutional practices of academic communities and is at the heart of how knowledge comes to be socially accredited through texts. The study identifies the major forms, functions and distribution of hedges and explores the research article genre in detail to present an explanatory framework based on a complex social and ideological interpretive environment. The results show that hedging is central to scientific arguments, individual scientists and, ultimately, to science itself. The importance of hedging to student writers is also recognized and a chapter is devoted to teaching implications.

Brown and Levinson (1987: 145), define hedges as " a particle, word or phrase that modifies the degree of membership of a predicate or a noun phrase in a set; it says of that membership that it is *partial* or true only in certain respects, or that it is *more* true and complete than perhaps might be expected". They extend the boundaries of hedging to "negative" politeness which is used for avoiding threats to the face of the participants. Hedging in their model is still limited and mostly applied within the scope of speech acts theory and interpreted as a sign of politeness.

Hyland (1998: 5) defines hedges as “the means by which writers can present a proposition as an opinion rather than a fact: items are only hedges in their epistemic sense, and only when they mark uncertainty”. In this study, the definition by Hyland (1998) will be employed. The authors, through using hedging devices and showing uncertainty, try to show the amount of accuracy of their statements. At the same time, they attempt to save face in case of any possible falsification of their judgments. Through using hedges and attributing the ideas to oneself, writers also invite the reader to evaluate the truth value of the proposition as an independent and intelligent individual. (Falahati 2002)

Despite the counterargument that some might advocate as they note the possibility of such reader-text/ author interactions taking place in literary writing, hedges serve to remind readers of the permeability of such effects even outside figurative contexts to reach to scholarly writing. Swales (1990:112) tackles the idea as he coins the term “rhetorical awareness” to mean the ability of anticipating what referees want in a text. In other words, Swales is actually highlighting the delicate aspect pertaining to the influence audience might have on authors and texts. The author’s awareness of the type of the audience he or she addresses might prompt him or her to change, adjust, twist, tone down or

qualify the message or content of the written text – prompting thus the game of anticipating the recipient's expectations (if any), particularly in scholarly publications.

Although hedges can signal precision, weakening or qualifying or lack thereof, there has been little consensus over what the term "hedge" denotes (Crompton 1997). Due to the nature of hedging which represents a form of mitigation between writers and their community, Hyland (1998) states that hedging can be characterized as a category with a large number of attributes as he draws upon pragmatics, genre analysis, sociology of scientific knowledge and postmodernism. Hyland's work can facilitate the process of becoming more inclined toward considering hedging as tools at the speakers/ authors' disposal to signify some pragmatic considerations. Consequently, Hyland believes that hedges can have different semantic interpretations and a range of meanings to be conveyed in particular context (1998:77). He even categorizes hedges in research articles (scholarly writing) into content-oriented and reader-oriented hedges.

Hedging expressions are viewed as an essential feature in English academic writing (e.g. Skelton 1988, Holmes 1988, Hyland 1994, Hinkel 1997). For instance, Skelton (1988:38) states, "with a hedging system, language is rendered more

flexible and the world more subtle". Hyland (1994), stressing the significance of hedging in academic discourse, thinks that hedging expressions occur more than other linguistic features in academic discourse, and yet hedging gets less focus than other features do. He also concludes that most of the attention given to hedging is theoretical and that there needs to be more practical application in teaching materials.

One of the views which somewhat sees hedging as a negative feature, is Silberstein's (2001:101-2) interpretation of Lakoff's (1975) observations "that women's use of tag questions and hedges *per se* rendered them linguistically less powerful". It is seen that second language learners are encouraged to be acquainted with the importance and function of hedging.

Hedging has been defined or named differently in literature because its importance, function and forms have been viewed differently by different authors. Hinkel (1997:372) comments that "various definitions and classifications have been developed to account of their meanings, contexts, and implications in discourse."

Hedging is a basic feature in academic discourse (Rounds 1981) that enables academic writers to show their certainty and doubt towards their statements, to

show the amount of confidence they put on their claim, and to start a dialog with their readers. Through using hedges, writers leave some room for their readers to judge the truth value of the assertion. Hedging expressions can also be used in describing methods and results, discussing findings, and drawing conclusions from the evidence. Some examples of hedging are *may, assume*, *unclear,* and *probably*.

Varttala (1999) has emphasized the functions of hedging in research articles as the indicator of textual precision and interpersonal relationship. While literature emphasizes the importance of hedging, Hyland (1998) has stressed that we know little about its use, frequency, and distribution in different disciplines or genres. The neglect of the study on hedging in the past years is reported by Crystal (1995: 120) who attempted to shed light on the areas in English language studies which have not received enough attention. (Falahati 2002)

One definition of hedging is provided by Hyland (1994:240) who interprets Lakoff's (1972) definition as saying that it implies being "less than fully committed to the certainty of the referential information given". Similarly Biber (1988:240 reported in Hinkel 1997:372) views hedges as "markers of possibility/probability and uncertainty". Tribble (1996: 159) defines hedging as "a process in which a writer reduces their commitment to a particular idea or opinion through,

typically, the use of lexical or grammatical devices …" In addition without explicit mention of the term hedge, Thompson (2001) also views it as an expression of uncertainty.

For Holmes (1988:22) hedging can be expressed through epistemic devices, and she speaks about epistemic modality as a politeness device which reflects "deference rather than uncertainty". Similarly, many writers (e.g. Myers 1989; Hinkel 1997) consider hedging as one of the negative politeness strategies which implies distancing oneself and avoiding imposition on others as identified by Brown and Levinson (1987). Myers (1989) believes that hedging can be a requirement when naming something as well as when proposing something. He disagrees that all hedging expressions have the role of expressing probability, for these are the ones that show the relation between the writer and his reader.

Skelton (1988:37-38) sometimes refers to hedging as "*commentative* language" used to reveal what one thinks about what s/he says. However, Prince et al. (1982 reported in Skelton 1988) think that the speaker can be hedged and call this case a 'shield', or the proposition itself and call this an 'approximate'. Zuck and Zuck (1986: 172) define hedges as "the process whereby the author reduces the strength of what he is writing" in case the reported news turns out to be untrue.

They try to extend the scope of hedging in a way that draws on pragmatic uses of the term in language.

Counting and classifying is not an easy task. For instance, Skelton (1988:37) comments “there are a very large number of ways in which one can hedge in English”. He identifies the following: impersonal phrases, the modal system, verbs like “seem”, sentence-introductory phrase like “I think”, and the addition of *–ish* to certain adjectives. Holmes (1988:21) includes modal verbs, adjectives, tag questions and a fall-rise tone as ways of expressing doubt and certainty in English. Hyland (1994:240) lists the following ways of expressing hedging: modal auxiliary verbs (may-might-can), adjectival, adverbial and nominal modal expressions (possible, perhaps, probability), modal lexical verbs (believe-assume), IF clause, question forms, passive form use, impersonal phrases, and time reference. Also Hinkel (1997:372) classifies hedges and hedging devices into: lexical (about-kind of- may be), possibility (by any chance- hopefully- perhaps-*if* structure), quality (as is well known- they say), performance (apparently-basically- certainly-undoubtedly), and hedged performative verbs (hedged: want to/would like to/can/may + Performative: ask/call/mention/speak/discuss/note).

Empirical Studies:

Researchers have found that hedging is used differently across different disciplines. In his study on hedging across the three disciplines of economics, medicine and technology, Varttala (2001) has reported that the incidence of hedging in economics is the highest whereas the overall number of hedges in medicine and technology is about one third lower. His study showed that the discussion section is the most heavily hedged section in research articles followed by introduction. The findings also demonstrated that hedges are more evenly distributed in technology articles than in the other two disciplines he approaches.

In his attempt to examine the use of hedging in English for Academic Purposes (EAP) and English for Science and Technology (EST) textbooks, Hyland (1994) examined a corpus of 24 textbooks which were representative of a range of writing material intended for L2 students. He concluded in his analysis of the corpus of the study that the general interest in modality which exists in the research literature is not widely reflected in the pedagogic materials. He also found that EAP writing texts as dealing with the issue of modality compared to ESP materials.

In his article entitled “The Use of Hedging across Different Disciplines and Rhetorical Sections of Research Articles”, Reza Falahati refers to an unpublished thesis by Yangli Yang. In a quantitative and comparative study of hedges in English and Chinese academic discourse, Yang (2003) investigated the frequency and distribution of hedges across the two languages and the rhetorical sections of the research articles. The results of the study showed that the introduction, discussion and result sections are the parts which contain the most hedges in English research articles.

Hedging is also studied in modern economics to examine how it can modify claims in research articles. Bloor and Bloor (1993) used a set of eleven economic texts to extend the empirical evidence on hedging in this field. Their main objectives in the study were to investigate the way in which economists make knowledge claims in research articles and also to see how far their claims are modified. The authors of this study stated that the amount of hedging that researchers use in their work is closely connected to the type of claims that they make in their study. In this research they focused on different kinds of claims, namely field central, critical and meta-textual claims. (Falahati 2002) They also mentioned that

economics texts are less hedged than biology articles – which might qualify as a topic for further investigation.

