

**EPISTEMIC MODALITY IN DOCTORAL THESES WRITTEN BY L1
AND L2 UNIVERSITY INDONESIAN STUDENTS: A CORPUS-BASED
STUDY OF APPLIED LINGUISTICS DISCIPLINARY**



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APPROVAL SHEET

Dissertation

**Epistemic Modality in Doctoral Theses Written by L1 and L2
University Indonesian Students: A Corpus-Based Study of Applied
Linguistics Disciplinary**

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Dengan ini saya melimpahkan hak cipta dari karya tulis saya berupa disertasi ini kepada Universitas Hasanuddin.

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ABSTRACT

NUR INA SYAM. *Epistemic Modality in Doctoral Theses Written by L1 And L2 University Indonesian Students: A Corpus-Based Study of Applied Linguistics Disciplinary* (Supervised by Hamzah A. Machmoed, Ria Rosdiana Jubhari, M. Amir P).

Epistemic modality is an essential linguistic feature in academic writing. However, it is complex for writers, especially non-native writers, to use it appropriately. This study investigates the use of epistemic modality in applied linguistics theses written by Indonesian doctoral students at English-native universities compare to who are at Indonesian national universities. Using a corpus-based methodology, this study focuses on the use of epistemic markers in terms of frequency, value, orientations, as well as the function of the markers. This study also seeks for other potential epistemic markers which are not yet listed in this study. The results show that 1) Indonesian doctoral students at English-native universities employ more epistemic markers compare to who are at Indonesian universities, 2) Epistemic markers produce by Indonesian students at English-native universities were found to be weaker in terms of value compare to those who are at Indonesian universities, 3) Both group of writers mostly rely on the implicit subjective of epistemic orientation, 4) the students strategically navigate the epistemic markers to communicate their degree of confidence, assert findings, and acknowledge the nuanced nature of research, 5) some other markers that might have not been explored are also identified, as the followings: concretely, signal, potentially, reasonable, and prove. In conclusion, this comprehensive study contributes valuable insights into the use of epistemic modality in academic writing by Indonesian doctoral students. The findings not only highlight differences between students at English-native and non-native universities but also emphasize the dynamic nature of language, showcasing its ability to evolve and express nuanced perspectives over time.

Keywords: epistemic modality, academic writing, Indonesian students, applied linguistics, corpus-based study



ABSTRAK

NUR INA SYAM. *Modalitas Epistemik dalam Disertasi yang Ditulis oleh Mahasiswa Indonesia di Universitas Luar dan Dalam Negeri: Kajian Berbasis Korpus dalam Disiplin Linguistik Terapan* (dibimbing oleh Hamzah A. Machmoed, Ria Rosdiana Jubhari, dan M. Amir P.)

Modalitas epistemik adalah fitur linguistik yang penting dalam penulisan akademis. Namun, ini merupakan hal yang rumit bagi penulis terutama penulis *nonnative* untuk menggunakannya dengan tepat. Penelitian ini bertujuan menyelidiki penggunaan modalitas epistemik dalam disertasi linguistik terapan yang ditulis oleh penulis doktoral Indonesia di universitas-universitas berbahasa Inggris dibandingkan dengan penulis doktoral Indonesia di universitas-universitas nasional. Dengan menggunakan metodologi berbasis korpus, penelitian ini berfokus pada penggunaan penanda epistemik dari segi frekuensi, nilai, orientasi, serta fungsi penanda tersebut. Penelitian ini juga mencari penanda epistemik potensial lainnya yang belum tercantum dalam penelitian ini. Hasil penelitian menunjukkan bahwa 1) mahasiswa doktoral Indonesia di universitas berbahasa Inggris menggunakan lebih banyak penanda epistemik dibandingkan dengan mahasiswa yang berada di universitas nasional, 2) modalitas epistemik yang digunakan oleh mahasiswa Indonesia di universitas berbahasa Inggris cenderung menggunakan epistemik yang lemah dibandingkan dengan mahasiswa yang berada di universitas nasional, 3) kedua kelompok mahasiswa sebagian besar bergantung pada subjektivitas implisit dari orientasi epistemik, 4) mahasiswa secara strategis menavigasi penanda epistemik untuk mengomunikasikan tingkat kepercayaan diri mereka, menegaskan temuan, dan mengakui sifat penelitian yang bernuansa, dan 5) beberapa penanda lain yang mungkin belum dieksplorasi juga diidentifikasi, antara lain *concretely*, *signal*, *potentially*, *reasonable*, dan *prove*. Sebagai kesimpulan, penelitian komprehensif ini memberikan wawasan yang berharga mengenai penggunaan modalitas epistemik dalam penulisan akademis oleh mahasiswa doktoral Indonesia. Temuan ini tidak hanya menyoroti perbedaan antara mahasiswa di universitas yang berbahasa Inggris dan yang tidak berbahasa Inggris, tetapi juga menekankan sifat dinamis bahasa yang menunjukkan kemampuannya untuk berkembang dan mengekspresikan perspektif yang berbeda dari waktu ke waktu.

Kata kunci: modalitas epistemik, tulisan akademis, mahasiswa Indonesia, linguistik terapan



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LIST OF ABBREVIATIONS

- EADJ: Epistemic Adjective
EADV: Epistemic Adverb
EAP: English for Academic Purposes
EFL: English as a Foreign Language
ELV: Epistemic Lexical Verb
EM: Epistemic Marker
EMV: Epistemic Modal Verb
EN: Epistemic Noun
MM: Modality Marker
NNS: Non-native Speaker
NS: Native Speaker
RA: Research Article
SFG: Systemic-Functional Grammar
SFL: Systemic-Functional Linguistics
TGG: Transformational Generative Grammar
L1 Universities: Native English universities
L2 Universities: Non-native English/Indonesian universities

CHAPTER I

INTRODUCTION

1.1. Introduction to the study

In the last decades, English has become the de facto language of science. Even though precise arguments are difficult to establish, it is undoubtedly acceptable that the publication of scientific research is exponentially increasing due to its prominent role in the scientific community. Almost all activities in science use English as a medium of communication (Drubin & Kellogg, 2012). Throughout history, English has gained a status as a universal form of communication that allows better understanding among researchers since decades ago (Baldauf & Jernudd, 1983; Gibbs, 1995; J. Swales, 2014; J. M. Swales, 1996)

The extent of the phenomena is implausible. How English, which is only spoken by roughly 13% of the world population, is widely used as the language of research around the world. Gordin & Tampakis (2015) in his book, explores the history of language and science and points out that it was never given that English would dominate science. In the 20th century, the rise of English was due to a number of factors behind this dominance. Geopolitically, the collapse of the Soviet Union was the factor that led to the influence of the United States of America arising and English gain recognition as the language of the world. The end of the cold war also caused a series of phenomena that changed the world, including English, that superseded the pre-war dominance of the German language.

The other factors concern researchers' needs in their careers. To become successful and recognized researchers, their works need to be read and cited as frequently as possible by other researchers. The advent of the Science Citation Index (SCI) in 1964 by Eugene Garfield has been stringent to achieve the goals. The standard of International and western research criteria has spread and put pressure on researchers. Accordingly, the number of papers published in the SCI has rapidly increased. These days, journal publishing has become a global industry that generates significant revenues annually. More journal publishers are established with their own indexing criteria; some are Google Scholar, Scopus, PubMed, EBSCO, and many more. More journal publishers, such as the top ten publishers by the number of the journal published: Springer Nature, Elsevier, Taylor & Francis, Wiley, SAGE, et Cetera. In 2017, out of 33,100 academic journals, the number of peer-reviewed English language journals was about

10,000. The latter journals published over 3 million articles. The annual growth rate in the published articles increased to 4% per year due to the rising number of publishing researchers, mainly from China and India. Therefore, the use of English as the language of international science is likely to continue growing.

For those reasons, researchers need extra effort to participate in the world research community. In addition, to gain command of the field, researchers also must be able to report professionally in standardized written English to communicate their science. This is unavoidable that English as a language of science and technology will continue, but as we know from past experience, this situation could very well change again. However, to avoid being left behind, it would be wise to take advantage of it because it will be beneficial in networking, knowing that more users of English join the international scientific community.

The fact that most research articles are written in English increases, and it is pivotal for researchers to be able to communicate in a common language used in reporting a study due to understand and contribute to the learning fields concerned. Researchers must follow current or updated research trends by reading journals or following seminar presentations. The researcher also needs to contribute by writing, publishing, or presenting a research report. Having a good level of communication in English help researcher to have better integration with the international research community. Therefore, it is essential to improve proficiency in 'Academic Writing'.

