A Comparative Study of Hedging in English Research Article Discussion Written by Thai, Chinese, and Saudi Arabian Writers

Chuthaporn Somsakoon, Juthatip Wongsa, Nonthawat Promdam and Thitirat Suwannasom[*]

Department of English, Faculty of Humanities, Naresuan University, Phitsanulok 65000, Thailand
[*]Corresponding author. E-mail address: thitirats@nu.ac.th

Abstract

In academic writing, hedge words are often employed as rhetorical tools to cautiously deliver writers' convictions and discussions on findings in order to persuade the target readers into agreement, acceptance, and as well as suggest more opportunities for interpretation. This study aimed to investigate how hedges were used in research article discussion part in terms of types and frequency. Data were collected from an online open-access journal of applied linguistics published in 2020-2021. There were 36 research articles randomly selected from three groups of writers: Thai, Chinese, and Saudi Arabian. The findings demonstrated that the three groups of writers utilized a range of hedging patterns, including modal auxiliary verbs, modal lexical verbs, adjectival, adverbial, nominal, and modal phrases, approximators, introductory phrases, "If" clauses, and compound hedges, in their research discussion section. Among the three groups, Saudi Arabian authors used the largest number of hedges in the research discussion, while Thai and Chinese authors mainly used modal auxiliary verbs and modal lexical verbs in the research discussions. Additionally, Saudi Arabian authors were more likely than Thai, and Chinese authors to use overall hedging signals to show the level of certainty of their research discussions.

Keywords: Hedging, Academic Writing, Research Discussion, Research Articles, NNS Writers, Cross-cultural Discourse

Introduction

Hedge words are used in academic writing in English to indicate the degree of assurance and uncertainty of a writer (Hyland, 2008). In order to connect with readers and give them the chance to assess the content of a research article, researchers use hedging to express opinions regarding the validity of the sources they are referencing. Academic writers use hedges to accomplish a range of significant pragmatic goals, such as regulating their commitment to a notion, opening up a dialogic space, acknowledging subjectivity, or minimizing criticisms. Hedging, in other words, is a component of a writer's pragmatic competence, without which the writer may have difficulties in achieving written communication goals.

Research studies have suggested that the ability to use hedges in formal writing, such as research reports or articles, is an indicator of the writer's expertise in using the language that manifests uncertainty and non-commitment remarks (Crompton, 1997; Hyland, 1998; Myers, 1989; Salager-Meyer, 1994). In ESL writing classrooms, students are often taught to be clear and direct in their academic writing assignments. This can lead to ESL students being advised to avoid ambiguity or hedging in their college writing, which is a widely recognized pedagogical challenge (Hinkel, 2005). In fact, the appropriate use of hedges can prevent the writers' arguments from being quickly rejected or dismissed. Using hedging strategies, academic writers have more alternatives in expressing the degree of confidence in the support or proof (Hyland & Milton, 1997). In this respect, the use of tentative language or hedging is one of the most important skills academic writers in all disciplines to have.

Recently, the use of hedges has been investigated widely since it is considered problematic and less common for non-native authors. Furthermore, the way ESL academic writers apply hedges in their research writing might

be different across cultures. Several studies have found that non-native writers are less likely to use hedging strategies when they write than English native writers (Hinkel, 2005). A study done by Chen and Zhang (2017) compared the differences and similarities of hedging words used by Chinese and Anglophone English academic writers. It was found that different social cultures, rhetorical traditions, and degrees of pragmatic proficiency are key contributors to the use of hedges as non-native English academic writers have their own styles in projecting their own authorial voice. For Arabic writers, students who have been exposed to English literary forms in their early education tend to provide more detailed descriptions of the setting and characters' emotions and mental processes in their storytelling, which is characteristic of Arabic literary style (Söter, 1988). In storytelling, Arabic literary style involves portraying the emotional and mental states of characters and providing background information about the story's setting. This style is connected to the use of hedges in English academic writing, as many Arabic speakers organize their writing in ways that align with discourse norms, which could be a result of using hedges to develop paragraphs. Additionally, Fakhri (1994) asserts that most L1 Arabic writers use hedges frequently in their L1 writing, and therefore, Arabic writers are likely to transfer their hedging styles from L1 to English and monitor their writing accordingly. Furthermore, most of students think in Arabic before translating their work into English so that they can minimize the occurrence of mistakes.