In his article entitled "Hedging in English Journalistic Economics", Gudrun Clemen conducted an analysis to prove that hedging is found in economic texts. Clemen set out to identify the discursive strategies in this genre and gave an idea of the frequency with which hedges can be found in periodicals dealing with political economy and economics. In his study, Clemen traced the hedging techniques used in the British weekly business magazine, *The Economist*; he selected 13 copies covering three months in 1993 – with specific focus on two regular columns. Clemen's major findings emphasized modal verbs are of extreme importance, including their wide range of frequencies with "*may*" being the front runner in this particular study. The findings also stressed that modals mark the writer's attitude toward the proposition made – the epistemic use. He also highlighted the fact that modals overlap in meaning as each modal has several meanings.

Another empirical study that highlights the use of hedging in a specific context or with reference to a specific sample population is Inesa Seskauskiene's "Hedging in ESL: a Case Study of Lithuanian Learners" (2008). The paper focused on the use of

hedging devices by L2 users of English or by English major undergraduate Lithuanian students to be more precise. The study focused on the introduction section of the student's papers. According to Seskauskiene, the findings did not support the view that L2 users of English can hardly notice hedges in the text as Low 1196, and Hyland 2000 suggested. The study stressed that more advanced and proficient learners of English are able to produce texts which can be comparable in terms of hedging to those produced by experienced academics – despite the fact that Hyland (1995: 39) has already claimed that hedging represents a major "rhetorical gap" for L2 students and that they often transfer hedging strategies from their L1 irrespective of language proficiency level.

In a similar vein, Jennifer R. Wishnoff's "Hedging Your Bets: L2 Learners' Acquisition of Pragmatic devices in Academic and Computer-Mediated Discourse" (2000), investigates the effects of instruction on pragmatic acquisition in writing with particular focus on the use of hedging devices in the academic writing of ESL learners. The study highlighted the fact that the group treated for enhancement of their ability to use hedging devices showed statistically significant increases in the use of hedging devices in the research papers and computer-mediated discussion.

Furthermore, it seems that any writing exercise is almost always associated with achieving certain goals or conveying particular messages. Since writing is thus result-oriented (i.e. tends to privilege results over other considerations in the best case scenario), authors of research articles are more prone to be followers of such a tendency. Hyland (1996) asserted such an assumption and tendency in his "Writing without Conviction: Hedging in Scientific Research Articles". Hyland maintained that "The publication of scientific results seeks to accomplish both institutional and individual goals." He also added that "a research paper not only extends understanding of phenomena and theories that the current paradigm deems worthy of study, but also helps support or establish the personal reputation of the writer." As he had noted, "in seeking recognition for their accomplishments, writers will therefore generally make the strongest claim for which they have epistemic authority." (1996)

Consequently, classifying types of hedging in terms of their use has become a primary preoccupation. This functional framework endows hedges with an occupation nature that cannot be captured save in listing their types broken by their primary focus. Although Hyland categorizes hedges into two primary classes – content-oriented and reader-oriented ones, he nevertheless delineates sub-

categories of hedges such that can further exemplify the interesting phenomenon of hedging; these sub-categories are as follows: Content-oriented, Accuracy-oriented, Attribute, Reliability, Writer-oriented and Reader-oriented hedges. (Hyland 1996)

Reliability hedges, however, indicate the writer's confidence in the truth of a proposition; "they acknowledge subjective uncertainties and are motivated by the writer's desire to explicitly convey an assessment of the reliability of propositional validity." The last two types that are split between the two significant sides to the reading/writing process involve writers and readers alike. Writer-oriented hedges qualify as a limitation to writers; they constrict their ability to make statement-based commitments since they prompt speculative approaches. The latter type (reader-oriented hedges) betrays a writer's preoccupation with interactional effects since authors, by nature, give much attention to the impacts their statements might have on readers.

It goes without saying that the English hedging items referred to throughout this study fall under British or American English in general since both dialects, among few others of course, represent standard forms of English. British and American English are the reference norms for English as spoken, written, and taught in the

rest of the world. For instance the English-speaking members of the Commonwealth often closely follow British English forms while many new American English forms quickly become familiar outside of the United States.

Chapter Three

Methods and Procedures

This chapter provides information on the methods used in this study. It describes the corpus and the types and frequency of hedging expressions in both the introduction and conclusion of each article. In addition, data collection and data analysis procedures are explained and finally procedures of the study are outlined.

Methodology

The methodology used in the present study is data-based, descriptive, contrastive and analytic. A corpus which represents authentic research articles by researchers of different language background has been selected and investigated to find out the extent of use of hedging expressions used. There has been special emphasis on the introduction and conclusion sections of the research articles as they might bear more indicative features of hedging expressions.

Study Corpus:

Thirty articles or research reports written (academic writing) by native and non-native researchers constitute the corpus of this study. These articles are equally

distributed among the three language researchers, namely English, Arabic and Chinese. Each article consists of a minimum of 4000 words or more. They all belong to the same academic field or discipline, namely linguistics or applied linguistics. Focus primarily falls on the introductions and conclusions since they are meticulously and carefully hedged due to their significance in attributing a judgmental weight to the information therein.

Academic writing here refers to writing conducted in the academic world which aims to inform rather than to entertain. Wikipedia (http:en.wikipedia.org/wike/Academic writing) mentions eight kinds of academic writing that are conducted in several sets of forms and genres. They are standard forms, summaries of knowledge, collating the work of others, research and planning, disseminating Knowledge outside the academy, technical or administrative forms, personal forms, and newer forms.

Introductions are generally thought of as less hedged sections than discussions, but more hedged than methods (Hyland 1995: pp37-38). This understanding is quite natural since discussion requires judgments and comments more than any other section. However, the Introduction, where the author mainly gives an overview of previous research, identifies alternative frameworks for his/ her

research and finds himself/ herself a niche, is not devoid of hedging. In this section the author should clearly give an evaluation of the sources and express his/ her point of view as to which framework s/ he adopts. Evaluation usually involves criticism, which, in its turn, requires caution expressed by hedging. Hedging expressions are not evenly distributed across all sections of an academic research article (Salger-Meyer 1997). Since introductions and conclusions/ discussions tend to introduce and conclude an argument, hedges are more often employed therein. In other words, these two sections are the most sensitive ones to the admissibility of hedging expressions in order to make, stress, highlight, support, analyze and/ or refute a point.

For the analysis of the various research articles of this study, Hyland's taxonomy of hedges was used; this taxonomy was introduced by Hyland himself in his book entitled *Metadiscourse* (2005: 218). It should be noted here that this taxonomy does not make any distinction in relation to lexico-grammatical categories, this makes it a taxonomy that is more suitable for the analysis in the current study since it is based on calculating the presence (and frequency) of these elements regardless of their category. The list of Hyland's hedging items is as follows:

Table (1): Hyland's list of hedging items

Hyland's hedging items/ terms
About, almost, apparent, apparently, appear, appeared, appears, approximately, argue, argued, agues, around, assume, assumed, broadly, certain amount, certain extent, certain level, claim, claimed, claims, could, couldn't, doubt, doubtful, essentially, estimate, estimated, fairly, feels, felt, frequently, from my perspective, from our perspective, from this perspective, generally, guess, indicate, indicated, indicates, in general, in most cases, in most instances, in my opinion, in my view, in this view, in our view, largely, likely, mainly, may, maybe, might, mostly, often, on the whole, ought, perhaps, plausibly, possible, possibly, postulate, postulated, postulates, presumably, probable, probably, quite, rather (x), relatively, roughly, seems, should, sometimes, somewhat, suggest, suggested, suggests, suppose, supposed, supposes, suspect, suspects, tend to, tended to, tends to, to my knowledge, typical, typically, uncertain, uncertainly, unclear, unclearly, unlikely, usually, would, wouldn't.

However, this table is not the only means of categorization and classification of hedges Hyland has introduced. In his 1995 article entitled "The Author in the text: Hedging Scientific Writing", in Hong Kong Papers in Linguistics and Language

Teaching," Hyland opts for a different variation of spreading hedging expressions across categories as follows:

Table (2): sample of relative frequency of various hedges suggested by Hyland (1995)

Category	**Items per 1,000 words**	**Percent**	**Raw number**
Lexical verbs	**4.9**	**23.3**	**366**
Adverbial constructions	**4.4**	**21**	**329**
Adjectives	**3.9**	**18.8**	**294**
Modal verbs	**3.5**	**16.6**	**259**
Reference to limiting conditions	**1.3**	**6.1**	**97**
Modal nouns	**1.1**	**5.4**	**85**
Reference to a model, theory or methodology	**1.1**	**5.3**	**83**
Admission to a lack of knowledge	**0.7**	**3.5**	**55**
Totals	**20.9**	**100**	**1568**

Skelton (1988: 37) points out that there is a "very large number of ways in which one can hedge in English," including impersonal phrases, modals, verbs like "look, seem and appear" and introductory phrases like "I think" and the suffix "-*ish*" in connection with certain adjectives. It should be noted here that, unlike Hyland, Skelton abandons the term "hedge" in his study and adopts the word "comment" instead due to the negative connotation the first item has.