Academic writing is simply defined as writing done for academic purposes. It is getting a conversation with others (Graff & Birkenstein, 2010). However, how this conversation is constructed is different from how the conversation is in your everyday life. In other words, writing for academic purposes differs from writing for everyday social interactions with friends and family members (Wang, 2022). Academic writing involves expressing your ideas, but those ideas need to be presented as a response to some other persons or groups. They also need to be carefully elaborated, well supported, logically sequenced, rigorously reasoned, and tightly woven together.

Moreover, academic writing is not monolithic, meaning there is more than one kind or genre of academic writing. In academic settings, we write for many different purposes. We write letters, memorandums, reading responses, argumentative essays, technical reports, research articles, literature reviews, lab

reports, grant proposals, conference abstracts, policy briefs, PowerPoint presentations, commentaries, book reviews, editorials, blogs, emails, and many other text types. Each kind of academic writing has its own purpose, organizational structure, and linguistic features.

Academic writing is an important tool for academic learning and disciplinary practices. Nevertheless, many undergraduate and graduate students and early career scholars struggle with comprehending and composing. Academic and disciplinary texts. One primary source of this struggle is language. In other words, it is unfamiliarity with the language patterns of academic genres, above and beyond a lack of deep understanding of the topics to be written about, that contributes principally to the difficulties that students and scholars like you experience in writing for academic purposes.

Academic writing differs from everyday writing in many ways. Generally, academic writing is more formal, dense, abstract, objective, tightly knit, and rigorous. These features are what make a text more or less academic. They enable experts to engage in the advanced literacy practices of generalization, abstraction, definition, distillation, interpretation, and argumentation. As such, they are highly valued by the academic communities, and students and scholars are expected to demonstrate proficiency in understanding and use them in their writing.

Well-organized academic writing has three key features: Impersonality, formality, and objectivity. Academic language is often formal and should not be conversational or informal. A writer should avoid colloquialisms, idioms, slang, phrasal verbs, and journalistic terms because they frequently lead to misunderstandings. Academic discourse is frequently impersonal. This means that you are not required to identify yourself as the agent of activities. This requires omitting the pronouns "I," "you," and "us." Objectivity is another aspect of academic language. This indicates that it is objective, based on facts and evidence, and unaffected by personal feelings.

Academic writing communicates complex ideas in clear, logical, reasoned, and evidence-based ways. It is an advanced literacy task that requires a host of demanding skills. Learning to write for academic purposes involves learning, for example, how to contextualize your ideas and arguments in the existing scholarship of the field; how to synthesize, summarize, paraphrase, quote, source, and evaluate others' work; how to define and explain concepts; how to describe

things or processes; how to classify/categorize and compare/contrast things; how to agree or disagree with others' points of view; how to present examples and offer explanations; how to engage with opposing views; how to integrate visual images with the linguistic prose; how to acknowledge limitations and make recommendations; and how to connect sentences and link paragraphs.

In particular, a writer must write strategically to have a high level of objectivity. One common strategy often used is to employ a language feature of modality in the form of modality markers. For example, instead of writing "International schools are always elitist", it is considered writing "International schools are often elitist". This first sentence is an example of a judgemental sentence that may appear that the writer has made a final decision based on your pre-existing ideas, as opposed to a review of the relevant literature. At the same time, the latter shows a lower tone in terms of judgemental language. It is crucial to remember that opinions you have believed may be disproven in the future. Therefore, a writer should be cautious in writing an academic article.

Theoretically, a sentence/utterance consists of two major components: the core information and the speaker's attitude toward the sentence. The latter is defined as a linguistic modality. The notion of modality is defined and categorized by a number of experts in linguistics. (Palmer, 1990) proposes three basic semantic dimensions terms of epistemic, deontic, and dynamic. The other two basic notions have been reorganized in association with various terms. For instance, (Bybee & Fleischman (1995) have suggested the distinction between agent-oriented modality and speaker-oriented modality; (Coates, 1983, 1995), (Haegeman, 1983) and (Palmer, 1990) use the term root modality to cover both deontic and dynamic modality. For this study, the researcher focuses on epistemic modality.

Relating to academic writing, epistemic modality is stated to have an interpersonal function. This function expresses through rhetorical features which allow writers to interact with their readers to achieve persuasion, acceptance, and ratification from their readers. These rhetorical features are commonly expressed in terms of "Hedges and Boosters," as Hyland (1998:87) stated that "Hedges and Boosters are communicative strategies for increasing or reducing the force of statements". Furthermore, Hyland (1998:87) explains that boosters (e.g., clearly. Obviously, of course) "Allow writers to express conviction and assert a proposition with confidence, representing a strong claim about a state of affairs". On the other

side, hedges (e.g., possible, might, perhaps) "represent a weakening of a claim through an explicit qualification of the writer's commitment" Hyland (1998:88). However, in the present study, the term 'epistemic modality' as a rhetorical feature in academic writing considers to be a feature that covers hedges and boosters.

Epistemic modality discusses the various degrees of probability expressed in statements and propositions. While hedges and boosters make use of linguistic resources that fall within those degrees of probability, the use of the term 'epistemic modality' in this study allows for the inclusion of other epistemic devices on the continuum of probability that may not properly function either as a hedge or as a booster but which can be placed somewhere between these two epistemic functions. As such, the categories of epistemic modality; certainty (highest probability), probability (medial probability), and possibility (low probability); seem to better serve my purpose in this corpus-based study (Hyland & Milton, 1997; McEnery & Kifle, 2014).

However, such modalities used are effective only among the same cultural background. Carrio-Pastor (2014) believed that cultural background is a factor that causes the variation in expressing reality in a given language. To encode and decode others' attitudes or feelings, speakers should share the same emotion through the markers used in an expression. Among second language use of English speakers, this could be a problem. English may be misunderstood due to a lack of language competence. Consequently, intercultural communication will succumb to meaning because of the confusion carried out by the use of markers expressing their attitude.

Moreover, for second language users, learning modality may need a large amount of effort. On the other side, teachers should develop strategies for teaching modality. Effective teaching strategies are used to develop the student's interest in classroom activities and encourage them to learn and develop their ways of thinking habits. The teaching methods also show students how to do their tasks, and the teaching strategies also cover classroom activities. In fact, teaching strategies are used to enhance the classroom's learning and provide students with a meaningful learning experience.

Therefore, there is a sense of need for the study on epistemic modality that may provide theoretical, practical, and pedagogical implication.

1.2. Background of the study

This study investigates the use of epistemic modality in applied linguistics theses written by Indonesian doctoral students at universities in native English speaking countries (L1 universities) compare to who are at universities at non-native English speaking countries, in this case specifically refers to Indonesian national universities (L2 universities). The investigation used systemic functional approach which relates language structures to the function and the meaning of a language. Systemic functional linguistics, among others, provide different point of view through which the Indonesian writers' proposition in their theses can be analysed from the perspective of the "value" and "orientation" of epistemic modality.

Epistemic modality has been defined in many ways. According to Lyons (1977, p.793), "epistemic modality is concerned with matters of knowledge, belief, or opinion rather than fact". Coates (1983, p.18) contends that epistemic modality "is concerned with the speaker's assumptions or assessment of possibilities and, in most cases, it indicates the speaker's confidence (or lack of confidence) in the truth of the proposition expressed". Palmer (2001, p.8) regards epistemic modality as a subtype of "propositional modality" and suggests that "with epistemic modality speakers express their judgments about the factual status of the proposition." (Halliday et al., 2014) explains that epistemic modality refers to the likelihood of a proposition. No matter how epistemic modality is defined, it is widely accepted that epistemic modality indicates the addresser's judgment of the truth of the statement or proposition and his/her attitude toward the addressees.

Epistemic modality also has been studied from a great number of perspectives from philosophical to linguistic. In linguistics, most studies of epistemic modality focus on two aspects: its frequency and functions. Studies have shown that in written academic discourse, epistemic modality is widespread in sections analysing phenomena or setting backgrounds. Specifically, in research articles, both the discussion and the Introduction sections show a higher frequency of epistemic modality than the Methods and the Results sections (Hyland, 1994, 1995, 1996a; Skelton, 1988; Vihla, 1999). In Salager-Meyer's (1992, p.101) study, epistemic modality in medical research article abstracts was found to be "particularly frequent in the recommendation, the conclusion, and the data synthesis moves."