Some influencing factors affecting the use of hedging have been mentioned in previous studies. Kaplan (1966) proposed that the cultural thought patterns in each language are affected by a particular way of thinking that is exclusive to the culture or to the individuals' collective habits and beliefs. There are five main groups of cultural thought patterns. Languages of Asia, including Chinese and Thai, often use indirect communication and topics are not typically addressed in a straightforward manner but presented through multiple perspectives. On the contrary, writers from Arabic cultures usually organize their text using parallelism in which both positive and negative viewpoints are equally presented. How sentences are ordered and constructed within a paragraph reveals the thought process being used, representing the cognitive process unique to each culture. Therefore, people from different linguistic backgrounds are likely to employ different types of discourse strategies in both verbal and written communication, including presenting their stances through the use of hedges.

According to Hyland (2008), hedges are pragmatic devices to show the writer's awareness of the readers' comprehension. By referring to the reader, the use of hedges can contribute to the discussion of such paper with an open mind because hedges invite readers' cooperation and comprehension of the proposed research assumption. Writers who use hedge strategies are likely to establish a viewpoint that allows the target reader to argue or agree with the exposition made in the writing. Nevertheless, the use of hedging language in an ESL academic writing class may appear in the last unit of instruction in college writing. The practice of affirmation techniques is made more complicated for L2 students because writing teachers usually focus on grammatical and structural features in the instructional process (Hyland, 2008). Regarding this, Kim and Lim (2015) also suggest that explicit instruction and practice in hedging can be beneficial for student writers. Since hedging can vary across disciplines and cultures, understanding the differences in choices of hedges words of authors from different background can be important for effective communication in academic contexts.

Generally, there is an impression that academic writing in English requires direct, linear arguments and that hedging one's statements in writing weakens the arguments being made. As Wishnoff (2000) suggests, the inability to avoid 'directness' may indicate a student's failure to acquire L2 pragmatic fluency, which should be explicitly taught in writing classrooms. The lack of linguistic competence in adjusting one's remarks has become

a pedagogical concern in L2 English academic writing courses. Indeed, the ability to use hedging or the capacity to decrease commitment to propositions is considered a crucial meta discourse skill that many developing writers and perhaps more specifically, non-native English writers need to improve. As Salager-Meyer (1997) suggests, the purpose of hedges is basically to adapt to the writing style of the target discourse community, not necessarily to avoid face-threatening actions. However, to fully understand how non-native writers use tentative language in formal writing, more empirical data into the authentic use of hedges in published documents across cultures needs to be identified, collected, and analyzed.

Literature Review of Hedging Devices in Academic Writing

The use of hedging in academic writing has been drawing linguistics researchers' attention in recent decades. In one of the first explorations of this phenomenon, Lakoff (1973) defined hedges as words or phrases, "whose job is to make things fuzzy or less fuzzy", implying that writers are less than fully committed to the certainty of the referential information they present in their writings. This indicates that hedging is a technique used by writers to indicate their level of confidence or certainty in their statements while expressing their personal opinions in academic writing; therefore, the use of hedges can be considered as a defining characteristic of a writer's approach to academic writing.

According to Salager-Meyer (1994), the taxonomy of hedging includes three common types: Shields, Approximators, and Compound Hedges. These are chosen based on the overall structure and purpose of the discourse, the level of claim the writers want to make, and the degree to which the writers want to convey universality and generalization. Additionally, the study suggests that hedging is an important skill for scientific writing, and therefore recommends teaching methods such as sensitization, translation, and rewriting exercises in English for Specific Purposes (ESP) courses. Hyland (1995) investigated the frequency and the use of hedges in 26 scientific research articles. This study also aimed to analyze the work of writers who find hedges difficult to use. The results revealed that from 26 research articles, the epistemic modal verb was the type of hedge that was used the most, followed by modal nouns and adverbs, respectively. The study also indicated that specifically, the discussion section of research papers typically features the most hedging devices. The results showed that it is necessary to prioritize hedges in teaching for scientific writing and also information about hedges was lacking, so more research needs to be conducted. In the same manner, Salager-Meyer (1994) proposed that hedging is a linguistic tool that represents the core principles of doubt and skepticism in science. One of the key elements of scientific discourse is evaluating evidence and drawing conclusions from data. Studies in various fields such as sociology of science have also shown that academic discourse is shaped by social context and is used to achieve specific rhetorical aims. Linguistically, these goals are achieved through the use of hedges which are mostly verbal or adverbial expressions, such as "can", "perhaps", "may", "suggest" which express degrees of probability.

