

## Epistemic Lexical Verbs as Hedging Devices and Their Semantic Prosodies in Applied Linguistics Abstracts in Thai International Journals

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Article information	
<b>Abstract</b>	Under Hyland’s (2005) interactional metadiscourse taxonomy, hedging devices are used to mitigate the certainty of the claims. Epistemic lexical verbs as hedging devices are found to be the prevalent metadiscourse marker in applied linguistics research article abstracts (e.g., Chaisiri et al., 2025). Semantic prosody refers to how the attitudinal and evaluative meanings of words are shaped by their co-occurring linguistic environments. However, the semantic prosodies of epistemic lexical verbs as hedging devices in applied linguistics research article abstracts have not yet been explored. To fill this gap, this study explored epistemic lexical verbs as hedging devices and analyzed the semantic prosody of each of the verbs identified in 300 applied linguistics research article abstracts in Thai English-language international journals to understand the discourse phenomena of this discourse community (i.e., researchers publishing in these journals). The findings indicated ten epistemic lexical verbs as hedging devices. The semantic prosody analysis demonstrated that all the identified epistemic lexical verbs tended to exhibit a neutral semantic prosody. However, the concordance lines indicated that certain words appeared in positive, negative, or both contexts, offering insights into how epistemic lexical verbs are associated with their semantic prosodies in academic discourse.
<b>Keywords</b>	epistemic lexical verbs, hedging devices, semantic prosody, metadiscourse, applied linguistics research article abstracts
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### 1. Introduction

Lexico-grammar is regarded as a key element of research article abstracts (e.g., Bhatia, 1993; Hyon, 2018; Swales, 1990). Bhatia (1993) argued that an analysis of lexico-grammatical features involves examining vocabulary and grammatical patterns to identify how they are employed to fulfill the functions of specific genre moves. Lexico-grammatical features include “recurring words, phrases, parts of speech, tense, aspect, voice, and various syntactic constructions” (Hyon, 2018, p. 51). Regarded as a micro-level analysis of a genre (Bhatia, 1993), an analysis of lexico-grammar sheds light on the comprehensive understanding of genre-

specific linguistic features. One essential lexico-grammatical feature in academic writing is hedging devices (e.g., Hyland, 2023; 2024). Given that “knowledge claims must be carefully handled to overcome the possibility of negation by the reader” (Hyland, 2000, p. 87), writers hedge to emphasize caution and introduce alternative arguments when they present claims or knowledge (Hyland, 2023).

The current study focuses on epistemic lexical verbs as hedging devices in abstracts of applied linguistics research articles published in Thai homegrown international journals, as Chaisiri et al. (2025) found that these verbs are the most frequently employed hedging devices writers use to present their findings in abstracts. Moreover, previous studies (e.g., Sukhanindr, 2009; Wiboonwachara & Rungrojsuwan, 2020) have indicated that hedging remains challenging for Thai EFL writers.

Additionally, semantic prosody, which is defined as “a consistent aura of meaning with which a form is imbued by its collocates” (Louw, 1993, p. 157), plays a significant role in shaping meaning interpretation. Semantic prosody is influenced by co-occurring words, grammatical patterns, associations with particular meanings or contexts, as well as the shared experiences of speakers and interlocutors (e.g., Hauser & Schwarz, 2023; Louw, 1993; Sinclair, 2004).

However, to the best of my knowledge, the notion of semantic prosody (i.e., the positive, negative, or neutral) of epistemic lexical verbs as hedging devices in applied linguistics research article abstracts has not yet been explored. The semantic prosody of each of the epistemic lexical verbs as hedges in research article abstracts published in Thai Scopus-indexed journals remains unknown. As pointed out by Phoocharoensil (2022), Scopus-indexed journals can represent the quality and credibility of the publications. Therefore, the current study aims to address the following research questions.

1. What are epistemic lexical verbs that function as hedging devices in applied linguistics research article abstracts of Thai homegrown international journals?
2. What is the semantic prosody of each of the identified epistemic lexical verbs as hedges in applied linguistics research article abstracts of Thai homegrown international journals?

## 2. Literature Review

### 2.1 Hedging

Hedging is one of the interactional metadiscourse markers, along with attitude markers, boosters, engagement markers, and self-mentions (Hyland, 2005). Not only does research on metadiscourse yield insights into language-context relationships, but it also reveals the ways people employ language to navigate and interpret specific communication (Hyland, 2017). Writers employ metadiscourse markers to guide readers and make the intended meaning clearer (Hyland, 2017). The function of hedges, such as *indicate* and *appear*, is to “withhold complete commitment to a proposition, implying that a claim is based on plausible reasoning rather than on certain knowledge” (Hyland, 2023, p. 515).

Studies on hedging have been extensively conducted in the field of applied linguistics. Hyland (2005) found that hedging is the most frequently employed metadiscourse in research articles in the field of applied linguistics compared to others. Drawing on Hyland’s (2005) findings, the use of hedging is crucial not only in applied linguistics postgraduate dissertations but also in applied linguistics research articles. A study by Hu and Cao (2011) also supports

Hyland (2005), showing that applied linguists employ more hedges than boosters in their English-language research article abstracts. More recently, by comparing the use of hedges in research articles written by native speakers of English and non-native speakers of English, Budiarti et al. (2023) pointed out that the latter use fewer epistemic lexical verbs as hedging devices compared to the former.