The frequency of epistemic modality has also been studied from a cross-disciplinary perspective. For instance, (Piqué-Angordans et al., 2002) found that research articles in health science, medicine, and biology mostly used epistemic modality. Vázquez & Giner (2008) compared the use of epistemic modality in marketing, biology, and mechanical engineering. Ngula's (2017) study discusses epistemic modal verbs as rhetorical markers of argumentation in Ghanaian scholars' research articles in the disciplines of Sociology, Economics, and Law. These studies shows that the use of epistemic markers varies across the field which depends on the nature of the disciplines.

Some studies also attempt to compare English-medium research articles written by Native speakers (NS) and Non-native speakers (NNS). (Khoshsima et al. (2016) conducted research that examines epistemic modality in English written by Anglo-American and Iranian writers in English and Iranian writers in Persian. Hu & Li (2015) compared the use of epistemic modality in argumentative essays written by English-native writers and Chinese writers. These studies show that the non-native writers tend to used less epistemic modality in their writing compare to native writers. In addition to the comparison of these two groups of writers, this study offers other comparison of two group of non-native English speakers in two different contexts. In this case, Indonesian writers who are at L1 universities compare to who are at L2 universities. This might other provide different perspective on how epistemic modality are employed in different context.

The underuse of epistemic markers by non-native writers might also existed in other academic text, not only in research article. This study investigates the use of modality in theses written by Indonesian students. These two types of documents are naturally different, although journal article also can be converted from theses. Not only the length of the text, (Rollnick (2023) pointed out that the purpose and format of a thesis or dissertation is very different from that of a journal article or book chapter. The primary audience for the thesis is the examiner, and the student needs to convince the examiner that they have mastered research techniques and understand the arguments they are making. This can make the thesis repetitive and full of detail. The wider audience for the article or book chapter will want to know about the arguments or findings and at the same time be convinced that the findings are authentic and trustworthy.

Expressing modal commitment and responsibility can be difficult enough for native speakers to understand and master, but for non-native speaking (NNS) academic writers preparing academic articles they pose a significant challenge due to multiplicity of meaning and complexity of functions (Cheng & Cheng, 2014). Studies have shown that in academic writing, NNS writers tend to employ fewer modal expressions and a relatively narrow range of linguistic devices, thus potentially leading to relatively inappropriate (usually more categorical) assertions (Chen, 2010; Gabrielatos & McEnery, 2005; Hyland & Milton, 1997).

Moreover, the context of the study also offers a chance of exploring epistemic markers that have not been studied. Every writer could express the same ideas in such different ways that the audience feel sympathy for the writer's position depending on the rhetorical strategies deployed. Language changes and linguistic variation can be observed in the same language (Charles, 2006; Freddi, 2015; I. Ozturk, 2007; Samraj, 2002, 2004), or even more if we contrast speakers with different linguistic background (P. de Haan & van Esch, 2015; Hinkel, 2009; J. R. Martin, 2003; Moreno & Suárez, 2008; Salager-Meyer et al., 2003; Schleef, 2009). In this case, Indonesian writers might have different interpretation in the way they use epistemic modality in their writing.

Given the interest in the epistemic markers used in thesis written by Indonesian writers and in how the writers employ epistemic modality, this study was conducted as a corpus-based study based on a corpus of 40 thesis (doctoral degree) in applied linguistics written by two groups of Indonesian writers, Indonesian writers who studied at English-native universities and the ones who studied at Indonesian universities.

1.3. Research questions

In order to realize the need for study, this thesis has answered the following questions:

1. To what extent are epistemic modality markers utilized in research theses written by L1 and L2 University Indonesian Writers?
 - a. What is the frequency of epistemic modality markers utilized in research theses written by L1?
 - b. What grammatical structures do these markers have?

- c. What are the frequency of values of epistemic modality utilized in research theses written by L1?
 - d. What are the frequency of orientations of epistemic modality utilized in research theses written by L1?
 - e. What is the frequency of epistemic modality markers utilized in research theses written by L2?
 - f. What grammatical structures do these markers have?
 - g. What are the frequency of values of epistemic modality utilized in research theses written by L2?
 - h. What are the frequency of orientations of epistemic modality utilized in research theses written by L2?
2. What function can be identified and analysed from the use of modality markers utilised?
 3. Are there any new markers discovered used by the writers in expressing epistemic stance?

1.4. Aims and Objectives of the research

1. To examine the extent of epistemic modality markers are utilised in research theses written by L1 and L2 University Indonesian Writers.
 - a. To examine the frequency of epistemic modality markers utilized in research theses written by L1.
 - b. To examine the grammatical structures of the epistemic markers research theses written by L1.
 - c. To examine the frequency of values of epistemic modality utilized in research theses written by L1.
 - d. To examine the frequency of orientations of epistemic modality utilized in research theses written by L1.
 - e. To examine the frequency of epistemic modality markers utilized in research theses written by L2.
 - f. To examine the grammatical structures of the epistemic markers research theses written by L2.
 - g. To examine the frequency of values of epistemic modality utilized in research theses written by L2.

- h. To examine the frequency of orientations of epistemic modality utilized in research theses written by L2.
- 2. To describe the function of modality markers utilised in research theses.
- 3. To find out whether or not there are new epistemic markers in expressing epistemic stance.

1.5. Scope of the study

This part confined the scope of this study to modality in research theses written by native and non-native speakers of English. The rationales are as follows:

1. There is a wide range of theoretical approaches to the study of modality, from the early studies which concern traditional modal logic (Jespersen, 1924; Rescher, 1968; von Wright, 1951) to Linguistic modality (Givón, 1982; Lyons, 1977; Palmer, 1990; Perkins, 1983; Searle, 1979). Moreover, the studies also propose various notions of epistemic modality. In fact, there has yet to be a clear cut of specific structures and patterns agreed upon among linguists to illustrate the categories of modality. Therefore, this study's notion of epistemic modality derives from the theory of epistemic modality in Systemic Functional Linguistics by (Halliday et al., 2014). The use of SFL is considered to take into account the research aims. They propose that SFL views language as a social semiotic resource people use to accomplish their purpose by expressing meaning in context. As (Halliday, 1978, p.10) points out, "the context of the situation is a theoretical construct for explaining how a text relates to the social processes within which it is located". Therefore, language must be studied in context, such as the context of formal written English used in the theses.
2. Moreover, SFL includes semantics and pragmatics. (Halliday, 1994) developed a theory of the fundamental functions of language. The SFL semantic component is construed as three metafunctions: ideational, interpersonal, and textual.
3. Academic articles are varied in type since they are written for different uses and purposes. This study is focused on research theses written by Indonesian students to fulfil their final requirement at universities. Moreover, this study only focuses on the result and discussion part of the theses.

4. The thesis samples written by Indonesian doctoral students at L1 and L2 universities were selected as the data source. L1 universities refers to universities that based in native English speaking countries and L2 universities refers to the ones that base in non-native English speaking country which is Indonesia in this case. The theses written by L1 university students can be seen as representative of authentic data on how epistemic modality is utilized in academic articles since it is obviously clear that a native/close-to-native is good at their language. On the other side, theses written by non-English country-based university are also crucial to reflect on what non-natives lack and need in using epistemic modality in academic writing.
5. This research is not a comparative analysis of epistemic markers between English and Non-native language, in this case, Indonesian. Instead, the comparison is between English-medium theses written by Indonesian students at English and non-English speaking country universities.

1.6. Significance of the study

This research hoped to contribute to the academic discourse community, especially in the EFL Indonesian context. Academic texts such as theses produced by Indonesian (Non-Native) writers have yet to be studied. Therefore, this work entails theoretical, practical, and pedagogical value.

Theoretically, it provides insight into how Indonesian writers of theses in the disciplinary field of applied linguistics utilize epistemic modality markers in their arguments in their research claims. This research can also serve as a helpful model for conducting data analysis. The corpus methods "can improve descriptive adequacy by adding a distributional dimension to the linguistic description" (Kennedy, 2002, p.89). Furthermore, it should also be evidence to revisit theoretical views such as those that say that non-native writers of academic text in English have real difficulties using features of academic discourse and that they often tend to underuse, overuse, or misuse these features. Overall, corpus-based inquiries have the descriptive power and the strength to contribute to linguistic theory.

Practically, this research also hoped to contribute to concrete beneficial use in Indonesian academics, especially in applied linguistics studied here. This

practical value will be needed when non-native writers are required not only to produce grammatically correct structures but, more importantly, demonstrate a considerable insider knowledge of the stereotypical and conventionalized rhetorical patterns preferred within their discourse community. This research stands to enhance their rhetorical awareness to allow them to perform as competent community members whose academic communications style is appropriate even in the eyes of experienced members of the international discourse community who are likely to be reviewers of their papers. Considering Indonesian writers, this kind of awareness is necessary to help increase their chances of participating and gaining credit in their field.