Furthermore, Martín (2003) and Myers (1989) both agree that in academic discourse, hedging is an essential rhetorical technique that writers can employ to lessen claims regarding the authority of knowledge and to decrease the risk of receiving negative feedback from peers. In communication between writers and readers, hedges serve as useful linguistic tools that writers can use to gain acceptance from other researchers and to contribute to the knowledge base within their field. The most frequent functions of hedging found in academic writing include "indetermination", "camouflage", "subjectivization", and "depersonalization" (Hyland, 1996; 1998).

There are a number of studies investigating hedging in academic writing in written by writers from different cultural contexts. For example, Sukhanindr (2009) looked into hedges in the Introduction, Method, Results, and Discussion sections of twenty research articles in the field of English Language Teaching (ELT). The findings showed that Thai authors may have a more limited range of hedging devices than English native authors. It was also reported that, firstly, an epistemic modal is the most commonly used device to express hedging in research articles by both Thai and English native authors. Secondly, the results section, written by Thai authors, seemed to contain more hedging than the introduction section. This is contrary to native authors, whose hedges were found more frequently in the introduction section than in the results section. Chen and Zhang (2017) explored the use of hedging between Chinese and Anglophone academic English writers and found that hedges were more frequently utilized by English authors than by Chinese authors. Statistically, the category of hedges used did not differ significantly between the two groups; however, the usage of hedging varied between the two groups in their language statements. Regarding intercultural rhetoric and the pragmatic ability of L2 academic writers, a similar pattern in their choice of hedge categories was also examined.

In addition, Prasithrathsint (2015) posits that hedging is the use of mitigating words to decrease the impact of an expression. It may create ambiguity in language but it is considered as a significant element in English academic writing. It is suggested that non-native speakers of English use fewer and different types of hedging devices compared to native speakers of English. Common linguistic markers of hedging include the auxiliaries "may", "might", "could", the verbs "suggest", "appear", "seem", and the adverbs "perhaps" and "often". These hedges can be grouped into three categories according to their stylistic attributes: "probability", "indetermination", and "approximation". The use of hedging found in the research supports Hyland's (1994) argument that hedging allows writers to express their uncertainty about the truth of their statements. Additionally, it was found that English native speakers use hedges most frequently, followed by Filipino speakers of English, while Thai speakers of English use hedges the least frequently. This suggests that hedging is likely linked to the level of English proficiency, including understanding of stylistic variations, and that it should be specifically taught to those who speak English as a second or foreign language. Another study conducted by Wiboonwachara and Rungrojsuwan (2020), the use of hedging markers in English research articles written by Thai academic novice and professional writers was investigated. Through a qualitative analysis, it was found that novice writers employed 16 forms of hedging markers, while professionals used 17 forms. Additionally, the most prominent type of marker was the combined-hedging marker, which was used differently by the two groups. Novice writers only used five combined markers, while professionals used 13. The quantitative results indicated a significant difference in the frequency of hedging marker usage between the two groups, with professionals utilizing all markers more frequently than novice writers.

According to a study by Alghazo et al. (2021), there are distinctions in the way academic authors express their perspective and interact with readers in Arabic and English. In particular, it was found that Arabic academic writers use fewer probability expressions, more boosters and attitude markers, whereas English academic writers showed the opposite trend. Additionally, self-mention as an indication of stance was not present in the English abstracts, but occurred eight times in the Arabic abstracts. Finally, Arabic academic writers used fewer engagement markers, such as directives and imperatives, than English academic writers.

Although some previous attempts have been made to compare the use of hedging words among Chinese and English native writers, as well as Arabic writers and English native writers, there is a lack of research that examines

the use of hedging words among Non-Native Speaker (NNS) academic writers, especially among Thai, Chinese, and Arabic writers. Therefore, this study recognizes the need for a cross-cultural investigation to compare the use of hedges in academic writing among these three groups in order to bridge the gap in the literature. Since previous studies (Hyland, 1994; Salager-Meyer, 1994; Prasithrathsint, 2015) have suggested that authors from different cultures are likely to express different styles of hedging in their academic writing, the researchers of this study were motivated to establish a deeper understanding of the cautious language produced by non-native English authors who represent the diversity of cultural thought patterns across the applied linguistics fields.