Based on grammatical functions, Hyland (1998) classified hedging devices into five types, namely epistemic adjectives such as *(un)likely*; epistemic adverbs such as *presumably*; epistemic lexical verbs such as *indicate*; epistemic modal auxiliaries such as *would*; and epistemic nouns such as *estimate*. He also revealed that epistemic lexical verbs are the most prevalently used hedging devices in journal corpora.

Hyland (1998) classified epistemic lexical verbs as hedging devices into four types: *speculative*, *deductive*, *quotative*, and *sensory*. The speculative type, such as *believe* and *think*, is used when writers present their claims as subjective opinions rather than objective facts. The deductive type presents inferred claims based on inferential knowledge using verbs such as *assume*, *infer*, and *suggest*. The speculative and deductive are regarded as epistemic judgmental verbs as they function to convey the speaker's appraisal regarding the factive status of events (Dontcheva-Navratilova, 2018). The third type is the quotative, such as *propose* or *suggest*, used to report information cited from other available sources, such as previous studies. This type is referred to as hearsay by Hyland (1998). The last type is the sensory used by writers to present their claims based on sensory perception using verbs such as *appear*, *seem*, and *view*. Hyland (1998) argued that the quotative and sensory types are of epistemic evidential verbs, as they are lexical verbs referring either to previous literature from other scholars or to the writers' sensory perceptions, respectively. Vass (2017) noted that, in order to classify a hedge into the aforementioned types, the context in which each lexical verb is used must be taken into account. Therefore, one verb can function more than one way within these four types.

In the Thai context, previous studies have attempted to examine the use of hedging devices among EFL writers. In a comparison of ELT research articles written by Thai writers and native English-speaking writers, Sukhanindr (2009) concluded that the former employed fewer hedging devices than the latter. Drawing on a corpus of research articles in the fields of humanities and social sciences, Wiboonwachara and Rungrojsuwan (2020) found that Thai novice writers employed fewer hedging devices than professional writers. Findings from previous studies on Thai EFL writers (e.g., Sukhanindr, 2009; Wiboonwachara & Rungrojsuwan, 2020) suggest that the use of hedging devices remains a challenge for both novice and professional Thai EFL writers.

### 2.1.1 Hedging in Research Article Abstracts

A study by Hu and Cao (2011) provides insights into the different cultural discursive strategies, epistemological approaches, and the lack of exposure to rhetorical awareness realized through the use of hedging devices in research article abstracts. Analyzing the use of hedging in applied linguistics research article abstracts from three types: Chinese-language abstracts in Chinese journals, English-language abstracts in Chinese journals, and English-language abstracts in English journals, they found that writers of applied linguistics research article abstracts published in English journals employ more epistemic lexical verbs as hedging devices compared to those in Chinese-language research article abstracts published in Chinese journals and English research article abstracts published in Chinese journals. Drawing on

previous research (Hu & Cao 2011; Li & Pramoolsook, 2015), the use of hedging appears to follow cultural and disciplinary conventions. Therefore, in the field of applied linguistics, where epistemic lexical verbs are the most dominant type of hedging devices (Hyland, 2005), to the best of my knowledge, no research has yet touched upon the use of hedging devices in applied linguistics research article abstracts in Thai homegrown English-language journals. Another reason for examining epistemic lexical verbs is that, as Hyland (1998) pointed out, among epistemic lexical verbs, those related to epistemic stance are the most transparent in terms of subjectivity, used to signal commitment or assertiveness.

Previous literature has revealed the prevalent use of epistemic lexical verbs as hedging devices in research article abstracts. Li and Pramoolsook (2015) conducted a comparative study of hedging in management and marketing research article abstracts and found that epistemic lexical verbs are the most prevalent hedging devices in both disciplines. More recently, a study on hedging devices in applied linguistics research article abstracts by Chaisiri et al. (2025) echoes the findings of Li and Pramoolsook (2015) as they found that applied linguists employ epistemic lexical verbs (e.g., *indicate*, *suggest*) most frequently, especially when presenting their research findings or in the Product move of applied linguistics research abstracts.

## 2.2 Semantic Prosody

Koester (2022) suggested that the application of corpus linguistics can also yield insights into how users of a specialized genre employ genre-specific linguistic phenomena by investigating semantic prosodies. Since semantic prosody cannot be retrieved through intuition or introspection (e.g., Hunston, 2022), an analysis of hidden meanings through concordance lines can uncover the meanings that dictionaries may overlook. Supanfai (2018) pointed out the two approaches for an analysis of semantic prosody, namely the EUM-oriented approach (extended unit of meaning) and the polarity-oriented approach.

### 2.2.1 The EUM-Oriented Approach

Sinclair (1991) first introduced the notion of semantic prosody, although he did not use the term itself. Later, Louw (1993), inspired by Sinclair's (1991) observations on *set in* and *happen*, coined the term semantic prosody. Sinclair (1991) revealed that *happen* seems to occur within a specific semantic environment, namely, unpleasant events or situations, such as *accidents happen*. Sinclair (1991) also pointed out that *set in* tends to collocate with negative words, such as *rot*, as in "*where the rot set in*" (p. 74).