Holmes (1983 & 1988) deals with and emphasizes expressions of epistemic modality, but she does not offer a list that is as inclusive as the one Hyland provides. Hence, the latter's list is the one echoed in this study. Yet, it should also be noted that Holmes embeds a kind of power relationship reflected in the hedging items used by speakers to soften their utterances or indicate their higher/superior status throughout the interlocution – indicating, thus, a negative politeness function; this power-related attribute of hedges falls outside the scope of this study.

Hinkel's method of classifying hedges slightly differs from that of Hyland's. He overestimates the importance of Confucian, Taoist and Buddhist influence on the writers who succumb to these ideologies (Varttala 1999). The table below shows Hinkel's classification of the hedging devices taken from his article entitled "Indirectness in L1 and L2 Academic Writing" in (1997).

Table (3): Hinkel's list of hedging categories

Hedges and hedging devices
(a) **Lexical**: (at) about, in a way, kind of, maybe, more or less, most, something like, sort of
(b) **Possibility**: by (some/any) chance, hopefully, perhaps, possibly, in case of,

(if) you/we know/understand (what {pron} mean(s)) if structures distinguished from those used with conditional tenses
(c) **Quality**: as is (well) known, (as) you/everyone know(s), (as) people say, one/you may/might/can say, they say
(d) **Performative**: apparently, basically, certainly, clearly, definitely, likely/most likely/very likely, obviously, undoubtedly, seemingly, supposedly, surely
(e) **Hedged perfromative verbs**: Hedge: want to/ would like to/ can/may + Performative: as;/call/comment/discuss/explain/note/mention/point out/remark/speak/state/tell

For the purposes of this study, the following hedging items are borrowed from Hinkel to be blended with those selected from Hyland: maybe, perhaps, note and so to speak). Yet his list of hedges is again not as concise as Hyland's. Hinkel's method of classification, which is more complicated and vague than Hyland's, will not be followed in this study.

The thirty selected articles (of 4,000 words or more each) fall into three categories broken by authors (native speakers of English, Arabic and Chinese) – ten each. All articles were written and published in English in the areas of applied linguistics, ELT, EFL and TESOL. For the sake of wider representation and diversity of sources, the articles for this study were selected from the following various journals: *TESOL Journal, Asian EFL Journal, Journal of Pragmatics, Journal of English as an International Language, Reading in a Foreign Language, Computational Linguistics, Linguistic Inquiry, Jordan Journal of Modern Languages and Literature (JJMLL), MJAL, The Asian ESP Journal, Journal of Language Learning and Technology and ELT in China 2001*. The articles are representatives of both male and female writers in order to accommodate the gender perspective in relation to the use of hedging terms.

To be more specific, listed below are the hedging items to be traced for frequency and occurrence broken by their lexical categories. (i) The lexical verbs include the following: appear, assume, believe, claim, consider, feel, doubt, guess, hope, see, suggest, think, look and tend. (ii) The modal auxiliary verbs include can, could, will, would, may, might, ought to, must, have to and had to. (iii) Adverbial modal

expressions include actually, apparently, clearly, eventually, may be, obviously, perhaps, probably, possibly, likely, basically, finally, presumably and indeed.

Table (4): Articles written by native researchers

Author(s)	Title	Source & Year	No. Of Words	Article NO.
Ken Hyland	Claiming a Territory: Relative Clauses in Journal Descriptions	Journal of Pragmatics, 2010	**7,110**	**N 1**
Paul Robertson	Teaching English Pronunciation Skills to the Asian Learner	Asian EFL, 2006	**4,940**	**N 2**
Norman Fewell	Language Learning Strategies and English Language Proficiency: an investigation of Japanese EFL university students	TESOL Journal, 2010	**5,632**	**N 3**
Ian Clark	Collaborative Learning: the cultural barrier to effective language acquisition in Japanese classrooms.	Journal of English as An International Language, 2008	**5,734**	**N 4**
Cindy Brantmeier	Does Gender Make a Difference? Passage Content and Comprehension in Second Language Reading	Reading in a Foreign Language, 2003	**6,501**	**N 5**
Stuart Webb	The Effect of Context on Incidental	Reading in a	**4,710**	**N 6**

	Vocabulary Learning	Foreign Language, 2008		
Shaun O'Dwyer	In ELT, It's Time for Constructivists to Get Real	Asian EFL Journal, 2006	**7,350**	**N 7**
Catalina Hallett *et al*.	Composing Questions through Conceptual Authoring	Computational Linguistics, 2007	**7,563**	**N 8**
Jeffrey Heinz et al.	Remarks and Replies	Linguistic Inquiry, 2009	**4,402**	**N 9**
Peter S. Dash	English Only (EO) in the Classroom: time for a reality check?	Asian EFL, 2008	**4,074**	**N 10**

Table (5): Articles written by Arab researchers

Author(s)	Title	Source & Year	NO. Of Words	Article NO.
Reima Al-Jarf	Large Student Enrollments in EFL Programs: Challenges and Consequences	Asian EFL Journal, 2006	**6,653**	**A 1**
Ahlam Al-Harbi	Mother Tongue maintenance and Second Language Sustenance: a two-way language teaching method	TESOL Journal, 2010	**4,469**	**A 2**
Maher M. Fattash	Congruity or Disparity: teachers' assessment of the new Palestinian	TESOL Journal, 2010	**5,670**	**A 3**

	English language school curriculum			
Ahmad Q. Abed	Universal Grammar and Second Language Learners: the case of pro-drop parameter	MJAL, 2010	**4,294**	**A 4**
Afnan H. Fatani	Electronic Syllabus Design for Language and Computers: bridging the gap between two disciplines using *Moodle* as a learning management system (LMS)	The Asian ESP Journal, 2010	**7,962**	**A 5**
Mohammed H. Al-Fattah	Apology Strategies of Yemeni EFL University Students	MJAL, 2010	**6,720**	**A 6**
Abdel-Kareem Mohammed et al.	Translating Contracts between English and Arabic: towards a more pragmatic outcome	JJMLL, 2010	**7,151**	**A 7**
Mohammed Zaid	Effectiveness of Organized E-mail Exchanges and Online Reading-Writing in College Students' Literacy Development and their Attitudes towards English: a study from Saudi Arabia	Asian EFL Journal, 2011	**4,256**	**A 8**

Suleiman Al-Husseini	The Visible and Invisible Role of English foundation Programs: a search for communication opportunities within EFL contexts	Asian EFL Journal, 2006	**4,811**	**A 9**
Taher Rabassi	English-Only Conferences: what did a non-native speaker expert note?	English as An International Language Journal, 2009	**4,927**	**A 10**

Table (6): Articles written by Chinese researchers

Author(s)	Title	Source	NO. Of Words	Article NO.
Yu-Chih Sun	Voice Blog: an exploratory study of language learning	Language Learning and Technology, 2009	**5,220**	**C 1**
Nian-Shing Chen *et al*.	Effects of Short-Term Memory and Content Representation Type on Mobile Language Learning	Language Learning and technology, 2008	**7,050**	**C 2**
Dai Weidong	On a Streamline English Language Teaching System with Chinese Characteristics	ELT in China, 2001	**4,662**	**C 3**
Hu Wenzhong	A Matter of Balance – Reflections on China's Language Policy in	ELT in China, 2001	**5,780**	**C 4**

	Education			
Gao Yihong *et al*.	English Language Learning and Self-Identity Construction: three cases of college English majors	ELT in China, 2001	**6,739**	**C 5**
Qin Xiaoqing	Internal Structure of EFL Motivation at the Territory level in China	ELT in China, 2001	**5,720**	**C 6**
Wang Yu	A Study of Listening Strategies by non-English Majors in China	ELT in China, 2001	**4,335**	**C 7**
Liu Changqing	Schema Theory and its Application in Teaching EFL Reading	ELT in China, 2001	**5,979**	**C 8**
Zhang Linhua	Factors that Facilitate Successful Learners in their English Learning in Process: a case study of five successful students	ELT in China, 2001	**4,200**	**C 9**
Huang Aifang	A First Person Education: a review of the RICH method of foreign language instruction	ELT in China, 2001	**6,378**	**C 10**

Data Collection and Data Analysis:

Data for this study has been obtained mainly from the selected articles written by native and non-native linguists. The hedging expressions have been categorized into different types: lexical verbs, modal lexical verbs and adverbial modal

expressions. For analyzing the data- obtained, the researcher has used simple descriptive statistical analysis such as means, frequencies and percentages**.** The hedging expressions traced in this study are primarily similar to those of Hyland's but excluding many other forms in Hinkel and Skelton for statistically indicative considerations. It would be almost impossible to trace all forms of hedging items suggested by various theorists; besides, it would statistically mean nothing to incorporate all such items in this limited-scale sample of thirty articles written by different authors.

Procedures:

1. Reading extensively on hedges and hedging expressions in references and indexed journals to get good background knowledge of the topic, and accepted concepts related to it.
2. Spelling out the study problem and questions of the study.
3. Searching for articles or research reports on linguistics or applied linguistics which were written by English, Arab and Chinese linguists.
4. Selecting the thirty articles which constitute the corpus of the study, each of which consisting of 4000 words or more.

5. Carefully reading introductions and conclusions of the articles to identify the hedging expressions and classify them according to their frequencies and types.
6. Analyzing the data by using simple statistical procedures such as means, frequencies and percentages to reveal the types / taxonomy of hedges.
7. Interpreting the data and coming up with conclusions/findings.
8. Making/presenting suitable recommendations.