Research Questions

1. What are the types of hedging used in the discussion sections of research articles written by Thai, Chinese, and Saudi Arabian authors?

2. To what extent do Thai, Chinese, and Saudi Arabian authors use hedging in the research article discussion?

Methodology

The researchers collected 36 research articles published between 2020-2021 from the English Language Teaching Journal website which is an online open journal hosted by Canadian Center of Science and Education. The journal has been publishing research articles about English language teaching and learning since 2008 on a monthly basis. This online peer-reviewed journal was selected because there were authors from diverse nationalities, including Americans, Africans, Asians, Europeans, and Middle Easterners. This diversity of authorship is likely to have impacted a broader academic audience and represented a range of discourse diversities. Using purposive sampling techniques, 36 research articles were selected, in which 12 of each were written by Thai, Chinese and Saudi Arabian authors. In addition, these groups of authors were representatives of the two different cultural thought patterns proposed by Kaplan (1966) whereas Thai authors were selected to compare the discourse approaches with the Chinese and Saudi Arabian authors. To analyze the hedges used in the research articles, the discussion part of each article was selected. The number of words written in the RA discussion part by each group of authors is shown below in Table 1.

Table 1   Word Count and Percentages of Hedges in Research Article Discussions

	Word Count	Hedges	Percentages
Thai	8,648	124	1.43%
Chinese	8,015	115	1.43%
Saudi Arabian	8,940	154	1.72%
Total Number of Words	**25,603**	**393**	**1.53%**

Framework of Analysis

Table 2 Taxonomy of Hedges (Adapted from Salager-Meyer, 1997)

Types	Examples
Modal Auxiliary Verb	may, might, can, could, would, should
Modal Lexical Verb	to seem, to appear (epistemic verbs), to believe, to assume, to suggest, to estimate, to tend, to think, to argue, to indicate, to propose, to speculate
Adjectival, Adverbial, and Nominal Modal Phrase:	
– Probability Adjective	certain, definite, possible, probable, un/likely, assumption, claim, possibility, estimate, suggestion perhaps, possibly, probably, practically, likely, presumably, virtually, apparently
– Noun	
– Adverb	
Approximator of Degree, Quantity, Frequency, and Time	approximately, almost, altogether, roughly, about, often, occasionally, generally, usually, somewhat, somehow, a lot of
Introductory Phrase	It is widely agreed that ..., It could be the case that ..., To our knowledge ..., It is our view that ..., We feel that ..., In the view of many researchers, ...
"If" Clause	If true ..., If anything ...
Compound Hedge	seems reasonable / would appear/ would seem/ somewhat unlikely/ may appear/ somewhat speculative that

The main framework used in this study was adapted from Salager-Meyer (1997). Three primary factors led to the selection of this paradigm. First, it has been widely acknowledged in the analysis of hedging that authors should regulate their remarks to reduce the risk of disagreement and to lessen the "threat-to-face" that lies behind every communication activity. Second, expressing a lack of assurance does not always imply confusion or vagueness, and the exclusive association of hedges with prevarication can mask some crucial roles of hedging. Third, it is advantageous to view hedges as either positive or negative politeness tactics., i.e., as "sophisticated rational strategies" used to mitigate two central positions expressed in scientific writing: to present claims (or findings) pending acceptance by the international scientific community, and to deny claims presented by other researchers.

The hedges found in the discussion part in the research articles were, therefore, classified according to the taxonomy proposed by Salager-Meyer (1997). Descriptive statistics such as frequencies, normalized frequencies, and percentages were used to analyze the data. To express the frequency of occurrence of different values or categories in a given dataset, normalized frequencies were calculated by multiplying the frequencies by 10,000 and dividing by the total number of observations in the dataset. For example, in a dataset of 8,940 words, if the frequency of a particular hedging type was 45, the normalized frequency would be (45 x 10,000) / 8,940 = 50.33. This allows for the comparison of the relative frequency of different values or categories in the dataset.