Sinclair (2004) argued that "the initial choice of semantic prosody is the functional choice which links meaning to purpose; all subsequent choices within the lexical item relate back to the prosody" (p. 34). In Sinclair's (2004) view, semantic prosody is a powerful tool in language that shapes how actions and statements are perceived. By carefully selecting words with the appropriate prosody, speakers and writers can subtly guide their audience's emotional and evaluative responses. In essence, according to Stewart (2010), Sinclair's (2004) perspective on semantic prosody takes into account the "lexical item/extended unit of meaning" (p. 10), which includes collocation, colligation, and semantic preference. This means that the choice of words is influenced by their tendency to co-occur with certain other words (collocation), their grammatical patterns (colligation), and their association with particular meanings or contexts (semantic preference), all of which work together to shape the overall meaning and impact of the utterance.

Following Sinclair (1991), an analysis of semantic prosody is based on a node's linguistic environment. Supanfai (2018) coined this approach as the “EUM-oriented approach” (extended unit of meaning), an analysis of semantic prosody that can be considered as “any pragmatic function or meaning” (p. 101).

### 2.2.2 The Polarity-Oriented Approach

According to Supanfai (2018), an analysis of semantic prosody from the perspectives of Louw, Stubbs, and Partington is called the polarity-oriented approach, which is based on the individual collocates of each word in concordance lines. Rooted in the interrelated role of language and irony, as the second perspective after Sinclair (1991), Louw (1993) pointed out that *utterly*, *bent on*, and *symptomatic of* tend to have the negative semantic prosody. What is striking about Louw's (1993) seminal work is his methodological approach for an analysis of semantic prosodies by identifying irony in corpus-driven analysis. Louw (1993) coined the term “semantic prosody” which refers to “a consistent aura of meaning with which a form is imbued by its collocates” (p. 157).

Supanfai (2018) argued that in Louw's (1993) perspective, the semantic prosody of a word can be identified manually by examining concordance lines, suggesting that words have either a positive or negative prosody based on their collocates. Hunston (2022) argued that Louw's (1993) approach is problematic because it lacks a more fluid, context-dependent understanding of semantic prosody, influenced by the diversity of individual language experiences within the broader community. Supanfai (2017) elucidated that Louw's (1993) concept of semantic prosody involves “the transfer of positive or negative meaning” (p. 65).

The third perspective on semantic prosody was proposed by Stubbs (1995, 2001), which can be divided into two chronological eras according to Supanfai (2018). The first era emphasizes word's collocations. Supanfai (2017) pointed out that, in Stubbs's (1995) perspective, if a word commonly appears with positive collocates, the word itself seems to have a positive semantic prosody. Conversely, if its collocates are mostly negative, the word has a negative semantic prosody. For example, Stubbs (1995) revealed that the word *cause* tends to occur with negative collocates, such as *cause of the trouble* and *cause of death*, indicating a negative semantic prosody. In contrast, *provide* often appears with positive collocates such as *protection* and *security*, indicating a positive semantic prosody.

Stubbs (2001) later suggested the term *pragmatic prosodies* to replace semantic prosody as he argued that the term pragmatic prosodies can keep the distinction between semantics and pragmatics as semantics is related to aspects of meaning that are independent of the speaker, while pragmatics is concerned with the speaker's attitude. Stubbs (2001) proposed the term *discourse prosody* to maintain the relationship between speakers and interlocutors, while also accounting for the notion of functions in creating “discourse coherence” (p. 66). The term *discourse prosody* refers to “descriptor of speaker attitude and discourse function” (Stubbs, 2001, p. 88.)

The fourth concept of semantic prosody was proposed by Partington (1998), who grounded the concept of semantic prosody in connotations. Supanfai (2018) pointed out that Partington's concept of semantic prosody can be divided into two stages. The first stage, as Partington (1998) suggested, involves the connotation of a word being expressed in association with its collocates. For example, the word *commit* tends to have an unfavorable connotation because it often collocates with terms related to negative actions or events. Later, Partington

(2014) criticized the existing terms, prosodic meaning, semantic prosody, discourse prosody, pragmatic prosody, and emotive prosody, arguing that they are problematic due to their complications.

Partington (2014) coined the term *evaluative prosody*, asserting that the study of prosodic meanings can be concluded in four ways. Firstly, evaluative prosody enables the explanation of “a node’s inherent potential to participate in evaluative interaction with other items of similar polarity” (Partington 2014, p. 283). That means an item (word) can be described as having a positive or negative prosody when it occurs in discourse, realized by its collocates. Secondly, this term is concerned with how a word connects with others that carry a similar evaluative tone. Thirdly, it also referred to as “a community of speakers’ shared intuitive knowledge of how to use a particular item in conjunction with others of similar polarity in order to maintain evaluative harmony when speaking or writing” (Partington, 2014, p. 284). Finally, this terminology emphasizes that the community of speakers has gained this shared knowledge by frequently encountering a word together with other words of a similar positive or negative tone. In other words, the recurring co-occurrences of collocates are not due to chance but a meaningful connection. Despite the introduction of the new term *evaluative prosody*, it is not different from semantic prosody. Supanfai (2018) argued that it emphasizes his view of semantic prosody as part of the broader concept of evaluation, focusing on individual co-occurring items that are either positive or negative.

More recently, Grabowski and Trklja (2024) conceptualized semantic prosody as “a multi-faceted phenomenon that involves not only collocational relations but also the interaction between lexical items and the situational and communicative contexts of language use” (p. 90). That is to say, the concept of semantic prosody is not only related to a word’s collocates but also to its neighboring linguistic environments. This supports Supanfai (2018), who argued that semantic prosodies can be determined based on different methodological approaches.