Lastly, this research is hoped to have immense pedagogical value in the Indonesian context. The study's findings can provide insight into syllabus design and development of material not only for the teaching of academic writing in Indonesian universities but also for undergraduate and postgraduate students and researchers. Therefore, this research should be a good starting point for more vigorous research into academic English to form the basis for English academic training in Indonesian universities and beyond.

CHAPTER II

THEORETICAL BACKGROUND

2.1. Previous Related Studies

The study of modality has been done from a great number of perspectives. To a certain degree, there are two major perspectives from which modality is defined, philosophical and linguistic. The first perspective is related to the modal logic that incorporates the concept of modalities, such as necessity, possibility, and other closely related concepts. According to Williamson (2013), modal logic has been recognized as a subject since the early twentieth century and has become the formal study of the philosophical notion of necessity and possibility. Actually, the concepts have been ground worked by Aristotle and then by the medieval logicians (Kneale & Kneale, 1962). The concepts entail the judgment of ideas, whether they are valid or invalid in terms of truth. When the necessity patterns are judged to be valid, they imply truth.

Furthermore, these concepts are formally studied through the work of Lewis & Langford (1932). Others proposition about this concept can be found in the classical and modern literature involving modality. There have been considerable eminent works in this field, such as the work of Jaakko Jintika, Stig Kanger, Saul Kripke, Arthur Prior, David Lewis, Peter Geach, Robert Stalnaker, and others. Their works have become the pioneers of the new era of philosophical logicians today. However, the elaboration of those works is not be in detail because this study does not concern philosophical perspective as the theoretical basis.

The second perspective, the linguistic perspective, examines modality in how it is expressed in communication. The linguistic modality is the primary concern in reviewing the previous related literature. Since there is a vast range of studies about modality in different languages worldwide, the review focuses on the modality in English. The review of the English modality is organized into different aspects of the study.

2.1.1. Epistemic modality in different linguistic approaches

From the literature on the modality in linguistics, it can be revealed numerous ways to approach modality. Palmer (1990) uses a semantic approach and categorized modality into three dimensions in terms of epistemic, deontic, and dynamic. In other scholars' views, the term modality is broadly used to refer to both grammatical terminology (tense-aspect-modality) (i.e., J. Bybee & Fleischman,

1995b; Givón, 1982; Walker, 1986) and semantic terminology (F. de Haan, 2006; Nuyts, 2001; Palmer, 1990).

Although epistemic modality has been widely investigated, few corpus-based studies of the concept have been reported from the perspective of Halliday's Systemic Functional Grammar (SFG), which is the approach adopted in this study. SFG provides a new approach to analyzing the use of epistemic modality. In SFG, epistemic modal expression is considered to have two variables, "value" and "orientation" (Halliday et al., 2014, p.150). The value of epistemic modality, implying the writer's commitment to the modalized statement, indicates different degrees of certainty at three levels and shows a clear differentiation between certainty and uncertainty. The orientation of epistemic modality conveys the writer's responsibility for the modal meaning through various linguistic forms. It reveals the subjectivity or objectivity of a modal expression from the perspective of the source of modality. For example,

- a) He must have inspected the cottage. (High value)
- b) They should be back by now. (Median value)
- c) He may be ill. (Low value)
- d) I'm sure we should sell this place. (subjectivity)
- e) It's likely that they've heard by now. (objectivity)

Examples a), b) and c) are instances that indicate different degrees of the speaker's commitment, "the degree to which the speaker commits himself or herself to the validity of what s/he is saying" (G. Thompson, 1996, p.60). Examples d) and e) are instances which show the difference in "how far the speaker overtly accepts responsibility for the attitude being expressed" (G. Thompson, 1996, p.60). Example d) makes it clear that it is the speaker's subjective point of view and in example e), the speaker objectivizes the point of view by making it appear to be a quality of the event itself.

2.1.2. Epistemic Modality in An Academic Writing

Epistemic modality has been long regarded as a critical aspect of academic writing due to its function as a hedge or boost propositions (Chen, 2010; G. Hu & Cao, 2011; Hyland, 1994, 1995, 1996b, 1998; Mirzapour & Mahand, 2012; Vázquez Orta & Giner, 2008, 2009; Wharton, 2012). The functions of epistemic modality are two-fold. One function is propositional or semantic; the use of epistemic modality indicates the degree of certainty of the proposition and the

addresser's confidence in the truth of the proposition. The other is interpersonal or pragmatic; by adopting. Through politeness strategies through epistemic modality, addressers can establish a relationship with their addressees and successfully communicate with them. Therefore, much research has inquired into epistemic modality in academic articles.

Most studies of epistemic modality focus on two aspects: its frequency and functions. Studies have shown that in written academic discourse, epistemic modality is widespread in sections analysing phenomena or setting backgrounds. Specifically, in research articles, both the discussion and the Introduction sections show a higher frequency of epistemic modality than the Methods and the Results sections (Hyland, 1994, 1995, 1996b, 1996a; Skelton, 1988; Vihla, 1999). In Salager-Meyer's (1992, p.101) study, epistemic modality in medical research article abstracts was found to be "particularly frequent in the recommendation, the conclusion, and the data synthesis moves,"

The frequency of epistemic modality has also been studied from a cross-disciplinary perspective. For instance, (Piqué-Angordans et al., 2002; Pique et al., 2001) found that research articles in health science, medicine, and biology mostly used epistemic modality. In contrast, literary criticism mainly tended toward a combination of deontic modality (indicating permission or obligation) and epistemic modality (indicating possibility or certainty). Vázquez Orta & Giner (2008) compared the use of epistemic modality in marketing, biology, and mechanical engineering. They found that the use of modality markers depended on the nature of the data used for the research discipline: the 'soft' science (marketing) resorted more to epistemic modality than the 'hard' science (mechanical engineering), and biology, as a "mixed discipline", lay in between the two.

Ngula's (2017) study discusses epistemic modal verbs as rhetorical markers of argumentation in Ghanaian scholars' research articles in the disciplines of Sociology, Economics, and Law. It compares the results with similar features in research articles produced by international scholars who are native speakers. Statistically examined results show considerable differences in the use of epistemic modal verbs between the two groups of scholars across the disciplines studied, suggesting that the writing practices of the Ghanaian scholars do not fully adhere to international disciplinary conventions.

A number of studies also attempt to compare English-medium research articles written by Native speakers (NS) and Non-native speakers (NNS). Khoshsima et al. (2016) conducted research that examines epistemic modality in English written by Anglo-American and Iranian writers in English and Iranian writers in Persian. The findings revealed that there were significant differences between all three corpora with respect to the total relative frequency of epistemic modality markers. That is, native English texts contained the highest proportion and native Persian texts included the lowest proportion of epistemic modality markers, and non-native English texts were placed in between. Furthermore, the statistical analysis of the data for each category of epistemic modality markers showed that the text groups differed significantly in containing some specific categories but not others.

C. Hu & Li (2015) show that while both NS group and NNS groups are heavily dependent on a restricted range of items, the manipulation of epistemic modality is particularly problematic for the L2 students who employ syntactically simpler constructions and rely on a more limited range of devices, as already discovered in the previous studies. Nevertheless, this study also shows that the most proficient L2 students modify their statements with fewer certainty markers and more tentative expressions than do their L1 counterparts and that all learner groups, regardless of their overall language proficiency, use fewer boosters than L1 writers, which is in sharp contrast with previous studies. The ability to mark epistemic modality has much to do with L2 proficiency. While lower-band students exhibit a heavy reliance on a narrower range of items for strong assertions, higher-band students tend to be more tentative and demonstrate a more native-like use of some epistemic markers (EMs). The observed patterns are explained in light of the inherent properties of English EMs, the imperfect modal instruction, and learner factors.

Some studies also focus on the rhetorical section of the paper. Gradečak-Erdeljić & Varga (2013) identify the prototypical markers of epistemic modality in the self-compiled corpus of 20 scientific papers in psychology and presents their distribution across the rhetorical sections of the paper. The paper suggests some in-class activities which prompt the English for Academic Purposes (EAP) students to identify epistemic modality markers in different sections of the research papers and their contextual usage. It is assumed that the practical implications of such

activities should raise consciousness about the distribution of the most salient epistemic modality devices and improve students' level of pragmatic competence in EAP class.