As previously indicated, this study focuses on two rhetorical sections of the selected articles, namely Introduction and Conclusion. Due to different rhetorical functions of each section of the articles, these two parts are considered to be among the main sections which contain hedging devices (Hyland 2000, Varttala 2001, Vassileva 2001), notwithstanding that the discussion part also involves use of hedges. In these two sections, writers mainly establish the significance of the study and make generalizations regarding the major findings. For the purpose of this study, all the footnotes, long quotations, and abstracts which appeared in the research articles were deleted from the data.

Choice of the articles in this discipline is based on certain criteria. The first criterion was related to the fact that whether or not the article included the

standard (Introduction, Method, Results, and Discussion) sections. Based on the premise that the use of hedges might be influenced with the passage of time, the articles were all limited to those published within the last ten years (2001-2011). Thus, this time limit constituted the second criterion for selecting the articles. Once the research articles were selected, they were analyzed in terms of hedging forms and functions. The number of words (4,000) per article was selected to ensure that the introduction and conclusion sections are representative enough of the possible hedging uses; this particular word count was also selected because it can be considered the minimum which enables a statistically significant indication to be drawn.

Data Analysis:

This study tries to identify and classify the linguistic devices which act as hedges. Another aim is to examine the functions of hedges and to see whether the incidence of hedging forms and functions varies across the three different groups of authors and the rhetorical sections of the Introduction and Conclusion. In order to meet these goals, epistemic expressions such as main verbs, adjectives, adverbs, nouns, and modal auxiliaries that show uncertainty and tentativeness

were identified. The lists of items expressing doubt and uncertainty provided by Hyland (2000) were used as a guideline.

The lexical verbs include two categories: “epistemic judgmental” verbs and “epistemic evidential” verbs. According to Hyland (1998: 120), epistemic judgmental verbs “reflect appraisals by the speaker of the factive status of events” and are subcategorized into “speculation” and “deduction”. Speculative verbs such as *indicate* and *suggest* show that the stated proposition is based on some conjecture. Deduction verbs like *estimate* and *calculate* show some “inferential reasoning or theoretical calculation” (p. 121). Epistemic evidential verbs are the main verbs which “refer to evidentiary justification, either based on the reports of others, the evidence of the writer’s sense, or the feasibility of matching evidence to goals” (p. 124). The subcategories of evidential verbs are quotative (e.g., *report*, *note*), sensory (e.g., *appear*, *seem*), and narrators (e.g., *attempt*, *seek*).

Tracing the hedging items took stock of the two sub-categories of content-oriented hedges, namely accuracy-oriented and writer-oriented hedges, as two functions of hedges. According to Hyland (1998), the motivation for using these two hedges is the writer’s interest in “stating propositional accord with reality” or

"seeking self protection from the negative consequences of poor judgment". He further explains that the accuracy-oriented hedges refer to the "writer's desire to express proposition with greater precision" (p. 162). Writer-oriented hedges, according to him, are related to the degree of commitment that the writers wish to invest for their knowledge claims. In addition to the main category of content-oriented hedges, Hyland has also provided another main category, namely reader-oriented hedges. These mainly deal with the interpersonal purposes requiring writers to attend to the "social relationship between writer and reader" (p. 177). According to Hyland, they also represent "conformity to research community expectations concerning deference due to colleagues in presenting information" (p. 178).

The frequency of hedging forms was calculated and distributed based on their categories. The unit for calculation was the word, for reasons pertaining to practicality. The three main categories of "lexical verbs, modal auxiliaries and adverbial modal expression" were used to show the distribution of hedging forms across the three groups of writers. Lexical verbs were further divided into "judgmental and evidential" verbs. The following table illustrates the method used to determine the frequency of various types of hedging across the three

categories of writers. It follows the 1994/95 Hyland's model that emphasizes modality as being the element of paramount importance for studying the phenomenon of hedging in academic writings or research articles (RAs).

Table (7): Frequency of hedging expressions across the three groups of writers

Form of Hedge	**Native (English)** Writers F /introduction and conclusion sections	**Arabic** Writers F / introduction and conclusion sections	**Chinese** Writers F / introduction and conclusion sections
Lexical verbs (judgmental and evidential epistemic: seem, think, tend, argue, propose, indicate, appear, assume, suggest, suppose, suspect, hope, wonder, claim, indicate, tend to, conclude, believe)			
Modal Auxiliary verbs (may, might, can, could, will, would, shall, should)			
Adverbial modal expressions (actually, apparently, clearly, eventually, may be, obviously, perhaps, probably, possibly, likely, basically, finally, presumably and indeed)			
Total			

Key: F = Frequency

According to Hyland (1998: 120), epistemic judgmental verbs "reflect appraisals by the speaker of the factive status of events" and are subcategorized into "speculation" and "deduction". Speculative verbs such as *indicate* and *suggest* show that the stated proposition is based on some conjecture. Deduction verbs like *estimate* and *calculate* show some "inferential reasoning or theoretical

calculation" (p. 121). Epistemic evidential verbs are the main verbs which "refer to evidentiary justification, either based on the reports of others, the evidence of the writer's sense, or the feasibility of matching evidence to goals" (p. 124). The subcategories of evidential verbs are quotative (e.g., *report*, *note*), sensory (e.g., *appear*, *seem*), and narrators (e.g., *attempt*, *seek*).

The procedure of investigation consisted of hedge identification, frequency calculation and interpretation of results. The procedure blended automatic count and a fairly large amount of manual work to literally count the number of times certain types of hedges were used in order to come up with their frequency.

Chapter Four

Analysis and Findings of the Study

Key features of the Articles:

A major characteristic of academic discourse in research articles (RAs) is the presence of elements/ factors whose purpose is to modulate assertions or emphasize statements. Thus, RAs demonstrate an internal feature that pertains to a form of interaction that allows researchers/ writers to somehow prompt readers to go for a certain desired direction when it comes to interpreting statements – an interpretation that is kind of close to what the author desires or favors. All such endeavors are directed to reach the eventual outcome or objective of the communicative process (in writing): make the audience come to the results or findings of the data analysis and process the author's conducts. Hence, the need to take stock of Hyland's taxonomy (referred to in Chapter Three of this study) is suitable as it allows both a free tracing of hedges without going

into the details of their lexico-grammatical categories save for the main classes of lexical verbs, modals and adverbial modal expressions.

The following tables show the disaggregated data of the occurrence and frequency of the three main categories of hedging devices in this study – namely the lexical verbs, modal lexical verbs and adverbial modal expressions. Each table represents the details of such occurrence and frequency across the three groups of authors covered in this research. Articles are coded as follows: codes involving "N" refers to articles written by native speakers of English; articles showing "A" and "C" refer to articles written by Arabic and Chinese speakers of English, respectively. Key to the codes can be found in the three tables that list all the articles above broken by category of authors.

I. Articles written by English native researchers:

Table (8): Frequency and Percentage of hedging expressions in article No. One

Article No.	N 1					
Introduction	827 words					
Conclusion	606 words					
Total, intro & conclusion	1,433 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	5	0.6	3	0.49	8	0.55
Modal lexical verbs	2	0.24	8	1.32	10	0.69
Adverbial modal expressions	17	2.05	16	2.64	33	2.30
Grand total (all hedges)	24	1.67	27	4.45	51	3.54

Table (9): Frequency and Percentage of hedging expressions in article No.Two

Article No.	N 2					
Introduction	728 words					
Conclusion	372 words					
Total, intro & conclusion	1,100 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	7	0.96	1	0.26	8	0.72
Modal lexical verbs	8	1.09	16	4.30	24	2.18
Adverbial modal expressions	19	2.60	7	1.88	26	2.36
Grand total (all hedges)	34	4.67	24	6.45	58	5.26

Table (10):Frequency and Percentage of hedging expressions in article No.Three

Article No.	N 3					
Introduction	306 words					
Conclusion	151 words					
Total, intro & conclusion	457 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.65	0	0	2	0.43
Modal lexical verbs	1	0.32	6	3.97	7	1.53
Adverbial modal expressions	4	1.30	3	1.98	7	1.53
Grand total (all hedges)	7	2.28	9	5.96	16	3.49

Table (11): Frequency and Percentage of hedging expressions in article No. Four

Article No.	N 4					
Introduction	149 words					
Conclusion	370 words					
Total, intro & conclusion	519 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	1.34	3	0.81	5	0.96

Modal lexical verbs	1	o.67	2	0.54	3	0.57
Adverbial modal expressions	5	3.35	16	4.32	21	4.04
Grand total (all hedges)	8	5.36	21	5.67	29	5.57

Table (12): Frequency and Percentage of hedging expressions in article No. Five

Article No.	N 5					
Introduction	414 words					
Conclusion	635 words					
Total, intro & conclusion	1,049 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	0	0	4	0.62	4	0.38
Modal lexical verbs	5	1.2	17	2.67	22	2.09
Adverbial modal expressions	2	0.48	10	1.57	12	1.14
Grand total (all hedges)	7	1.69	31	4.88	38	**3.61**