Despite the fact that there are diverse perspectives regarding semantic prosody, I would argue that what remains clear is that semantic prosody plays a crucial role in understanding how a word or phrase is associated with other words to convey meanings in discourse. What is even clearer is that semantic prosody is concerned with the fact that the semantic profile of words can be shaped by the words they commonly co-occur with (Hauser & Schwarz, 2023). An analysis of the semantic prosody of a word can contribute to our comprehension of both written and spoken discourse.

### 2.2.3 Previous Studies on Semantic Prosody

Al-Otaibi (2022) analyzed the semantic prosodies of 24 commonly used reporting verbs by examining their adverb collocates, drawing on Sketch Engine for Language Learning (SkELL) and Corpus of Contemporary American English (COCA). Al-Otaibi (2022) also argued that *suggest* and *indicate* tend to collocate with positive adverbs, indicating the positive semantic prosody. One noteworthy study with a comprehensive methodological approach to semantic prosody is Supanfai (2018), who integrated two approaches to analyze semantic prosody into her study. The first approach, the polarity-oriented approach, focuses on individual collocates of each word, following Louw, Stubbs, and Partington. The second approach, the EUM-oriented approach (extended unit of meaning), places emphasis on pragmatic meanings of a word in context. The former is restricted to a positive, negative, or

neutral semantic prosody, while the latter presents pragmatic meanings within a specific context.

In my study, I would argue that following the polarity-oriented approach is suitable for yielding insights into the semantic prosody of each of the lexical verbs as hedging devices in research article abstracts for several reasons. This approach makes it possible to delve into not only collocates of the target hedging devices but also their neighboring phenomena through concordance lines. As suggested by Supanfai (2018), it is suitable to examine “a word’s tendency to appear in an evaluatively positive or negative context” (p. 115), especially for evaluation in discourse. Given that the main pragmatic function (i.e., to tone down the claim) of the target words in the current study is already known in Research Question 1, the EUM-oriented approach is unlikely to work well for analyzing semantic prosody in my study. As the target words must serve as epistemic lexical verbs as hedging devices in the analysis, the polarity-oriented approach is more suitable.

### 2.3 The Context of the Study

In the context of Thailand, recent years have witnessed a growing trend in the publications of research in applied linguistics, after the inclusion of local journals in Scopus. According to Phoocharoensil (2022), Scopus is a reliable and high-quality peer-reviewed database for researchers to disseminate their articles for academic promotion, graduation, and improving university rankings.

Among Scopus-indexed journals that publish applied linguistics articles in Thailand, this study focuses on the three Thai journals: *LEARN Journal: Language Education and Acquisition Research Network* (hereafter *LEARN*), *PASAA: A Journal of English Language Teaching and Learning in Thailand* (hereafter *PASAA*), and *rEFlections*. While some journals, such as *ABAC Journals*, and *Kasetsart Journal of Social Sciences*, also welcome applied linguistics research articles, they accept a broader range of manuscripts, rather than focusing on applied linguistics. Another reason is because the three journals have been indexed in Scopus since 2019 (*LEARN* and *PASAA*) and 2020 (*rEFlections*) and have published a number of applied linguistics articles.

## 3. Methodology

### 3.1 Corpus Compilation

I proposed to compile 100 research article abstracts from each of *LEARN*, *PASAA*, and *rEFlections*. Firstly, for corpus compilation, I manually copied all the abstracts of the three journals in the Scopus database. Each of the chosen abstracts was saved as a .TXT file, which is compatible with AntConc 4.3.1 (Anthony, 2024), a corpus analysis application used for analyzing hedges, the word’s collocates, and concordance lines.

Secondly, I labeled all abstracts available in the Scopus database: 1-287 for *LEARN*, 1-137 for *PASAA*, and 1-138 for *rEFlections*.

Thirdly, 100 abstracts were randomly selected from each of the three journals to ensure an unbiased sample and to maintain a balanced corpus across the three journals. Therefore, the corpus consists of a total of 300 abstracts, which could capture the current publication trends in the Thai context from 2019 to 2024.

**Table 1***The Number of Texts Compiled*

Journal	Number of articles available	Number of abstracts chosen	Total number of abstracts in the corpus
<i>LEARN</i>	287	100	300
<i>PASAA</i>	137	100	
<i>rEFLectiions</i>	138	100	

Table 1 above presents the number of research articles published in the three target journals, the number of the chosen abstracts, as well as the total number of abstracts included in the corpus as of the data collection date in 2024.

### 3.2 Data Analysis

Figure 1 below presents the brief steps of data analysis for RQs 1 and 2. To address RQ 1, I employed AntConc 4.3.1 to identify all the hedges (including their lemmas such as *feel*, *felt*, and *feels*) in the corpus using the Word Function. The list of hedges proposed by Hyland (2005) was utilized as a pre-determined set of hedging devices. This taxonomy was derived from a large corpus comprising millions of words across various disciplines, including applied linguistics.

**Figure 1***The Steps of the Data Analysis Process*

RQ 1: Identification of the list of epistemic lexical verb as hedging devices in the corpus

- Identifying hedging devices following Hyland's (2005) taxonomy using the Word function in AntConc
- Conducting discourse-analytic procedures (Hyland, 2017, 2023) using the KWIC function in AntConc



RQ 2: The analysis of semantic prosody of epistemic lexical verbs as hedging devices in the corpus, drawing on the findings of RQ 1

- Employing the polarity-oriented approach following Supanfai (2018), using the Collocate function in AntConc

Then, each identified hedging device was carefully examined using the KWIC (Key Word in Context) function, following Hyland's (2017, 2023) discourse-analytic procedures to ensure each functioned as a hedge through concordance lines before analyzing their semantic prosodies.