Results

The hedges used by Thai authors in the discussion sections of research articless were analyzed and the findings of this study indicate that Modal Auxiliary Verbs (71.79%) were the most frequently used form of hedging. It was followed by Modal Lexical Verbs (17.74%), Approximators (4.03%), Compound Hedges (2.42%), Introductory Phrases (1.61%), Probability Adjectives (0.80%), Nouns (0.80%), and Adverbs (0.80%), respectively.

According to Table 3, the Thai authors frequently used Modal Auxiliary Verbs and Modal Lexical Verbs respectively. While some Approximators of degree, quantity, frequency and time as well as Compound Hedges were found occasionally, they rarely used Adjectival, Adverbial, and Nominal Modal Phrases in the discussion part. In addition, the use of "If" clauses was not found in the RA discussion parts written by Thai authors.

Table 3 Types of Hedges Used in Research Article Discussion Part by Thai Authors

Taxonomy of Hedges	Frequency	Normalized Frequency	Percentage	Example of Sentences from the Corpus
Modal Auxiliary Verbs	89	102.91	71.79	Therefore, the reading process **should** be considered ...
Modal Lexical Verbs	22	25.43	17.74	It **seems** to be concluded ...
Adjectival, Adverbial, and Nominal Modal Phrases:				
– Probability Adjectives	1	1.15	0.80	One **possible** reason was ...
– Nouns	1	1.15	0.80	... the provision of clues or **suggestions** ...
– Adverbs	1	1.15	0.80	HI students scored a **slightly** higher ...
Approximators of Degree, Quantity, Frequency, and Time	5	5.78	4.03	**Generally**, education provides knowledge ...
Introductory Phrases	2	2.31	1.61	**It should be the case that**...
"If" Clauses	0	0	0	–
Compound Hedges	3	3.46	2.42	... collaborative efforts in a natural setting **would be unlikely** to occur.
Total	**124**	**143.34**	**100**	

According to Table 4, the most used hedging signals by Chinese writers was Modal Auxiliary Verbs, followed by Modal Lexical Verbs, and Approximators that were found at the same number of instances which were both at 20%. In RA discussion parts written by Chinese writers, the writers seem to use these three the most. As seen in Table 4, the results also indicate that Chinese writers were unlikely to use Adverbs (2.60%), Nouns (1.73%), Probability Adjectives (0.86%), and "If" clause (0.86%). The table also reveals that Chinese writers of this study did not use any Compound Hedges or Introductory Phrases in the discussion sections of their papers.

Table 4 Types of Hedges Used in Research Article Discussion Part by Chinese Authors

Taxonomy of Hedges	Frequency	Normalized Frequency	Percentage	Example of Sentences from the Corpus
Modal Auxiliary Verbs	62	77.35	53.91	This **may** be because ...
Modal Lexical Verbs	23	28.69	20	The range of variation in this data **suggests** that ...
Adjectival, Adverbial, and Nominal Modal Phrases:				
– Probability Adjectives	1	1.24	0.86	Conversely, they are also **likely** to feel anxious...
– Nouns	2	2.49	1.73	Other **suggestions** concerned ...
– Adverbs	3	3.74	2.60	This is **probably** because previous studies mostly targeted students who took online courses for self-learning.
Approximators of Degree, Quantity, Frequency, and Time	23	28.69	20	EFL courses are **generally** taught along with ...
Introductory Phrases	0	0	0	–

Table 4 (Cont.)

Taxonomy of Hedges	Frequency	Normalized Frequency	Percentage	Example of Sentences from the Corpus
"If" Clauses	1	1.24	0.86	*If* the scores are higher, it does not absolutely mean retranslation.
Compound Hedges	0	0	0	–
Total	**115**	**143.44**	**100**	

As can be seen in Table 5, it was found in the Saudi Arabian authors used all kinds of hedging signals in their research discussions. In the dataset, the most common hedges were Modal Auxiliary Verbs, and Modal Lexical Verbs (29.22%) each, followed by Approximators of Degree, Quantity, Frequency, and Time (14.94%), as well as Adverbs (14.29%). Those used in moderation were "If" Clause, and Compound Hedges (3.90%). The findings also revealed that Probability Adjectives and Nouns (both at 1.94%) were used slightly. Finally, Introductory Phrases (0.65%) was the least frequently used feature.