Yang et al. (2015) focused on the distribution of the value and the orientation of epistemic modality and their functions in medical RAs. The results showed that medical RA writers mostly rely on low and median values and implicitly subjective, implicitly objective, and explicitly objective orientations of epistemic modality. These findings indicate that medical RA writers tend to make claims mainly in a tentative, reserved, and objective way. The findings of the study may help non-native medical RA writers to produce more acceptable medical RAs.

2.2. Modality

2.2.1. An Overview of Modality

The term “modality” has long been used by philosophers, logicians and linguists to refer to a range of aspects of logic and language. Although it has been studied since Aristotle’s time, the formal theory of modality “was revolutionized in the 1960s” (Kaufmann et al., 2008, p.71). Since then, there has been a range of approaches to modality, leading to a wealth of publications referring to both the semantic and pragmatic features of this domain. However, its diversity and broad sense make it difficult to delineate modality in appropriate and relevant terms. As a result, there has been no consensus on the definition of modality, as Bybee et al. (1994, p.176) state:

Mood and modality are not so easily defined as tense and aspect. A definition often proposed is that modality is the grammaticalization of speakers’ (subjective) attitudes and opinions [...] Recent crosslinguistic works on mood and modality, [...] however, show that modality notions range far beyond what is included in this definition. In fact, it may be impossible to come up with a succinct characterization of the notional domain of modality and the part of it that is expressed grammatically.

As such, different studies with different structures and aims have approached the notion of modality from different angles. Consequently, there have been a variety of approaches to the theoretical description and analysis of this domain. Some are grammar-centered (e.g., Bybee & Fleischman, 1995c; Givón, 1982); others are semantically oriented, centering on ideas of modal notions, showing the speaker’s attitude towards the information presented in the proposition (Coates, 1983, 1995; F. de Haan, 2006; Facchinetti et al., 2012; Palmer, 1990). In

addition, recent approaches to modality have been modified by critical analyses of the basic semantic dimensions and proposed a “nomenclature” of modality categories (Bybee & Fleischman, 1995a; Bybee et al., 1994; Bybee, 1985). There are further additional notions and sub-categories in the manifestations of modality, such as subjectivity vs. objectivity; and performativity vs. descriptivity.

Therefore, the “many-faceted features” of modality, together with linguists’ different views, make it a highly diverse object of study. Van Der Auwera & Plungian (1998, p. 80) claim that “modality and its types can be defined and named in various ways. There is no one correct way”. (Nuyts, 2006, p. 1) also claims that “modality turns out to be very hard to delineate in simple, positive terms”. As a result, it is relatively difficult to give a stable and clear definition that can cover all these related dimensions of modality. (Perkins, 1983, p.1) states, “in spite of the vastness of the available literature, it is by no means easy to find out what modality actually is” when presenting the five principal ways that distinguish his approach from Lyons’ (1977) and Palmer’ (1990) views in defining modality. Likewise, researching modality “is very similar to trying to move in an overcrowded room without treading on anyone else’s feet” (Perkins, 1983, p.4).

Although previous studies on modality diverge in different ways, the major interest that scholars share is in the taxonomy of this domain. That is to say, the common thing that can be seen from prior theoretical approaches to the domain of modality is to reflect multi-faceted relationships between the speaker’s attitude and the proposition, between the proposition and the objective reality, and between the speaker and the addressee. However, it can be argued that these are mostly just general characterizations of the multiple perspectives on modality. In practice, appropriate identification of modality as a specific category that represents its actual semantic and pragmatic features is still not available because modality does not simply relate to the modal auxiliaries but also other constructions (Bussmann, 2006). For instance, expressions like *I believe that, I think that, I expect that or It is my hope and my belief that, I am confident that, I am sure that, as you probably know, et cetera.* are among patterns normally used to show the “speaker’s attitude” towards what is uttered (Kiefer, 1987).

In sum, the modality has received divergent interpretations. However, it can be argued that the relevant literature has mainly been concerned with theoretical issues such as notions of possibility and necessity, grammatical categories such

as tense-aspect-modality, and basic semantic dimensions in terms of deontic, dynamic and epistemic modality (as presented in the following sections). In point of fact, there has been no research providing specific structures or patterns suggesting modality markers are related to the categories of modality discussed. Therefore, this study attempts to unfold syntactic structures and lexical items used as modality markers expressing particular modality meanings and analyse their pragmatic functions as expressions of the speaker's attitude, opinions, and emotions towards the proposition through samples of British and American ambassadorial speeches. The following sections comprise a review of traditional notions of modality and an overview of the dimensions of modality.

2.2.1.1. Traditional Modal Logic

In traditional modal logic, the term modality is basically related to the truth of the proposition in terms of it being a "necessarily true proposition" and a "possibly true proposition". As far back as Aristoteles's time, Propositions have been classified as entities separated from the actual world (the speaker, hearer(s), and discourse context). The semantic role of modal logic is expressed in the way of qualifying the truth of the utterance. That is to say, the truth (or falsity) of an utterance does not depend on the actual world but on the proposition. Traditional modal logic divides the notion of truth into four types: (1) necessary truth is the one that is true by definition; (2) factual truth is the one that is true as fact; (3) possible truth is the one that is true by hypothesis; and (4) non-truth is the false one. Of these four types, the first two can be seen to overlap with logicians' distinction between "analytic propositions" and "contingent propositions", respectively (Kaufmann et al., 2008; Kiefer, 1987; Lyons, 1977). The former indicates propositions that are necessarily true (whereas those necessarily false are contradictions), and the latter indicates those that are contingently true or false. Likewise, necessarily true (or analytic) propositions are true in all "possible worlds". The notion of "possible worlds" may be considered in relation to the systems of beliefs and assumptions which are logically appropriate for different kinds of discourse (Lyons, 1977). Possibly true (or contingent) propositions are those that are not necessarily false, whereas possibly false propositions are those that are not necessarily true.

According to traditional modal logic, central to the notion of modality is "alethic" modality. This type of modality, as von Wright, (1951), quoted in Palmer,

(2001, p. 10-12) claims, concerns the necessary or contingent truth of the proposition and therefore focuses on the notions of “logical necessity” and “logical possibility” (Kaufmann et al., 2008; Kiefer, 1987; Lyons, 1977; Palmer, 1986). The terms necessity and possibility are expressed and analyzed by traditional modal logic according to the criteria of possible worlds. (Kiefer, 1987) uses the term “possible world semantics” to provide a general framework for the definitions of all types of modalities. (Kiefer, 1987, p. 71) states that:

p [a proposition] is necessarily true if p is true in all accessible possible worlds, and p is possible if there is at least one accessible possible world in which p is true.

However, the problem that faces us in considering the truth of the proposition, according to traditional modal logic, is the ambiguity in many English declarative sentences. As such, we are concerned with whether a sentence is true or false in a given interpretation. That is to say, a proposition that can be true under one interpretation may appear to be false under another in a possible world. Therefore, the vital point to be considered is not only the possible world but also the content of the utterance, as it determines the truth conditions in a specific world in terms of possibility and necessity.

Typical ways to analyse the necessity and possibility of propositions are as follows: (1) a proposition will be true in some possible world if it has the value “true” in some state description. This type of proposition affirms the existence (or not) of some state of the universe; (2) a proposition is necessarily true only if it is true in all possible worlds. This is the proposition of necessity reflecting the state that it is true in all possible worlds; and (3) a logically impossible proposition is true in none of the possible worlds (Lyons, 1977).

As such, logicians have created a set of symbols of possibility and necessity, universal and existential quantifiers, and also classes of entities. Propositions in modal logic differ from those analyzed in linguistics in that they are exactly and objectively formalized and quantified in their specific system. In such an indivisible and closed system, modal logic may be mainly concerned with the relationship between the proposition and objective reality, without any attention to other components such as the speaker, the hearer(s), or the situation of the utterance. Modal logic can, therefore, be treated as objective modality and

opposite to subjective modality, which has its central focus on the speaker and other relationships in the reality of communication.

However, traditional modal logic can be seen to lay an important foundation for the basic concepts of modality and the system for representing the internal structure of propositions. These are of essential interest to linguists because they accurately portray the underlying logical form of sentences in correspondence to structures of facts or states of affairs in the external world. Modern modal logic may make use of these to formalize phenomena which can be seen as the starting points for developing a theory of linguistic modality.