For RQ 2, drawing on the results from RQ 1, the identified epistemic lexical verbs as hedges were used as target nodes to analyze their semantic prosody using the polarity-oriented approach (Supanfai, 2018). The analysis focused on a four-word span both to the left and right of each target epistemic lexical verb using the Collocate function in AntConc.

Given that the focus of this study is particularly on discourse phenomena in research publications within the Thai context, statistical measurements were not employed, as Tribble

(2000) noted, “words in certain genres may establish local semantic prosodies which only occur in these genres, or analogues of these genres” (p. 86). This study, therefore, reported on the collocates of each node without relying on statistical measures to capture the specific ways writers employ epistemic lexical verbs as hedges in research article abstracts, delving into a rich and contextually oriented understanding of semantic prosody.

For classifying collocates as having a positive, negative, or neutral semantic prosody, the criteria proposed by Supanfai (2018) were adopted. These criteria are based on the proportion of each word’s positive, negative, and neutral meanings. If the proportion of positive collocates to negative collocates or vice versa is at least three times greater, the word is considered to have a clear positive or negative semantic prosody. If the proportion is less than 70%, she suggested that the target word does not exhibit a clear positive or negative semantic prosody. In contrast, if more than 70% of the collocates are neutral, the word can be classified as having a neutral semantic prosody, regardless of the threefold difference between positive and negative proportions.

#### 4. Results and Discussion

This section reports on the epistemic lexical verbs as hedging devices identified in the corpus of 300 research article abstracts in Sub-section 4.1 and the semantic prosody of each of the verbs in Sub-section 4.2, respectively.

##### 4.1 Epistemic Lexical Verbs as Hedging Devices

To answer RQ 1, the corpus of 300 research article abstracts was analyzed. The total number of lexical verbs identified as hedging devices was 196 out of 57,590 running words. They were categorized into four types: speculative, quotative, sensory, and deductive, as seen in Table 2 below. Among the 10 epistemic lexical verbs identified, the top five most frequently used were *suggest*, *indicate*, *appear*, *tend to*, and *seem*, respectively. These findings support the findings of Holmes (1988) and Skelton (1988), who identified *seem*, *appear*, *suggest*, *indicate*, and *assume* as the five most common lexical verbs. The possible explanation might be that the first two most identified ones in the corpus *suggest* and *indicate* are speculative verbs that applied linguists employ as tentative verbs to present a subjective claim rather than an objective one.

**Table 2**

*Epistemic Lexical Verbs as Hedging Devices Identified*

No.	Words	Types	Frequency
1	suggest	speculative/quotative	76/2
2	indicate	speculative	58
3	appear	sensory	20
4	tend to	sensory	16
5	seem	sensory	14
6	feel	sensory	6
7	claim	speculative	1
8	assume	deductive	1

9	estimate	deductive	1
10	suppose	deductive	1
Total			196

The current findings indicated that the speculate and sensory hedges were commonly used, given that the use of lexical verbs as hedging devices is crucial in academic writing not only to convey uncertainty and tentativeness but also to protect writers from taking direct personal responsibility for their claims (Hyland, 1994, 1996). The use of hedging also plays a crucial role in academic discourse, as it helps demonstrate that writers are not only cautious in presenting information but also open to argument (Hyland, 2023). Based on the analysis of my corpus, the most frequently used speculative lexical verbs included *suggest*, *indicate*, and *claim*. These verbs enable writers to present findings as tentative and open to interpretation. Not only do they mitigate writers' assertions, but they also reduce the risk of overcommitting to their conclusions.

Excerpt (1) below demonstrates the use of the verb *suggest*. This speculative lexical verb serves to mitigate the claim by presenting it as the writer's opinion, which softens the assertion and leaves room for alternative interpretations. In Excerpt (1) below, as the findings are based on qualitative data, which is subjective in nature, the abstract writer employs a speculative verb *suggested* to present the claim cautiously.

- (1) However, qualitative findings *suggested* that even though teachers may display high awareness and empathy towards cultural diversity...

The evidence revealed that *suggest* and *indicate* were the two most frequently employed epistemic lexical verbs, highlighting the fact that applied linguists tend to present their claims with speculative judgments to mitigate the strength of their assertions. This type of epistemic lexical verbs as hedging devices is used by writers to negotiate with their readers that the claims are reported based on their subjective opinions. My findings echo Dontcheva-Navratilova (2018), who found that linguists tend to employ "speculative judgments to modulate their claims" (p. 162).

The second type of lexical verb used as a hedging device identified was the deductive, used to moderate claims based on inferential reasoning or previous knowledge (Vass, 2017). In my corpus, the deductive lexical verbs identified included *suppose*, *assume*, and *estimate*, each of which appeared only once. Excerpt (2) below demonstrates that the verb *suppose* is employed to present reasoning for the claim, based on known facts rather than the writer's personal belief or certainty (Vass, 2017). In addition, the deductive epistemic lexical verb *suppose* functions as a hedging device is used by the abstract writer to indicate that the researchers' claim in this context is based on previously established knowledge, that is, *mixing mutually exclusive 'quantitative' and 'qualitative' paradigms*.

- (2) ...this can be problematic as researchers *suppose* this implies mixing mutually exclusive 'quantitative' and 'qualitative' paradigms.