Table 5 Types of Hedges Used in Research Article Discussion Part by Saudi Arabian Authors

Taxonomy of Hedges	Frequency	Normalized Frequency	Percentage	Example of Sentences from the Corpus
Modal Auxiliary Verbs	45	50.33	29.22	For example, they *may* open many websites during exams...
Modal Lexical Verbs	45	50.33	29.22	They *suggested* that they themselves study hard, review their lessons regularly ...
Adjectival, Adverbial, and Nominal Modal Phrases:				
– Probability Adjectives	3	3.35	1.94	... effective and sustained learning is only *possible* when the learners' core optional subject motivates them ...
– Nouns	3	3.35	1.94	...this *claim* was based on detailed descriptive approach and observation.
– Adverbs	22	24.60	14.29	It was *clearly* elaborated that ...
Approximators of Degree, Quantity, Frequency, and Time	23	25.72	14.94	... who found that *lots of* students cheat because there was not enough time to study.
Introductory Phrases	1	1.11	0.65	*They hold the view that* ...
"If" Clauses	6	6.71	3.90	... *if* one member of the group fails to fulfill ..., the burden is then shifted on ...
Compound Hedges	6	6.71	3.90	... it was still *slightly insignificantly* higher than L1 translation.
Total	**154**	**172.21**	**100**	

Table 6 Types of Hedges Used by Thai, Chinese, and Saudi Arabian Writers in Research Article Discussion

Taxonomy of Hedges	Thai	Chinese	Saudi Arabian	Total	Percentage	Rank
Modal Auxiliary Verbs	102.91	77.35	50.33	230.59	50.24	1
Modal Lexical Verbs	25.43	28.69	50.33	104.45	22.76	2
Adjectival, Adverbial, and Nominal Modal Phrases:						
– Probability Adjectives	1.15	1.24	3.35	5.74	1.25	8
– Nouns	1.15	2.49	3.35	6.99	1.52	7

Table 6 （Cont.）

Taxonomy of Hedges	Thai	Chinese	Saudi Arabian	Total	Percentage	Rank
- Adverbs（which could be considered as non-verbal modals）	1.15	3.74	24.60	29.49	6.42	4
Approximators of Degree, Quantity, Frequency, and Time	5.78	28.69	25.72	60.19	13.11	3
Introductory Phrases	2.31	0	1.11	3.42	0.75	9
"If" Clauses	0	1.24	6.71	7.95	1.73	6
Compound Hedges	3.46	0	6.71	9.71	2.22	5
Total	**143.34**	**143.44**	**172.21**	**458.99**	**100**	

To compare the use of hedging devices in RA discussions among the three nationals, Table 6 indicated that the most frequently used types of hedges were Modal Auxiliary Verbs （50.24%） followed by Modal Lexical Verbs （22.76%）. Among the three groups, Thai authors used Modal Auxiliary verbs as the most frequent hedging devices （102.93）; however, Modal Lexical Verbs were employed by Saudi Arabian authors （50.33） in the RA discussion part more than Thai （25.43） and Chinese （28.69） authors. Saudi Arabian authors also used more Adverbs （24.60） than Thai （1.15） and Chinese （3.74） authors.

Although Adverbs （6.42%） and Approximators （13.11%） were used moderately, Saudi Arabian authors used more Adverbs （24.60） than Thai （1.15） and Chinese （3.74） authors; on the other hand, Chinese （28.69） authors slightly used more Approximators than the other two groups.

Overall, Compound Hedges （2.22%）, "If" Clauses （1.73%）, Nouns （1.5%）, and Probability Adjectives （1.27%） were infrequently employed. Finally, Introductory Phrases （0.76%） were the rarest hedging type used in this study.

Conclusion and Discussion

This study compared hedging in discussion sections of English research articles of Thai, Chinese, and Saudi Arabian authors. The findings of this present study support the idea of the discourse in L2 academic writing of Hyland （2004） in which non-native writers used mainly Modal Auxiliary Verbs as hedges. In this study, Saudi Arabian authors used a greater variety of hedging types than Chinese and Thai authors in the discussion sections of their research articles, while Thai and Chinese authors generally use Modal Auxiliary Verbs and Modal Lexical Verbs in their research discussions.