Table (13): Frequency and Percentage of hedging expressions in article No.Six

Article No.	N 6					
Introduction	739 words					
Conclusion	1,164 words					
Total, intro & conclusion	1,903 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	7	0.94	3	0.25	10	0.52
Modal lexical verbs	22	2.97	30	2.57	52	2.73
Adverbial modal expressions	17	2.30	29	2.49	46	2.41
Grand total (all hedges)	46	6.22	62	5.32	108	**5.66**

Table (14):Frequency and Percentage of hedging expressions in article No.Seven

Article No.	N 7	
Introduction	216 words	
Conclusion	177 words	
Total, intro & conclusion	393 words	

Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	1	0.46	2	1.12	3	0.76
Modal lexical verbs	2	0.92	0	0	2	0.50
Adverbial modal expressions	5	2.31	4	2.25	9	2.29
Grand total (all hedges)	8	3.70	6	3.38	14	**3.55**

Table (15): Frequency and Percentage of hedging expressions in article No. Eight

Article No.	N 8					
Introduction	836 words					
Conclusion	786 words					
Total, intro & conclusion	1,628 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	0	0	1	0.12	1	0.06
Modal lexical verbs	12	1.43	19	2.41	31	1.90
Adverbial modal expressions	24	2.87	21	2.67	45	2.76
Grand total (all hedges)	36	4.30	41	5.21	77	**4.72**

Table (16): Frequency and Percentage of hedging expressions in article No. Nine

Article No.	N 9					
Introduction	630 words					
Conclusion	330 words					
Total, intro & conclusion	960 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	3	0.47	3	0.90	6	0.62
Modal lexical verbs	6	0.95	8	2.42	14	1.45
Adverbial modal expressions	11	1.74	8	2.42	19	1.97
Grand total (all hedges)	20	3.17	19	5.75	39	**4.04**

Table (17): Frequency and Percentage of hedging expressions in article No. Ten

Article No.	N 10	
Introduction	385 words	
Conclusion	367 words	
Total, intro & conclusion	752 words	

Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	8	2.07	5	1.36	13	1.72
Modal lexical verbs	6	1.55	11	2.99	17	2.26
Adverbial modal expressions	8	2.07	7	1.90	15	1.99
Grand total (all hedges)	22	5.71	23	6.26	45	5.97

In light of the results shown in the ten previous tables, the aggregate occurrence and frequency of the hedging devices in the articles written by native speakers of English are shown in the table below:

Table (18): Total Frequency and Percentage of the hedging expressions in articles written by native researchers

Introductions	5,230 words					
Conclusions	4,958 words					
Grand Total, intros & conclusions	10,188 words					
Hedging devices Grand Total	Intros		Conclusions		Total (Intros + Conclusions)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs (grand total)	35	0.66	25	0.50	60	0.58
Modal lexical verbs (grand total)	74	1.41	117	2.35	191	1.87
Adverbial modal expressions (grand total)	112	2.14	121	2.44	233	2.28
Grand total (all hedges) to intros + conclusions	221	4.22	263	5.30	484	4.73 %

II. Articles written by Arab researchers:

Table (19): Frequency and Percentage of hedging expressions in article No. One

Article No.	A 1	
Introduction	487 words	
Conclusion	563 words	
Total, intro & conclusion	1,050 words	

Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	0	0	0	0	0	0
Modal lexical verbs	6	1.23	27	4.79	33	3.14
Adverbial modal expressions	4	0.82	2	0.35	6	0.57
Grand total (all hedges)	10	2.05	29	5.15	39	3.71

Table (20): Frequency and Percentage of hedging expressions in article No. Two

Article No.	A 2					
Introduction	434 words					
Conclusion	279 words					
Total, intro & conclusion	713 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	7	1.61	3	1.07	10	1.40
Modal lexical verbs	4	0.92	8	2.86	12	1.68
Adverbial modal expressions	8	1.84	4	1.43	12	1.68
Grand total (all hedges)	19	4.37	15	5.37	34	4.76

Table (21): Frequency and Percentage of hedging expressions in article No. Three

Article No.	A 3					
Introduction	200 words					
Conclusion	680 words					
Total, intro & conclusion	880 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	1.0	4	0.58	6	0.68
Modal lexical verbs	1	0.5	13	1.91	14	1.60
Adverbial modal expressions	4	2.0	9	1.32	13	1.47
Grand total (all hedges)	7	3.5	26	3.82	33	3.75

Table (22): Frequency and Percentage of hedging expressions in article No. Four

Article No.	A 4	

Introduction	390 words					
Conclusion	198 words					
Total, intro & conclusion	588 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	4	1.02	0	0	4	0.68
Modal lexical verbs	2	0.51	4	2.02	6	1.02
Adverbial modal expressions	6	1.53	4	2.02	10	1.70
Grand total (all hedges)	12	3.07	8	4.04	20	**3.40**

Table (23): Frequency and Percentage of hedging expressions in article No. Five

Article No.	A 5					
Introduction	611 words					
Conclusion	547 words					
Total, intro & conclusion	1,158 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.32	5	0.91	7	0.60
Modal lexical verbs	3	0.5	12	2.19	15	1.29
Adverbial modal expressions	8	1.3	10	1.82	18	1.55
Grand total (all hedges)	13	2.12	27	4.93	40	**3.44**

Table (24): Frequency and Percentage of hedging expressions in article No. Six

Article No.	A 6					
Introduction	491 words					
Conclusion	503 words					
Total, intro & conclusion	994 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.4	9	1.78	11	1.10
Modal lexical verbs	1	0.2	6	1.19	7	0.70
Adverbial modal expressions	8	1.62	6	1.19	14	1.40
Grand total (all hedges)	11	2.24	21	4.17	32	**3.20**

Table (25): Frequency and Percentage of hedging expressions in article No. Seven

Article No.	A 7	
Introduction	321 words	
Conclusion	818 words	

Total, intro & conclusion	1,139 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	1	0.31	1	0.12	2	0.17
Modal lexical verbs	4	1.24	12	1.46	16	1.40
Adverbial modal expressions	9	2.8	25	3.05	34	2.98
Grand total (all hedges)	14	4.36	38	4.64	52	**4.55**

Table (26): Frequency and Percentage of hedging expressions in article No. Eight

Article No.	A 8					
Introduction	1,311 words					
Conclusion	272 words					
Total, intro & conclusion	1,583 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	12	0.91	0	0	12	0.75
Modal lexical verbs	11	0.83	4	1.47	15	0.94
Adverbial modal expressions	18	1.37	3	1.1	21	1.32
Grand total (all hedges)	41	3.12	7	2.57	48	**3.01**

Table (27): Frequency and Percentage of hedging expressions in article No. Nine

Article No.	A 9					
Introduction	738 words					
Conclusion	235 words					
Total, intro & conclusion	973 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	1	0.13	1	0.42	2	0.20
Modal lexical verbs	5	0.67	7	2.97	12	1.23
Adverbial modal expressions	13	1.76	1	0.42	14	1.43
Grand total (all hedges)	19	2.57	9	3.82	28	**2.86**

Table (28): Frequency and Percentage of hedging expressions in article No. Ten

Article No.	A 10	
Introduction	377 words	
Conclusion	455 words	

Total, intro & conclusion	832 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	3	0.8	3	0.65	5	0.60
Modal lexical verbs	2	0.53	14	3.07	16	1.92
Adverbial modal expressions	13	3.44	5	1.09	18	2.16
Grand total (all hedges)	18	4.77	22	4.83	40	**4.68**

Table (29): Total frequency and Percentage of the hedging expressions in articles written by Arab researchers

Introductions	5,360 words					
Conclusions	4,550 words					
Grand Total, intros & conclusions	9,910 words					
Hedging devices Grand Total	Intros		Conclusions		Total (Intros + Conclusions)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs (grand total)	38	0.70	26	0.57	64	0.64
Modal lexical verbs (grand total)	39	0.72	105	2.3	144	1.45
Adverbial modal expressions (grand total)	91	1.69	67	1.47	158	1.59
Grand total (all hedges) to intros + conclusions	168	3.13	198	4.35	366	**3.68 %**

III. Articles written by Chinese researchers:

Table (30): Frequency and Percentage of hedging expressions in article No. One

Article No.	C 1					
Introduction	786 words					
Conclusion	523 words					
Total, intro & conclusion	1,309 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.25	1	0.19	3	0.22
Modal lexical verbs	4	0.50	24	4.58	28	2.13

Adverbial modal expressions	12	1.52	17	3.25	29	2.21
Grand total (all hedges)	18	2.29	42	8.03	60	4.56

Table (31): Frequency and Percentage of hedging expressions in article No. Two

Article No.	C 2					
Introduction	1,225 words					
Conclusion	382 words					
Total, intro & conclusion	1,607 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	5	0.40	3	0.78	8	0.49
Modal lexical verbs	12	0.98	10	2.61	22	1.36
Adverbial modal expressions	14	1.14	5	1.30	19	1.18
Grand total (all hedges)	31	2.53	18	4.71	49	3.03

Table (32):Frequency and Percentage of hedging expressions in article No.Three

Article No.	C 3					
Introduction	336 words					
Conclusion	167 words					
Total, intro & conclusion	503 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.60	2	1.19	4	0.80
Modal lexical verbs	1	0.29	5	2.30	6	1.19
Adverbial modal expressions	6	1.78	6	3.59	12	2.38
Grand total (all hedges)	9	2.67	13	7.78	22	4.37