The use of deductive epistemic lexical verbs as hedging devices allows writers to reference the claim to the existing knowledge or theory or known facts (e.g., Dontcheva-Navratilova, 2018; Hyland, 1998; Vass, 2017).

The next type of lexical verb was the quotative, used to mitigate their claims with evidential references (Hyland 1998; Vass, 2017). In my corpus, the only quotative lexical verb identified was *suggest*, which appeared rarely (2 occurrences). Writers use it to refer to available sources (Hyland, 1998; Vass, 2017). The function of *suggest* is to present the claim as derived from previous studies, specifying the sources that support the claim (Hyland, 1998).

What is more, *suggest* was found to function not only as a speculative but also as a quotative hedging device, which is consistent with Vass (2017), who also found that *suggest* can be used in either role in written legal discourse. Excerpt (3) below shows that *suggest* is employed by the abstract writer as a quotative hedging device to acknowledge findings from previous research (Hyland, 1998; Vass, 2017).

- (3) Previous studies (Khumphee & Yodkamlue, 2017; Owu-Ewie & Williams, 2017; Richard & Renandya, 2002) *suggest* that a lack of sufficient cognitive and rhetorical skills for generating ideas and producing coherent compositions can be one of the challenges faced by learners.

As seen in Excerpt (3) above, the verb *suggest* is employed to “indicate that second-hand information is being presented” (Vass, 2017, p.19). In other words, the abstract writer draws on previous studies, that is, (*Khumphee & Yodkamlue, 2017; Owu-Ewie & Williams, 2017; Richard & Renandya, 2002*), as a secondary source. This quotative epistemic lexical verb allows writers to present their claims by using external available related research studies, thereby avoiding their commitment.

The last type of lexical verb used as a hedging device was the sensory. In my corpus, there were only four sensory verbs identified: *appear*, *tend to*, *seem*, and *feel*. The epistemic nature of these sensory lexical verbs is evident in their ability to enable writers to present their claims as sensory observations rather than assertive statements (Hyland, 1998). These verbs reflect the mental processes, judgments, or beliefs of writers, as in Excerpt (4) below.

- (4) Furthermore, four sources of efficacy information *appeared* to influence the Indonesian non-ELT pre-service teachers’ self-efficacy to teach in the Thailand EMI context

As seen in Excerpt (4) above, the verb *appeared* is placed after the noun phrase *four sources of efficacy information*, allowing the abstract writer to signal that the claim is based on their sensory evidence rather than definitive certainty through the use of the verb *appeared*.

#### 4.2 Semantic Prosody of Epistemic Lexical Verbs Identified

This section reports on the results and discussion of RQ 2, which investigated the semantic prosody of the ten epistemic lexical verbs as hedging devices in my corpus.

**Table 3***Collocates and Semantic Prosody of Each of the Epistemic Lexical Verbs as Hedging Devices*

No.	Words	Collocates	Semantic prosody
1	suggest	also, design, findings, investigation, Petricrew (proper name), protocol, results, Robert, Schwartz & spouse (proper name), strategy, these, we	neutral
2	indicate	figures, findings, meaning, results, studies, synonym	neutral
3	appear	acknowledgment, adverb, conventional, contradict, divergent, environment, give, guidelines, halt, inadequate, intensity, mainstream, manifestation, often, pressure, redundancy, representative, sharing, talk, unpleasant	neutral but found in a negative situation
4	tend to	academic, adaptation, assign, ask, cooperative, extensive, favor, heighten, leniently, literal, medicine, original, precise, rate, retaining, same, share, texts, textbook, tourism, translation, utterance, wide	neutral but found in a positive situation
5	seem	autonomous, best, border, correspond, difficulty, embrace, engineering, intuitive, mastering, principal, prism, raise, significant, students, TPACK, undergraduate	neutral but found in both negative and positive situations
6	feel	apprehension, comfortable, confident, influence, limited, majority, readers, readers, salespersons, themselves, way	neutral but found in both negative and positive situations
7	claim	we, study	neutral
8	assume	way	neutral
9	estimate	analysis, predict, regression, significantly, using	neutral
10	suppose	imply, mixing, researcher	neutral

Table 3 above illustrates the findings regarding the semantic prosody of each verb. To elaborate in detail, the results are presented verb by verb, followed by discussion.

### **Suggest**

Drawing on the 78 instances of *suggest* identified in my corpus, most of its identified collocates were neutral and were research-related words. They can be classified into two types based on their semantic preference: subjects of the verb, including proper names, i.e., *Schwartz & Sprouse*, and personal pronouns, i.e., *we*; and research-related terms, including *design*,

*protocol, findings, and results.* The evidence from my corpus revealed no clear negative or positive semantic prosody for *suggest*, indicating that it could be considered to have a neutral semantic prosody. This contrasts with Al-Otaibi (2022), who found that *suggest* collocates with positive adverbs such as *strongly* and *clearly*. This might be because Al-Otaibi's (2022) analysis focused specifically on adverbial collocates, whereas my corpus focused on all the collocates from various parts of speech.

Excerpt (5) below demonstrates an example where *suggest* collocates with *results* in a neutral expression, indicating its neutral semantic prosody.

(5) The *results* of the MFRM also *suggested* the need for rater training.

### **Indicate**

*Indicate* was found 58 times in my corpus with 22 collocates. The collocates, i.e., *figures, findings, meaning, results, studies* and *suggested* a neutral semantic prosody. Most of them were words that are commonly associated with reporting academic and research findings, while *meaning* and *synonyms* were the research-related terms being presented. Excerpt (6) below displays how *indicate* functions as a speculative epistemic lexical verb in a neutral tone when collocating with *findings*.