2.2.1.2. Linguistic Modality

The notion of modality in linguistics is more open than that of modal logic. It is used in a variety of ways to express the mutual relationships between the speaker and the proposition as well as between the speaker and hearers in spoken communication. The literature on linguistic modality reveals a range of ways to approach semantic categories of modality. Palmer (1990, 2001) proposes three basic semantic dimensions in terms epistemic, deontic, and dynamic, which can be seen as the seminal introduction to modality notions. In other scholars' views, the term modality is broadly used to refer to both grammatical terminology (tense-aspect-modality) (i.e., Bybee, 1985; Bybee et al., 1994; Givón, 1982) and semantic terminology (F. de Haan, 2006; Nuyts, 2001; Palmer, 1990). These approaches create a diversity in the semantics of linguistic modality, as Nuyts (2006, p. 1) claims:

The domain is usually characterized by referring to a set of more specific notions, each of which is defined separately, and which may be taken to share certain features motivating their grouping together under the label modality, but which differ in many other respects. As such the notion of modality is best viewed as a super category.

Consequently, "there is as yet no consensus on the proper terminology for modal meanings" (F. de Haan, 2006, p. 28). However, the most common aspect deriving from these different approaches to modality is that the notion of epistemic modality basically remains unchanged. The other two basic notions have been reorganized in association with a range of terms. For instance, J. Bybee et al., 1994 and J. Bybee & Fleischman, (1995a) have suggested the distinction between agent-oriented modality and speaker-oriented modality; Coates (1983, 1995),

Haegeman (1983) and Palmer (1990) use the term root modality to cover both deontic and dynamic modality.

All in all, interest in modality has developed in diverse ways and is targeted narrowly within the objectives of specific research or the theoretical and methodological framework researchers rely on. This linguistic domain has been pursued from a formal (Kaufmann et al., 2008) to a functional perspective (F. de Haan, 2006). Consequently, discussions on modality meanings are wide-ranging, but not a single one has received scholarly consensus as being adequate and relevant as a framework of linguistic modality.

Therefore, this study is based on the major views on modality. An overview of the theoretical analysis of modality is presented, including the basic categories of modality and different approaches to the divisions and subcategorizations of this semantic domain. The theoretical analysis leads to a diagram showing the relations of different modality meanings and indicate the framework of modality for the research. In this research, the view of modality as the speaker's attitude towards the content of the proposition and commitment to the performance of the act uttered is taken for granted as a guideline for the analysis of the semantic and pragmatic perspective of Modality Markers (MMs).

2.2.2. Early Studies on Modality

2.2.2.1. Jespersen (1924)

Early discussion on modality can be inferred from the term mood by Jespersen (1924) in his grammar book. In Jespersen's discussion, mood expresses "certain attitudes of mind of the speaker towards the contents of the sentence". Jespersen (1924) also lists twenty sub-categories of modality, quoted in Palmer (1986)

Palmer (1986) which is divided into two sets: one "containing an element of will" and another "containing no element of will", which delivers a variety of the speaker's attitudes towards the context of the utterance. This can be considered a seminal study of the pragmatic aspect of modality (Jespersen, 1924), reproduced in Palmer, 1986, pp. 9–10). Although there are some repetitions and overlaps in the introduction to these sub-categories, Jespersen's discussion is essentially significant in that we can easily realize the two basic types of modalities with or

without "the element of will". These two categories also correspond roughly to the two basic semantic dimensions of deontic and epistemic modality.

2.2.2.2. Von Wright (1951)

Von Wright (1951) discusses formal structures of modality in terms of truth and classified modality into four categories that he called modality modes, namely: 1) mode of truth (alethic modality), 2) mode of knowing (epistemic modality), mode of obligation (deontic modality), and mode of existence (existential modality). Each sub-category has a list of the modality's concrete contents. However, in his discussion, epistemic and deontic modes are considered the most important. The other two modes, alethic and existential modes, have little place in the discussion of linguistic modality.

According to von Wright, the existential mode is a matter of quantificational logic. It is more concerned in ordinary speech with the utilization of some, any, and all than modality expressions. The alethic mode also has less to do with linguistic modality. This is because there is no formal grammatical distinction between alethic and epistemic modality. The epistemic modality has assumed the central position in linguistics as the fundamental modality category. Palmer (1986, p. 12) claims that "although something similar appears in Jespersen's analysis, it is doubtful whether this should be included within modality at all". It can be pointed out that despite the four suggested modes, von Wright's perspective is fundamental to the discussion of epistemic and deontic modality.

2.2.2.3. Rescher (1968)

Rescher (1968) initial statement on modality pertains to the qualification of a proposition's truth or falsity. Rescher (1968:24–26, as cited in Palmer 1986:12) states:

When such a proposition is itself made subject to some further qualification of such a kind that the entire resulting complex is itself once again a proposition, then this qualification is said to represent a modality to which the original proposition is subjected.

Based on von Wright's (1951) four modes, Rescher (1968) adds four additional categories, including "temporal," "boulomaic," "evaluative," and "causal" modalities. Additionally, Rescher elaborates on the three categories of "conditional" modality. These fundamental concepts of modal logic contribute to the modality's overall framework. According to Palmer (1986), although Rescher's

list of modalities is of some interest, it would define modality too broadly, and there appears to be an issue with such a definition. Essentially, Rescher's (1968) perspective on modality may be important to classical modal logic, primarily concerned with true or false states of affairs. Therefore, this perspective is too broad to serve as a framework for considering the modality's semantic dimensions.

2.2.2.4. Lyons (1977)

Lyons (1977, p. 725) initially employs Austin's (1962) theory of speech acts as the framework for his analysis of mood and modality. He asserts:

One of the most attractive features of the theory of speech acts [...] is that it gives explicit recognition to the social or interpersonal dimension of language behaviour and provides a general framework [...] for the discussion of the syntactic and semantic distinctions that linguists have traditionally described in terms of mood and modality.

Lyons (1977) considers modality not just as a mechanism for expressing the speaker's perspective and attitude but also as a means of influencing listeners. Lyons (1977, p. 725) claims that "when we communicate some proposition to another person, we do so, normally because we wish to influence in some way his beliefs, attitudes or behavior". The following are the major definitions of modality proposed by Lyons (1977, p. 787):

- Originally defined by logicians, necessity and possibility are forms of modality that distinguish "propositions that are contingently true or untrue" (synthetic propositions) and "propositions that are either inevitably true (analytic propositions) or necessarily false" (contradictions). These are the core concepts of classical modal logic, which serve as the fundamental dimensions for the linguistic analysis of modality.
- According to Lyons (1977, p. 797), epistemic modality relates to the speaker's knowledge or commitment to the content of the utterance in relation to factivity and reality.
- Deontic modality is a term frequently employed by philosophers to refer to a specific branch or extension of modal logic, namely the logic of obligation and permission. Lyons (1977, p. 823) claims that "deontic modality is concerned with the necessity or possibility of acts performed by morally responsible agents".

Lyons (1977) also distinguishes between objective and subjective epistemic modalities, which are equivalent to classical modal logic and linguistic

modalities, respectively. The subjective epistemic modality, according to Lyons (1977), is more concerned with linguistic modality than the objective epistemic modality. Although Lyons (1977) presents a thorough analysis of modality, he has not provided his personal perspective on the many approaches to defining this domain. In conclusion, Lyons' (1977) discussion of modality can be understood from two perspectives: classical modal logic's alethic modality and the contrast between the two major categories of epistemic and deontic modality.

2.2.2.5. Searle (1979)

In examining Austin, (1962), Searle (1979) advances a three-dimensional distinction between "locutionary," "illocutionary," and "perlocutionary" speech acts. The locutionary act is the act of saying something with a certain sense and reference; The illocutionary act is the act performed in saying something, i.e., the act named and identified by the explicit performative verb. The perlocutionary act is the act performed by, or as a consequence of, saying something (Austin, 1962). This theory recognizes the social and interpersonal aspects of language behaviour. It demonstrates the relationship between the speaker and the message. Concerning language modality, Searle (1983) cited by Palmer (1986: 13), develops five fundamental categories of illocutionary acts as follows:

- Assertives: where we tell our hearers (truly or falsely) how things are
- Directives: where we get them to do things
- Commissive: where we commit ourselves to do things
- Declarations: where we bring about changes in the world with our utterances
- Expressives: where we express our feelings and attitudes

Four of these five categories encompass both the epistemic and deontic senses. The discussion of the speaker's beliefs and feelings regarding the truthfulness of the claim provided in the utterance focuses on Assertives and Expressives. Thus, they correspond closely to the epistemic modality that expresses the speaker's feelings about the current state of affairs. Directives and Commissive relate to the utterances of the speaker that cause others to act or commit themselves to the action presented in the utterance. In this manner, they give a feeling of deontic modality.