Table (33): Frequency and Percentage of hedging expressions in article No. Four

Article No.	C 4	
Introduction	149 words	

Conclusion	505 words					
Total, intro & conclusion	654 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	0	0	5	1.0	5	0.76
Modal lexical verbs	1	0.67	11	2.17	12	1.83
Adverbial modal expressions	1	0.67	6	1.18	7	1.07
Grand total (all hedges)	2	1.34	22	4.35	24	**3.66**

Table (34): Frequency and Percentage of hedging expressions in article No. Five

Article No.	C 5					
Introduction	453 words					
Conclusion	531 words					
Total, intro & conclusion	984 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	5	1.1	2	0.37	7	0.71
Modal lexical verbs	1	0.22	11	2.07	12	1.21
Adverbial modal expressions	9	1.98	11	2.07	20	2.03
Grand total (all hedges)	15	3.31	24	4.51	39	**3.95**

Table (35): Frequency and Percentage of hedging expressions in article No. Six

Article No.	C 6					
Introduction	493 words					
Conclusion	456 words					
Total, intro & conclusion	949 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	3	0.6	4	0.87	7	0.73
Modal lexical verbs	0	0	4	0.87	4	0.42
Adverbial modal expressions	9	1.82	13	2.85	22	2.31
Grand total (all hedges)	12	2.43	21	4.6	33	**3.46**

Table (36):Frequency and Percentage of hedging expressions in article No.Seven

Article No.	C 7	
Introduction	274 words	

Conclusion	261 words					
Total, intro & conclusion	535 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	0	0	2	0.76	2	0.37
Modal lexical verbs	2	0.72	5	1.91	7	1.31
Adverbial modal expressions	2	0.72	4	1.53	6	1.12
Grand total (all hedges)	4	1.46	11	4.21	15	**2.80**

Table (37): Frequency and Percentage of hedging expressions in article No. Eight

Article No.	C 8					
Introduction	767 words					
Conclusion	312 words					
Total, intro & conclusion	1,079 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	2	0.26	2	0.64	4	0.37
Modal lexical verbs	5	0.65	4	1.28	9	0.83
Adverbial modal expressions	14	1.82	4	1.28	18	1.66
Grand total (all hedges)	21	2.73	10	3.2	31	**2.86**

Table (38): Frequency and Percentage of hedging expressions in article No. Nine

Article No.	C 9					
Introduction	343 words					
Conclusion	646 words					
Total, intro & conclusion	989 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	3	0.87	2	0.3	5	0.50
Modal lexical verbs	8	2.33	11	1.7	19	1.92
Adverbial modal expressions	1	0.29	18	2.78	19	1.92
Grand total (all hedges)	12	3.5	31	4.8	43	**4.34**

Table (39): Frequency and Percentage of hedging expressions in article No. Ten

Article No.	C 10	
Introduction	172 words	

Conclusion	536 words					
Total, intro & conclusion	708 words					
Hedging devices	Intro		Conclusion		Total (Intro + Conclusion)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs	3	1.74	8	1.49	11	1.55
Modal lexical verbs	1	0.58	6	1.11	7	0.98
Adverbial modal expressions	3	1.74	5	0.93	8	1.13
Grand total (all hedges)	7	4.06	19	3.54	26	**3.66**

Table (40): Total frequency and Percentage of the hedging expressions in articles written by Chinese researchers

Introductions	4,998 words					
Conclusions	4,319 words					
Grand Total, intros & conclusions	9,317 words					
Hedging devices Grand Total	Intros		Conclusions		Total (Intros + Conclusions)	
	Raw #	%	Raw #	%	Raw #	%
Lexical verbs (grand total)	25	0.50	31	0.71	56	0.61
Modal lexical verbs (grand total)	35	0.7	91	2.11	126	1.35
Adverbial modal expressions (grand total)	71	1.42	89	2.06	160	1.71
Grand total (all hedges) to intros + conclusions	131	2.62	211	4.88	342	**3.67 %**

In order to provide further details, the following three tables (41, 42 and 43) show the details of the frequency and occurrence of the various hedging devices across each of the three groups of writers/ linguists included in this study.

Table (41): Frequency and Percentage occurrence of key modal and lexical verbs and adverbial modal expressions across the ten articles written by native speakers

Hedging device	Introduction		Conclusion		Total (Intro + Conclusion)	
	Raw #	F %	Raw #	F %	Raw #	F %

Modal Verbs						
Will	11	0.3	5	0.1	16	0.2
Would	5	0.1	13	0.3	18	0.2
May	19	**0.4**	34	**0.7**	**53**	**0.6**
Might	2	0.1	10	0.2	12	0.2
Shall	2	0.1	0	0.0	2	0.1
Should	7	0.2	22	**0.5**	**29**	0.3
Can	9	0.2	16	0.4	25	0.3
Could	6	0.2	3	0.1	9	0.1
Hedging Device	**Introduction**		**Conclusion**		**Total**	
Lexical Verbs	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Seem	3	0.1	4	0.1	7	0.1
Think	0	0	0	0	0	0
Argue	3	0.1	4	0.1	7	0.1
Propose	1	0.1	0	0	1	0.1
Suggest	10	0.2	7	0.2	17	0.2
Claim	2	0.1	2	0.1	4	0.1
Believe	2	0.1	0	0	2	0.1
Seek	2	0.1	0	0	2	0.1
Appear	0	0	1	0.1	1	0.1
Assume	0	0	0	0	0	0
Indicate	0	0	1	0.1	1	0.1
Hope	1	0.1	1	0.1	2	0.1
Wonder	1	0.1	0	0	1	0.1
Tend	3	0.1	1	0.1	4	0.1
Conclude	1	0.1	3	0.2	4	0.1
Suppose	1	0.1	0	0	1	0.1
Hedging device	**Introduction**		**Conclusion**		**Total**	
Adverbial expressions	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Generally	2	0.1	3	0.1	5	0.1
Only	7	0.2	7	0.2	**14**	0.2
Actually	1	0.1	1	0.1	2	0.1
Clearly	2	0.1	1	0.1	3	0.1
Obviously	1	0.1	0	0	1	0.1
Probably	3	0.1	0	0	3	0.1
Likely	5	0.1	14	0.3	**19**	0.2
necessarily	2	0.1	1	0.1	3	0.1
Apparently	0	0	0	0	0	0
Presumably	0	0	0	0	0	0
Indeed	1	0.1	4	0.2	5	0.1
Specially	4	0.2	1	0.1	5	0.1

Particularly	2	0.1	5	0.1	7	0.1
Relatively	3	0.1	3	0.1	6	0.1

From the table above, it can be clearly seen that the distribution of the various hedging devices is spread across a wide range so that it can hardly be statistically indicative. However, hedges like "may" and "should" stand out among other devices in terms of their occurrence – "may" was used 53 times overall whereas "should" was used 25 times across the introduction and conclusion sections. As for the adverbial modal expressions, "only" and "likely" were used 14 and 19 times respectively across both sections.

Table (42): Frequency and Percentage occurrence of key modal and lexical verbs and adverbial modal expressions across the ten articles written by Arab speakers

Hedging device	**Introduction**		**Conclusion**		**Total (Intro + Conclusion)**	
	Raw #	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Modal Verbs						
Will	9	0.2	13	0.3	22	0.3
Would	1	0.1	5	0.1	6	0.1
May	3	0.1	8	**0.2**	**11**	**0.2**
Might	3	0.1	6	0.2	9	0.1
Shall	0	0	0	0	0	0
Should	5	0.1	**53**	**1.3**	**58**	**0.7**
Can	10	0.2	**23**	**0.6**	31	**0.4**
Could	2	0.1	6	0.2	8	0.1
Hedging Device	**Introduction**		**Conclusion**		**Total**	
Lexical Verbs	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**

Seem	6	0.2	4	0.1	10	0.1
Think	2	0.1	1	0.1	3	0.1
Argue	2	0.1	0	0	2	0.1
Propose	0	0	2	0.1	2	0.1
Suggest	3	0.1	2	0.1	5	0.1
Claim	1	0.1	2	0.1	3	0.1
Believe	3	0.1	1	0.1	4	0.1
Seek	3	0.1	0	0	3	0.1
Appear	0	0	0	0	0	0
Assume	1	0.1	1	0.1	2	0.1
Indicate	3	0.1	3	0.1	6	0.1
Hope	0	0	3	0.1	3	0.1
Wonder	0	0	0	0	0	0
Tend	1	0.1	0	0	1	0.1
Conclude	0	0	0	0	0	0
Suppose	1	0.1	0	0	1	0.1
Hedging device	**Introduction**		**Conclusion**		**Total**	
Adverbial expressions	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Generally	2	0.1	0	0	2	0.1
Only	6	0.2	8	0.2	**14**	0.2
Actually	0	0	0	0	0	0
Clearly	0	0	0	0	0	0
Obviously	1	0.1	0	0	1	0.1
Probably	1	0.1	0	0	1	0.1
Likely	0	0	0	0	**0**	0
necessarily	1	0.1	4	0.1	5	0.1
Apparently	0	0	0	0	0	0
Presumably	0	0	0	0	0	0
Indeed	0	0	0	0	0	0
Specially	4	0.1	6	0.2	10	0.1
Particularly	3	0.1	5	0.1	8	0.2
Relatively	1	0.1	2	0.1	3	0.1

From the table above, it can be clearly seen that the distribution of the various hedging devices in articles written by Arab non-native speakers of English is spread across a wide range so that it can hardly be statistically indicative.