(6) The *findings indicate* that discourse strategies are ideologically used on the Bangkok Post website...

As the analysis revealed, *indicate* exhibited a neutral semantic prosody. This can be explained by the function of the word, which serves as an epistemic verb used to tone down the strength of claims with speculative judgments. Therefore, *indicate* leaned toward a neutral semantic prosody, allowing writers to present information in a cautious and non-committal manner.

While Al-Otaibi (2022) argued that *indicate* has a positive semantic prosody, my analysis suggested that *indicate* did not exhibit either a positive or negative semantic prosody, indicating its neutral semantic prosody. This might be due to the different contexts of the corpora used. While Al-Otaibi (2022) drew on large-scale corpora: Sketch Engine for Language Learning (SkELL), the Corpus of Contemporary American English (COCA), my study consists of only 300 abstracts. Additionally, Al-Otaibi's data includes a variety of text types, whereas my corpus is limited to the abstract section of applied linguistics research articles. This inconsistency in the semantic prosodies of *suggest* and *indicate* between Al-Otaibi's (2022) findings and those of my study may reflect differences in genres, disciplinary norms, and methodological scope. Partington (2004) suggested that the semantic prosody of a word may vary across different genres and contexts.

### **Appear**

*Appear* was identified 20 times in my corpus. It co-occurred with a variety of collocates. Among its 20 collocates, unfavorable conditional words, including *inadequate, redundancy,* and *unpleasant* suggested that this verb can be used to describe negative or undesirable situations. Excerpt (7) below demonstrates that *appear* can function in a context of uncertainty

as a sensory hedging device when it collocates with *inadequate*, which means that *appear* can be used in a negative context.

- (7) ...the guidelines provided by universities *appear* to be *inadequate* to support students...

While most collocates of *appear* seemed to exhibit a neutral semantic prosody, only three collocates exhibited a negative semantic prosody. As a sensory hedging device, it can be claimed that *appear* had a neutral semantic prosody but could be used in a negative situation to present a claim using sensory perceptions in reporting claims.

### **Tend to**

*Tend to* was identified 14 times with 23 collocates in my corpus. This hedging device was commonly used with neutral collocates, indicating a neutral semantic prosody. However, it appeared in a favorable context, as illustrated in Excerpt (8) below.

- (8) Of 342 directive utterances, the characters *tend to favor* both [H] and (S) oriented structures with more preference toward Single[H] and (S)+[H] structures.

This sensory hedging allows writers to claim their findings with a neutral semantic prosody as a tendency rather than a full assertion (Abdollahzadeh, 2019). As seen in Excerpt (9) below, *tend to* collocated with *occurrences*, illustrating a neutral semantic prosody.

- (9) ...they *tend to* have quite different *occurrences* and distributions across genres...

### **Seem**

*Seem* was found 14 times. Among the collocates, *difficulty* indicated a negative meaning, while the rest, including *autonomous*, *broader*, *correspondence*, *engineering*, *principal*, *prism*, *students*, *TPACK*, and *undergraduate* appeared to be neutral. Given that the majority of the collocates exhibited a neutral semantic prosody, *seem* was found to have a neutral semantic prosody but could be used in both positive and negative contexts. Excerpt (10) below demonstrates how *seem* is used with *difficulty*, which is a negative collocate.

- (10) Thai undergraduate engineering students *seem* to have *difficulty* mastering English oral communication ability.

In contrast, *seemed* was also found to co-occur with a positive collocate *embrace* as in (11) below.

- (11) These five books *seemed* to *embrace* much broader multicultural content...

### Feel

Among the six occurrences of the word *feel* identified, it was found that this sensory epistemic lexical verb was collocated with three positive words, two negative words, and one neutral word, making its semantic prosody unclear. Therefore, *feel* had a neutral semantic prosody. Excerpt (12) exemplifies a positive linguistic environment where the verb *felt* precedes the adjective *confident*.

(12) The result of the questionnaire reveals that the majority of the students *felt confident* when they presented their outlines.

Excerpt (13) below also demonstrates a negative linguistic environment when the verb *felt* is followed by *limited*.

(13) The study found that students *felt* their *limited* academic writing skills and language problems hindered their ability to write.

### Assume/Claim/Estimate/Suppose

As the verbs *assume*, *claim*, *estimate* and *suppose* were found only once in my corpus, it was difficult to determine their semantic prosodies. Therefore, they were presented as a group, which makes it easier to demonstrate the use of them identified in my corpus. What can be revealed is how each verb is used in a context. The analysis suggested that these four verbs function as hedging devices to tone down the claim in a neutral linguistic environment.

As a speculative epistemic lexical verb, *claim* co-occurs with *we*, suggesting the writer's stance in making a statement in a neutral tone, as illustrated in Excerpt (14) below.

(14) *We* can *claim* that teaching students' self-regulation strategies at early ages can back up their educational development and language learning.

The deductive verbs *assume*, *estimate* and *suppose* were all found to be used in a neutral linguistic environment, as illustrated in Excerpts (15), (16), and (17) below. For example, the verb *assumed* was collocated with the noun *way* in a neutral linguistic environment, as seen in Excerpt (15).

(15) ...but most of them were not constructed in the *way assumed* in CARS...

(16) ...and then analyze *using regression analysis* to *estimate* if EPT *significantly* predicted GPA...