According to the results, it was found that Thai, Chinese, and Saudi Arabian authors most frequently used Modal Auxiliary Verbs as hedges in the research article discussion sections. This supports the claim of Salager-Meyer's （1994; 1997）; Wiboonwachara and Rungrojsuwan （2020）; Sukhanindr （2009） that Modal Auxiliary Verbs as hedges characterize academic writing in both L1 and L2 writing, confirming the results of Hyland and Milton's （1997） previous study.

Regarding the comparison of hedges used by the three groups, some differences in the use of hedging in the research article discussion sections were discovered among Thai, Chinese, and Saudi Arabian authors. The Saudi Arabian authors showed differences in this study as they used all types of hedges in academic writing. This finding proves consistent with the previous studies of Söter （1988）; and Fakhri （1994） which suggest that the Arabic writers seem to have a wider choice of lexical terms at their disposal when they want to provide more information,

which appear to be a feature of the Arabic literary style. Besides, it was claimed that the Arabic writers knew the use of hedges was acceptable in English and monitored their writing during the task. This can be explained by the previous findings about classical Arabic composition mentioned by Hinkel (2005) that Arabic authors often use amplification and exaggeration when they write. On the other hand, Chinese and Thai authors both tend to use Modal Auxiliary Verbs and Modal Lexical Verbs in research discussion writing when hedging in academic writing. This is also mentioned in earlier studies such as Prasithrathsint (2015) regarding the prevalence of auxiliary verbs used as hedges by speakers of English as a foreign language.

Comparing the kinds of hedges used by three groups of non-native English academic authors, it can be stated that authors from different cultural thought patterns are likely to employ different rhetorical choices, hedging language in this case, in their academic texts. According to Kaplan (1966) social cultures, rhetorical traditions, and levels of pragmatic skill are important factors in the usage of hedges. In other words, cultural thought patterns in each language are influenced by a certain method of thinking that is unique to the culture or to the peoples' general habits and beliefs. It is likely that writers of different languages would use various discourse tactics, such as hedges, in both oral and written communication. Nevertheless, the ability to use tentative language in the discussion part may protect authors from the risk of being disproved. This will also allow for new perspectives to emerge from the study and strengthen the credibility of authors' argument in discourse communities (Salager-Meyer, 1997). As a result, non-native authors should pay more attention in using hedges for communicative purposes in subject-specific discourse. The relevance of hedging in academic discourse highlights the need for non-native academic members to become accustomed with the function and impact of hedging devices in academic writing and communication. Hedging, therefore, should be practiced as a crucial communicative strategy that aids non-native English authors in developing strong arguments and establishing relationships with their audience in order to gain acceptance and constructive feedback from the discourse community.

Limitation and Implications

This study was limited due to a small sample size. The data were collected from 36 research articles published by the same journal across two years. Therefore, future studies should aim to collect a larger volume of data from multiple journals or from different disciplines over the course of several years. This will help researchers gain a more comprehensive understanding of the use of hedging language in academic writing across different contexts. In addition, the result implies that some non-native authors who have cultural-oriented writing background may appear to effectively use hedging language in the research articles. Therefore, it might be interesting to investigate other cultural-related factors that could benefit academic English writing skills or to incorporate cultural-oriented writing backgrounds into writing instructions to help improve the use of hedging language in academic writing.

It is also recommended that Thai and Chinese authors should be guided on how to use various hedging features that are valued in written academic genres. Therefore, instructors should provide explicit instruction and feedback on how to use hedging language in L2 academic writing to help non-native authors to convey uncertainty, demonstrate a nuanced understanding of the topic, and acknowledge the complexity of the subject matter. In academic writing, hesitation and uncertainty in writing is a textual feature more specific to the rhetoric tradition. The hedging instruction in L2 academic writing may require more attention since research writers may need more practice utilizing hedging in their writing. Furthermore, demonstrating an appropriate amount of hesitation and uncertainty through cautious or tentative languages may facilitate the understanding between facts and claims.

In conclusion, the findings of this study can help English language instructors, especially those who teach academic writing, gain more insight into the use of hedges and encourage young researchers and graduate students to use the various types of hedges in their academic writing. These insights can potentially enable instructors to identify areas of improvement among research students and to increase rhetorical and syntactic complexity in student academic writing.

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