However, hedges like "should" and "can" stand out among other devices in terms of their occurrence – "should" occurred 58 times overall whereas "can" was used 31 times across the introduction and conclusion sections. Notably, the modal verb "should" was used 53 times in the conclusion sections, with a frequency of 1.3% -- the highest ever among the three groups of writers. Contrastively, "should" was used only 5 times in the introduction sections vis-à-vis 53 in the conclusions -- indicating thus that Arab writers tend to stress their recommendations in the final part of their article rather than start strongly with a rigorous argument at the beginning. As for the adverbial modal expressions, "only" stands out among the other expressions with an occurrence of 14 times and a frequency of 0.2% on aggregate.

Table (43): Frequency and Percentage occurrence of key modal and lexical verbs and adverbial modal expressions across the ten articles written by Chinese speakers

Hedging device	Introduction		Conclusion		Total (Intro + Conclusion)	
	Raw #	F %	Raw #	F %	Raw #	F %
Modal Verbs						
Will	9	0.2	18	0.5	27	0.3
Would	4	0.1	6	0.2	10	0.1
May	2	0.1	7	0.2	9	0.1
Might	2	0.1	2	0.1	4	0.1
Shall	0	0	0	0	0	0
Should	3	0.1	**23**	**0.6**	26	0.3
Can	15	0.3	**24**	**0.6**	39	**0.5**
Could	1	0.1	9	0.2	10	0.1

Hedging Device	Introduction		Conclusion		Total	
Lexical Verbs	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Seem	3	0.1	5	0.2	8	0.1
Think	1	0.1	1	0.1	2	0.1
Argue	1	0.1	0	0	1	0.1
Propose	0	0	0	0	0	0
Suggest	1	0.1	8	0.2	9	0.1
Claim	0	0	1	0.1	1	0.1
Believe	0	0	0	0	0	0
Seek	0	0	0	0	0	0
Appear	0	0	0	0	0	0
Assume	2	0.1	6	0.2	8	0.1
Indicate	3	0.1	1	0.1	4	0.1
Hope	1	0.1	0	0	1	0.1
Wonder	0	0	0	0	0	0
Tend	2	0.1	1	0.1	3	0.1
Conclude	0	0	0	0	0	0
Suppose	0	0	0	0	0	0
Hedging device	**Introduction**		**Conclusion**		**Total**	
Adverbial expressions	**Raw #**	**F %**	**Raw #**	**F %**	**Raw #**	**F %**
Generally	1	0.1	3	0.1	4	0.1
Only	6	0.2	5	0.2	**11**	0.2
Actually	1	0.1	0	0	1	0.1
Clearly	1	0.1	1	0.1	2	0.1
Obviously	2	0.1	0	0	2	0.1
Probably	1	0.1	0	0	1	0.1
Likely	0	0	2	0.1	**2**	0.1
necessarily	0	0	0	0	0	0
Apparently	0	0	1	0.1	1	0.1
Presumably	0	0	0	0	0	0
Indeed	3	0.1	0	0	3	0.1
Specially	3	0.1	1	0.1	4	0.1
Particularly	2	0.1	0	0	2	0.1
Relatively	0	0	0	0	0	0

Table (43) clearly shows that the distribution of the various hedging devices is spread across a wide range so that it can hardly be statistically indicative.

However, hedges like "should" and "can" stand out among other devices in terms of their occurrence – "should" was used 23 times overall whereas "can" was used 24 times across the introduction and conclusion sections with an overall frequency of 0.5% for the latter. Such results may reflect a kind or reluctance on the part of the authors to stress or negate a certain point. The distribution of the lexical verbs seems to be too fuzzy to be statistically indicative. The same also applies to the adverbial modal expressions which seem to be of minimal interest for this group of writers when it comes to hedging in English.

The table (44) below, shows the details the frequency and percentage occurrence of various hedging expressions across the three groups of writers of the study:

Table (44): Frequency and Percentage of hedging expressions in the whole corpus:

Hedging Expressions	Natives		Arabic		Chinese	
	Frequency	%	Frequency	%	Frequency	%
Modal Verbs						
Will	16	0.2	22	0.3	27	0.3
Would	18	0.2	6	0.1	10	0.1
May	**53**	**0.6**	**11**	**0.2**	9	0.1
Might	12	0.2	9	0.1	4	0.1
Shall	2	0.1	0	0	0	0
Should	**29**	0.3	**58**	**0.7**	26	0.3
Can	25	0.3	31	**0.4**	39	**0.5**
Could	9	0.1	8	0.1	10	0.1

Lexical Verbs						
Seem	7	0.1	10	0.1	8	0.1
Think	0	0	3	0.1	2	0.1
Argue	7	0.1	2	0.1	1	0.1
Propose	1	0.1	2	0.1	0	0
Suggest	17	0.2	5	0.1	9	0.1
Claim	4	0.1	3	0.1	1	0.1
Believe	2	0.1	4	0.1	0	0
Seek	2	0.1	3	0.1	0	0
Appear	1	0.1	0	0	0	0
Assume	0	0	2	0.1	8	0.1
Indicate	1	0.1	6	0.1	4	0.1
Hope	2	0.1	3	0.1	1	0.1
Wonder	1	0.1	0	0	0	0
Tend	4	0.1	1	0.1	3	0.1
Conclude	4	0.1	0	0	0	0
Suppose	1	0.1	1	0.1	0	0
Adverbial expressions						
Generally	5	0.1	2	0.1	4	0.1
Only	**14**	0.2	**14**	0.2	**11**	0.2
Actually	2	0.1	0	0	1	0.1
Clearly	3	0.1	0	0	2	0.1
Obviously	1	0.1	1	0.1	2	0.1
Probably	3	0.1	1	0.1	1	0.1
Likely	**19**	0.2	**0**	0	**2**	0.1
necessarily	3	0.1	5	0.1	0	0
Apparently	0	0	0	0	1	0.1
Presumably	0	0	0	0	0	0
Indeed	5	0.1	0	0	3	0.1
Specially	5	0.1	10	0.1	4	0.1
Particularly	7	0.1	8	0.2	2	0.1
Relatively	6	0.1	3	0.1	0	0

As a conclusion, Table (45) shows of the details, the aggregated Frequency, and Percentage of hedging expressions by the major three groups of researchers:

Table (45): Aggregated hedging Percentage data by the major three groups of writers

Hedging Expressions	**Native (English)** Writers introduction and conclusion sections	**Arab** Writers introduction and conclusion sections	**Chinese** Writers introduction and conclusion sections
Lexical verbs (judgmental and evidential epistemic: seem, think, tend, argue, propose, indicate, appear, assume, suggest, suppose, suspect, hope, wonder, claim, indicate, conclude, believe)	**0.58%**	**0.64 %**	**0.60%**
Modal Auxiliary verbs (may, might, can, could, will, would, shall, should)	**1.87%**	**1.45 %**	**1.35 %**
Adverbial modal expressions (actually, apparently, clearly, eventually, may be, obviously, perhaps, probably, possibly, likely, basically, finally, presumably and indeed)	**2.28%**	**1.59 %**	**1.71 %**
Grand Total	**4.73 %**	**3.68 %**	**3.66 %**

Chapter Five

Discussion and Conclusions

As shown in Table (45) in the previous chapter, the amount of hedging expressions used in articles written by the native speakers is greater by one percentile point than that used by their Arab or Chinese counterparts included in the sample population of this study. In light of Hyland's proposition that non-native speakers of English suffer from a "rhetorical gap" when it comes to the use of hedging expressions – and that they therefore tend to borrow such expressions from their mother languages, this one percentile point difference in favor of native speakers could raise many questions about such a claim.

The overall frequency of hedging items among Arab and Chinese speakers of English is almost identical (3.68 and 3.66% respectively). Such a finding can have a two-fold interpretation. First, Hyland's above-mentioned suggestion sounds plausible, for both non-native groups of writers (Arab and Chinese) might be suffering from the same "rhetorical gap" Hyland refers to in terms of hedging

items. Second, this finding can be flipped over and read as a point against Hyland's claim; the latter groups of writers might share some inherent features in their writing styles that are somehow conveyed or passed down from their mother languages.

However, the situation involves a dilemma as well. Should one assume that Hyland's proposition applies to the results of hedging frequency in the articles this study covers; a problem remains to be solved. If non-native speakers/ writers of English really find difficulty to grapple with the use of hedging items in English, they will resort to under-employment of hedges in English to account for the lost and desired impact on their audience. After all, hedging is but another means of modifying, toning down or overstating a point.

Hedging and Modality across the three groups of writers:

Modal auxiliary verbs are the most frequent/traditional form of hedges in English; in essence, they are rhetorical strategies writers use to tone down the force/ impact of their argument. With reference to the three groups of writers covered in this study, it seems that the Chinese were less prone to hedging using

modal auxiliary with 1.35% while the English native speakers ranked first in terms of hedging using modals (1.87%).