(17) ...*researchers suppose* this *implies mixing* mutually exclusive 'quantitative' and 'qualitative' paradigms.

The analysis of the semantic prosodies of each of the ten epistemic lexical verbs identified in my corpus raises several points for discussion. Based on their collocates, the ten epistemic lexical verbs as hedging devices exhibited a neutral semantic prosody. Despite having a neutral semantic prosody, the evidence of concordance lines revealed that certain ones can be collocated with negative and/or positive linguistic environments.

Concerning the categories of epistemic lexical verbs, the speculative verbs, i.e., *suggest*, *indicate*, and *claim*, the quotative verb, i.e., *suggest*, and the deductive verbs, i.e., *assume*, *estimate*, and *suppose* were only found in neutral linguistic environments. However, despite exhibiting a neutral semantic prosody, sensory epistemic lexical verbs demonstrated flexibility in their use. On the one hand, *appear* was found in a negative context, while *tend to* appeared in a positive situation. On the other hand, both *feel* and *seem* occurred in both positive and negative contexts. This highlights the role of sensory epistemic lexical verbs in reflecting researchers' sensory perceptions or hearsay when they present their claims cautiously.

The findings are also in line with Stewart (2010), who claimed that identifying positive or negative semantic prosody is uncommon when the target word does not explicitly carry a positive or negative meaning. Another possible explanation could be the differences in methodological approaches. For instance, *happen* and *occur* were both found to exhibit a negative semantic prosody by Partington (2004), which may stem from differences in the criteria used for determining semantic prosody. Supanfai (2017) argued that previous studies on semantic prosody tended to overlook the actual distribution of neutral environments for a word, as they focused on either negative or positive environments.

The current findings revealed that the ten epistemic lexical verbs as hedging devices in my corpus tended to lean toward neutrality, indicating a neutral semantic prosody. This is consistent with Samraj (2002), who found that abstract writers across different disciplines prefer a neutral stance rather than expressing strong agreement or disagreement. The findings also support Hyland (2005, 2023), who claimed that the role of hedging is to allow writers to present information without full commitment to the claim. However, the concordance lines in my corpus also revealed that when the writers wish to present their claims in either a positive or negative way, sensory epistemic lexical verbs as hedging devices can be used.

## 5. Conclusion

For Research Question 1, drawing upon a corpus of 300 research article abstracts from three journals, the analysis revealed ten epistemic lexical verbs functioning as hedging devices. The most frequently employed epistemic lexical verbs were *suggest* and *indicate*, highlighting that applied linguists employ a speculative epistemic lexical verb to hedge when negotiating their claims within the discourse community. Sensory verbs, i.e., *appear*, *feel*, *seem*, and *tend to*, highlight the role of sensory perception in reporting claims in the field of applied linguistics. Meanwhile, deductive verbs, such as *assume*, *estimate*, and *suppose*, and the quotative verb, i.e., *suggest*, were rarely used. The findings indicated that applied linguists mostly soften their claims by presenting them as speculative opinions. While it is possible to assert claims through sensory perception, researchers also rely on previous studies to support their arguments with hedging strategies to maintain academic caution and credibility within the discourse community.

For Research Question 2, the semantic prosody analysis using the polarity-oriented approach sheds significant light on how each epistemic lexical verb is used within this discourse community. The findings suggested that the epistemic lexical verbs as hedging devices identified exhibited a neutral semantic prosody. Even though they all seemed to have a neutral semantic prosody, *appear* was found in negative environments to describe uncertainty in academic discourse while *feel* and *seem* were used in positive, negative, and neutral contexts. That is to say, the findings of this study are in accord with Hauser and Schwarz (2023), who

argued that semantic prosody is not an inherent feature of words but is instead shaped by the discourse context. This might be the reason why the current findings are in contrast with Al-Otaibi (2022).

While the small corpus size hinders a more comprehensive generalization, making it difficult for broader conclusions about the semantic prosody of the identified epistemic lexical hedging devices, the current study sheds light on the discursive phenomenon of academic discourse in Thai homegrown international applied linguistics journals. That is to say, the current findings yield insights into how each of the epistemic lexical verbs as hedging devices is employed in order to mitigate the claims, reflecting local semantic prosodies of verbs used in the discourse community (Tibble, 2000).

In terms of pedagogical implications, since semantic prosody can be acquired incrementally (McGee, 2012), incorporating authentic contextual examples of the target verbs and their semantic prosodies can further enhance learners' awareness and understanding.

Abstract writers can draw on the current findings to enhance their awareness of semantic prosody for lexical choices in abstract writing, improving their chances of getting manuscripts published in these three Thai homegrown Scopus-indexed international journals.

## **6. Limitations and Future Research**

Due to the fact that the three selected journals in my corpus were first indexed in Scopus in 2019 for both *PASAA* and *LEARN* and in 2020 for *rEElections*, the number of research articles published is relatively small. Future research may wait for a longer period for a better representation of the data.

As semantic prosody can be influenced by the context in which a word is used, as suggested by Hauser and Schwarz (2023), future research may consider examining how epistemic lexical verbs function as hedging devices in abstracts from other academic disciplines or cultural settings.

## **7. About the Author**

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## **9. Declaration of AI Use**

The author declares that ChatGPT was used in preparation of this manuscript only for the sake of checking grammar and sentence structures. After using this tool, the author reviewed and edited the content as needed and takes full responsibility for the content of the publication.

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