Searle's approach differs primarily in his category of Declarations, which asserts that a declarative phrase might be either descriptive or nondescriptive. A

descriptive declaration may not be compatible with modality because it describes reality and hence reflects a proposition. Modality, on the other hand, transmits the cognitive, emotional, or volitional qualification of the provided event by the speaker. Therefore, it is added to the proposition, rendering the expression non-descriptive. Thus, descriptive declarations can be viewed as propositional content and lack modality markers, whereas non-descriptive declarations consist of modality meaning and the utterance's proposition.

It can be said that Searle's categories of illocutionary acts provide a useful semantic framework for the consideration of the relationship between modality markers and the proposition given in the utterance.

2.2.2.6. Perkins (1983)

Perkins (1983) discusses the definitions of modality via three sets of general principles. The first is closely related to Rescher's (1968) alethic and epistemic categories of modality. This set of modality definitions "conform[s] to rational laws of inference, deduction, et cetera." (Perkins, 1983, p. 10). It focuses on understanding the world through "the laws of human reason." This set of modalities is associated with belief and denotes the state of ignorance linguists have characterized as non-factivity (Perkins, 1983, p. 10). Thus, this set of modal meanings indicates the speaker's evaluation of the provided event closely correlates to epistemic modality. The second set of principles is strongly related to Rescher's deontic modality (1968). This set relates to modality definitions "defined in terms of social or institutional laws" (Perkins, 1983, p. 11). Similar to dynamic modalities, "causal modalities" constitute the third general category. Perkins (1983) is concerned in the topic of modality important to "the core meaning" of certain English modals, as well as the contrast between modals in terms of "entailment" and "preclusion," which relate to epistemic and deontic modality.

It can be claimed that Perkins' (1983) interpretation of modality in terms of the three sets of principles is comparable to the framework of epistemic, deontic, and dynamic modality.

2.2.2.7. Givón (1989)

Givón (1989) defines three types of modalities as presupposition, realis assertion (R-assertion), and irrealis assertion (IRR-assertion). In terms of the speaker's subjective certainty, these modalities of information are rated as follows:

Presupposition > R-assertion > IRR-assertion.

Presupposition has the highest subjective certainty because the speaker assumes that the hearer is aware of it or is unlikely to challenge it. Givón (1989, p. 134) recommends the following descending scale of subjective certainty expressions in English:

I know > I am sure > I think > I believe > I see > I hear > I guess...

A realist assertion is a specific form of phrase. In other words, the speaker must be able to clarify or defend the information using evidence from direct experience (sensory modality), hearsay, or inference. Thus, there is a significant distinction between merely describing facts (as in propositional statements) and remarking openly on their truth (as when utilizing expressions of the speaker's subjective certainty, as described above). Asserting denotes a distinct sub-category of speech act than that which Searle (1979) labels "Representing."

An irrealis assertion is the type of clause in which "information is weakly asserted as hypothesis, possibility, probability, supposition, conjecture, prediction or guess" (Givón, 1989, p. 137). The source of information in this modality meaning is irrelevant and suspicious.

In conclusion, Givón's (1989) discussion of modality can be interpreted as encompassing the following five epistemic categories:

Table 2.1 Givón's epistemic categories

Evidentiary strength	Direct sensory experience > inference > indirect inference > hearsay
Sensory evidence	Visual experience > auditory experience > other sensory experience,
Participants in events	Speaker>hearer>third party,
Spatial proximity	Near the speech situation>away from the speech situation,
Temporal proximity	Nearer to speech time>farther away from the speech time.

Note. Adopted from Givón's (1989).

2.2.2.8. Palmer (1986, 1990)

Palmer's texts (1986, 1990) are among the standard reference works for the typological analysis of epistemic, deontic, and dynamic modality. Epistemic modality refers to the use of language as a "countersign of thought," whereas deontic modality refers to action. According to Palmer (1986), epistemic modality refers not only to modal systems that fundamentally involve the concepts of possibility and necessity but also to any modal system that indicates the speaker's commitment to the content of his/her utterance. This type of modality reveals the extent of the speaker's "understanding or knowledge" regarding the truthfulness of the presented proposition. Consequently, epistemic modality includes expressions of judgments and evidence demonstrating the speaker's commitment to what is being said. The deontic modality refers to actions performed by others or by the speaker himself in terms of obligation and permission. In addition to these two fundamental modality categories, Palmer (1990) proposes a third: dynamic modality. In reality, this split approximately conforms to his prior explanation of modality types as "epistemic," "discourse-oriented," and "subject-oriented," respectively.

In conclusion, Palmer's fundamental categories of modality can be regarded as the standard reference framework that gives the fundamental meanings for examining MMs. The only problem with Palmer's perspective is that, although he proposes major concepts in the discussion of modality throughout his book, there is no illustration of specific structures or markers associated with the major categories of modality that can serve as an essential reference for L2 English users with targeted ways of employing this domain.

2.2.2.9. Halliday

Halliday (1994), in *Systemic Functional Linguistics*, theorizes that language serves three distinct functions known as meta-functions: the ideational, the interpersonal, and the textual. The ideational function indicates that language is used to organize, understand, and express the speaker's perceptions of the environment and his consciousness. The textual function indicates that language is used to communicate what is said or written to the real world and other linguistic activities. The interpersonal function implies that language is employed to enable the speaker to participate in communicative activities with others, assume roles, and express and misunderstand feelings, attitudes, and judgments.

The last function, the interpersonal function, discussed mood and modality. Mood structures express interactional meanings, such as what the phrase does, as a verbal exchange between the encoder and the decoder. Mood structures consist of mood elements and residue elements. Mood elements constitute the main elements of clauses which are always minimum present in various types of moods. For instance, the sentence *He is absent from the class*. The mood elements of this clause consist of the subject *He* and the finite *is*. Thus, mood elements consist of three entities: subject, finite, and mood adjunct. Residue elements refer to those elements which are not included in the mood elements. Residue elements cover three categories predictor, complement, and circumstance. Modality relates to the speaker's opinion or judgment regarding the meaning and function of the clause. Therefore, further discussion will delve into modality in systemic functional linguistics.

2.3. Modality in English

Modality, as used in the context of linguistics, is a semantic category that spans a wide range of meaning fields of modal expressions. Different researchers have defined the concept of modality (Coates, 1983; Hoyer, 1997; Huddleston et al., 1988; Lyons, 1977). Lyons (1977, p. 452), for instance, says that modality refers to a speaker or writer's "opinion or attitude towards the proposition that a sentence expresses, or the situation that a proposition describes". According to Quirk et al. (1983, p. 219), "modality may be defined as the manner in which the meaning of a clause is qualified so as to reflect the speaker's judgment of the likelihood of the proposition it expresses being true".

It can be inferred from the definitions offered by Lyons (1977) and Quirk et al. (1985) that an important feature of modality is its subjective nature. Since it relates to people's opinions and attitudes expressed in their utterances and sentences, modality is quite a subjective concept. As Palmer (1986, p. 16) explains, modality "is concerned with subjective characteristics of an utterance, and could even be argued that subjectivity is an essential criterion for modality". The issue of subjectivity is often extended to the analyst interested in modality because of the difficulties and fuzziness that sometimes characterize efforts to assign appropriate semantic labels to modal expressions, especially when the analyst is working with authentic texts. This explains why it is argued that whereas

the grammar of modal expressions is fairly easy to analyze without any serious challenge, analysis targeted at their meanings can sometimes be difficult and problematic (e.g., Freeborn, 1995; Palmer, 1990). In the words of Freeborn (1995, p. 164), "The grammar of modals is simple. The meanings, however, are often complex, subtle, and ambiguous". Nevertheless, the complexity associated with modality also explains why it has been an interesting topic examined by various linguistic traditions over the years, leading to various accounts of modal semantic theory and practice.

2.3.1. Epistemic modality as a semantic category

Epistemic modality allows a speaker or writer to make a statement with varying degrees and levels of commitment essentially because what is known to the speaker or writer about the statement does not warrant absolute certainty. Kratzer (1981) has explained this aptly by saying that if we use an epistemic device, we are interested in what else may or may not be the case, given everything we know already about the situation that triggered the use of the epistemic device. Furthermore, Coates (1983, p. 18) has defined epistemic modality as being "concerned with the speaker's assumptions or assessment of possibilities and, in most cases, it indicates the speaker's confidence (or lack of confidence) in the truth of the proposition expressed".