Hedging in articles written by English native speakers:

In light of the aggregated data in Table 18, hedges (lexical and modal verbs as well as adverbial modal expressions) made (4.73 %) of the introduction and conclusion sections in articles written by native speakers. They used 60 lexical verbs across these sections or a minimal percentage of (0.58%) whereas modal verbs were more than triple the number and percentage (191 modals and 1.87% of the introduction and conclusion sections). However, the native speakers seem to prefer the adverbial modal expressions more in their introduction and conclusion sections; they used 233 such expressions at a percentage of 2.28%, which is more than quadruple the percentage of the lexical verbs. When further broken by section, the aggregated data for articles written by native speakers showed that the use of hedging expressions was slightly higher in conclusions than in introductions (5.33% compared to 4.22%). Such one percentile point difference could be attributed to the fact that writers tend to stress their findings in conclusions to make them marketable for their audience and should in a way resort to more hedging for persuasion considerations. All in all, the grand total

of all hedges used in introduction and conclusion sections by native speakers reached 484 items (out of a total of 10,188 words), or 4.73% per 1,000 words (Since the total sum of word count in both sections of the ten articles is 10,188 words).

The modal booster "will" was mentioned 10 times in the introduction sections in all articles written by native speakers – which is quite a very low frequency when compared to other hedging items especially the adverbial modal expressions. As for the conclusion sections, the modal verb "will" was used 4 times only; although "will" is often used to postulate an argument, it seems that native speakers/ linguists have opted for the use of lexical verbs and adverbial expressions as their key vehicle for hedging.

Article coded (N 6) and entitled "The Effects of Context on Incidental Vocabulary Learning" by Stuart Webb stands out in terms of its use of modals in hedging the introduction and conclusion sections. Webb uses the modal verb "may" 14 times in the introduction compared to 18 in the conclusion – with a frequency of 1.9% in the introduction, and 1.5% in the conclusion (Table 13).

Hedging in articles written by Arab speakers:

According to Table 29 in Chapter Four, hedges and hedging expressions accounted for (3.68%) of the grand total of introduction and conclusion sections in articles written by Arab linguists (or Arab speakers of English). With a total word count of 9,910 words, the introduction and conclusion sections (combined) employed 366 hedging items – which is less by more than one hundred items than what can be found in articles by native speakers. Like the native speakers involved in the sample population of this study, Arab writers – when writing in English, seem to cherish conclusions more; again the difference between total hedges used in conclusions is more by one percentile point than items in the introductions (4.35% compared to 3.13%). Arab writers also seem to prefer hedging using adverbial modal expressions (1.59%) on aggregate, but they somehow preferred hedging more with such expressions in introductions rather than conclusions – which is not the case with the two other groups of English native and Chinese writers. Such a tendency might be attributed to the fact that,

by nature, Arab speakers tend to hedge more when introducing utterances to the extent that they sometimes give the impression that they are "beating around the bush". In other words, mother language interference might explain such a limited anomaly in the aggregated data.

Hence, this difference might signal a potential cultural difference in the way writers from different backgrounds hedge in English. A case in point would be the figures shown in the Master Table (45), which compiles all aggregate data across the three groups of writers covered in this study; Arabs, followed by Chinese writers, tend to hedge more than native speakers (0.64%, 0.60% and 0.58% respectively) using lexical verbs like seem, think, suggest and believe. The articles written by Chinese authors, however, show a higher frequency of adverbial modal expressions used as hedges in both introductions and conclusions when compared to their Arab counterparts (1.71%) or a 0.12 percentile point difference in favor of the former. Yet both groups lag by half a percentile point or more behind the native speakers who hedge using such expressions by 2.28% of their introductions and conclusions.

Interestingly enough though, articles written by Arabic speakers ranked last in terms of the raw numbers and frequency of the grand total of hedging

expressions used in the conclusion sections; native speakers ranked first (263 and 5.30%), Chinese writers came second with (211 and 4.88%) and Arabic speakers came last with (198 and 4.35%) – although they ranked second in number and percentage when grand total of hedges in introductions and conclusions are included. These percentile figures could perhaps corroborate the above-mentioned claim that Arabs tend to focus more on introductions rather than on conclusions.

On disaggregated level, one notable exception to this tendency among articles written by Arab authors is an article by Al-Jarf (2006) "Large Student Enrollments in EFL Programs: Challenges and Consequences" (Table 19). With an overall frequency of 3.71%, Al-Jarf's conclusion involves use of 27 modal verbs in her conclusion at a frequency of 4.79% -- a ratio that is a lot higher than other percentages and the grand total frequency of 3.71% and way much higher than other disaggregated percentages of other forms of hedging in the introduction and conclusion sections that barely reach less than 1%. In the conclusion section alone, she used the modal hedge form "should" 17 times (with a frequency of 3% of the conclusion section) – a predictable action since her paper involves many recommendations made to the Saudi authorities with reference to

accommodating the rising demand on EFL enrollments in Saudi Arabia. Furthermore, "should" is used to "express extreme likelihood, or a responsible assumption or conclusion" (Palmer 1986: 49), and that is why it is the boosting modal verb that is used in the conclusion section of this article. The hedging item or modal verb "*should*" can also denote different degrees of boosting in different cultures (Vassileva 1987 & 2001) – although it should be noted here that such boosting modal verbs are most commonly used in the introduction sections of articles, which is not the case here.

Hedging in articles written in English by Chinese Researchers:

The articles written by Chinese non-native speakers of English revealed the least tendency to hedge overall. With an aggregated total frequency of 3.66%, they are 0.02 and 1.08 percentile points behind the Arab and native authors, (respectively), of the other articles when it comes to employing hedging devices in the introduction and conclusion sections of the articles. Even in terms of raw numbers (number of times all hedging items were used), this group ranked last with a grand total of 342 lexical and modal verbs and adverbial modal expressions. However, the articles written by Chinese linguists ranked second when it came to the use of hedges in the conclusion sections overall with 4.88% -

the same applies to the raw numbers associated with this frequency as Chinese authors used a grand total of 211 hedging devices in the conclusion sections of the their ten articles included in the sample population of this study (Table 43).

Findings of the aggregated final table for article written by Chinese writers demonstrate that hedges were used 342 times across the introduction and conclusion sections. Hedges used in the latter section are more than those used in the introduction by 62%. Conclusion sections seem to be culturally more important for Chinese writers as they tend to hedge more when compared to introductions.

Final Considerations:

Academic writing has the main purpose of spreading new knowledge and discussing what is now called common knowledge. Hence, employment of rhetoric's becomes fundamental in articles since the latter are expected to make or refute an argument, or drive a point home by persuading the audience of the validity of what is being introduced, discussed or refuted. This interactive reciprocal process of researching will prompt researchers to hedge their articles should they wish to mark their contribution. Results of the occurrence and

frequency of hedging devices, including booster modals, show that the Chinese are more conservative when it comes to modifying or hedging their arguments – unlike the native linguists and their Arab counterparts.

All in all, one can talk about different social needs constructing different disciplines in research area. In light of the analysis conducted as part of this study, native speakers will tend to hedge more their introductions and conclusions whereas both Arab and Chinese linguists will tend to hedge less when they write in English due to Hyland's rhetorical gap perhaps(and cultural gap as well) . Yet it goes without saying that the nature of the data, the 30 articles involved will determine the amount of hedging items to be used. Being more prone to postulate arguments and push forward with certain rigorous claims, native speakers will hedge more, but Arab and Chinese linguists sound as if they are either reluctant to hedge more or that they fail to render the hedging devices they have in their own respective mother languages. As a result, different rates of hedges would be reflected in the thirty articles written by the three different groups of authors or linguists. Given the limited scale of sample population and restricted nature of data involved in this study, it would not be plausible to claim or insinuate that non-native authors focus less on persuasion and that they,

therefore, hedge less than their native counterparts. It would still need a larger-scale study with a bigger sample population to accommodate the various considerations and the need to introduce a control group against which results can be uniformly compared.

As discipline, boosting is a much less researched phenomenon than hedging although the former is a key aspect of rhetorical persuasion in academic writing. Hence, one can only begin here to establish a connection in this regard between such a proposition and that of Hyland's with reference to the "rhetorical gap" among non-native writers in English. Perhaps, this might be one of the recommendations that result from this study in order to fathom the causes behind such phenomenon across native and non-native writers of RAs in English.

The higher or lower frequency of hedging expressions across the introductions and conclusions of the thirty articles of this study might further highlight the need to study further the epistemic elements embedded in academic writing. Being important in the construction of a rhetorical style, boosters need to be studied in more detail and in conjunction with hedges – since both are used by authors to communicate their purpose to their readership.

Recommendations and Suggestions for Further Research

This research took an initial step in exploring and examining the use of hedging expressions in thirty different authentic articles by native speakers of English researchers and non-native researchers' .It would be, indeed, valuable to replicate this study in the future, keeping in mind the following recommendations:

- Future research can be conducted on the use of hedging expressions in the whole body of the sample population of this research.
- The use of hedging expressions in Arabic literature is valuable to be conducted by further research.
- A future study can investigate the use of hedging expressions by different ethnic groups in the Arab World.

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