More recently, Vold (2006, p. 226) has suggested that "epistemic modality concerns the reliability of the information conveyed, and epistemic modality markers can be defined as linguistic expressions that explicitly qualify the truth value of a propositional content". Therefore, the evidence available to the speaker [or writer] with epistemic modality determines the level of confidence and force that backs an assertion, a statement, or a proposition. The linguistic expressions used to mark epistemic modality represent varying degrees of commitment on the epistemic modality continuum, one end indicating doubt/doubtfulness and the other expressing certainty/confidence (Coates, 1983; Gabrielatos & McEnery, 2005; Holmes, 1988)

With regard to the linguistic devices and resources used to express epistemic modality, it seems well established that the modal verbs (e.g., may, would, could, must) are the prototypical and best known for this purpose. However, other lexical items beyond the modals usefully express epistemic modality. These include adjectives such as possible, likely, probable; adverbs such as perhaps,

maybe, possibly; lexical verbs like seem, appear, guess and nouns such as hope, possibility, assumption (Holmes, 1988; Hoye, 1997). This broad perspective of expressions of epistemic modality is taken beyond the use of modal verbs in the present study of theses written by post-graduate students in universities located in English and non-English-speaking countries, with the particular aim of throwing some light on how Indonesian academics in the fields applied linguistics utilize this important argumentative rhetorical resource in their theses.

2.3.2. Epistemic Modality as An Interpersonal Metafunction Feature

In his Systemic Functional Linguistic (SFL) language description model, Halliday emphasizes that language ought to be seen as a social process shaped by different contexts of situations. Thus the specific function and meaning carried by language are determined by the appropriate context of the situation (Halliday, 1994; Halliday et al., 2014). Halliday identifies field (what is said/written), tenor (the relationship between participants), and mode (expectations of how what is said/written is organized) as the three main contextual dimensions manifest in a register and shows how these dimensions respectively correspond to the three 'functional' components of human language (ideational, interpersonal and textual), referred to in SFL nomenclature as metafunctions. Following Halliday, Hyland (2005, p. 26) summarises the purpose(s) each element serves within the metafunction framework:

- a. The ideational function: the use of language to represent experiences and ideas. This roughly corresponds to the notion of 'propositional content' ... and concerns perceptions of the world and our own consciousness.
- b. The interpersonal function: the use of language to encode interaction, allowing us to engage with others, to take on roles and to express and understand evaluations and feelings.
- c. The textual function: the use of language to organize the text itself, coherently relating what is said to the world and to the readers.

Although, as Halliday himself has established, these three functions complement each other in creating the communicative meaning of a text as a whole, there are noticeable linguistic resources that typically contribute to highlighting the role of each function. Epistemic modality, the linguistic resource examined in this study, belongs to the interpersonal function. As Flowerdew (1998, p. 543) notes, "The interpersonal function is concerned with the writer's attitude to

the message and is typically realised through modal verbs (e.g., should, may) and various types of modal adjuncts (e.g. probably, obviously)”.

It must be noted, though, that in SFL theory, the epistemic and deontic types come under different labels, although what these labels describe seems to be pretty much similar to the epistemic/deontic distinction. Modality is the ‘umbrella’ term used to describe degrees of probability and certainty (roughly corresponds to ‘epistemic’), while modulation refers to degrees of obligation and inclination (roughly corresponds to ‘deontic’) (Halliday et al., 2014, p. 124). In the present study, the researcher prefers the term epistemic modality and uses it to represent the different degrees of probability in a proposition, following similar classifications by Holmes (1988), Hyland & Milton (1997), Hyland, (2001), McEnery & Kifle (2014) and Vold (2006).

2.3.3. Epistemic Modality as An Interpersonal Feature in Academic Writing

Given that interpersonal rhetorical features play a crucial role in academic writing, researchers of composition theory and the rhetoric of science are becoming increasingly interested in how writers use these interactive features to achieve persuasion, acceptance, and ratification from their readers. With a varying scope and focus, researchers have discussed these interpersonal linguistic resources in academic writing under such broad terms as metadiscourse (e.g., (Ädel, 2006; Crismore et al., 1993; Hyland, 2005; Hyland & Tse, 2004; Myers, 2013), stance (Biber, 2006b, 2006a; Finegan, 1989; Keck & Biber, 2004), evaluation (Hunston, 1994; Hunston & Thompson, 2000), appraisal (J. Martin, 2000; J. R. Martin & White, 2007), among other labels.

While there seems to be a great deal of overlap as regards the interpersonal linguistic resources covered within these broad terms, most of them have included categories that adequately fall within the scope of epistemic modality. For example, with regards to metadiscourse, which has been quite extensively studied by Ken Hyland (and several others), the taxonomy of metadiscoursal features has categories that include the expressions of doubt and certainty. In a recent account of what metadiscourse entails, Hyland (2013, pp. 67–68) explains that metadiscourse refers to “the self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) in expressing a viewpoint and engaging with readers as members of a particular

community”. Thus metadiscourse is guided by the following three main principles (Hyland, 2013; Hyland & Tse, 2004):

- a. that metadiscourse is distinct from propositional aspects of discourse;
- b. that metadiscourse refers to aspects of the text that embody writer-reader interactions;
- c. that metadiscourse refers only to relations that are internal to the discourse.

Based on these principles, which have been partly shaped by many years of his analysis of real texts (especially within academic genres), Hyland developed his interpersonal model or taxonomy of metadiscourse. Within this metadiscoursal framework, epistemic modality (and the linguistic forms used to express it) can be classified within the interactional sub-category, covering its major types, i.e., hedges and boosters, which primarily focus on the writer’s level of confidence or commitment to the proposition that is expressed. As (Myers, 2013) reminds us, “hedges and boosters are communicative strategies for increasing or reducing the force of statements”.

Table 2.2 Hyland’s Interpersonal Model of Metadiscourse

Category	Function	Examples
Interactive	Help to guide reader through the text	Resources
Transitions	Express relations between main clauses	In addition/but/thus/and
Frame markers	Refer to discourse acts, sequences, or stages	Finally, to conclude/my purpose is
Endophoric markers	Refer to information in other parts of the texts	Noted above/see figure/in section
Evidentials	Refer to information from other texts	According to X/Z states
Code glosses	Elaborate propositional meanings	Namely/e.g./such as/in the other words
Interactional	Involve the reader in the text	Resources
Hedges	Withhold commitment and open dialogue	Might/perhaps/possible/about
Boosters	Emphasize certainty or close dialogue	In fact/definitely/ it is clear that

Attitude markers	Express writer's attitude to proposition	Unfortunately/agree/surprisingly
Engagement markers	Explicitly build relationship with reader	Consider/note/you can see that
Self-mention	Explicitly reference to writer(s)	I/we/my/me/our

Note. Adopted from Hyland (2013: 77)

In the present study, the researcher uses the term 'epistemic modality' to discuss the various degrees of probability expressed in statements and propositions. While hedges and boosters make use of linguistic resources that fall within those degrees of probability, the use of the term 'epistemic modality' in this study allows for the inclusion of other epistemic devices on the continuum of probability that may not properly function either as a hedge or as a booster but which can be placed somewhere between these two epistemic functions. As such, the categories of epistemic modality suggested by Hyland & Milton (1997) and McEnery & Kifle (2014) – certainty (highest probability), probability (medial probability), and possibility (low probability) – seem to serve my purpose in this corpus-based study better.

Another broad term often discussed in the context of a writer's attitude towards text and readers is stance. In academic discourse research, stance has been used to cover many features beyond epistemic modality. In his work on university language, where he discusses a number of linguistic features associated with spoken and written university registers, Biber (2006a; 2006b) prefers to talk about how speakers and writers convey their personal feelings and assessments under the term 'stance'. Relying on the stance framework in Biber et al. (1999), Biber (2006b: 99) explains that stance markers "convey many different kinds of personal feelings and assessments, including attitudes that a speaker has about certain information, how certain they are about its veracity, how they obtained access to the information, and what perspectives they are taking."

Thus the semantic aspects of stance, while they include epistemic devices, also span attitudinal and stylistic features (Biber et al., 1999), which are not the concern of the present study. The point, then, is that the lexico-grammatical features used by Biber (2006b) in his analysis of stance in university registers cover epistemic, attitude, and style markers. For instance, one of the major linguistic

resources examined in his study is stance adverbs, and he exemplifies these as follows:

Stance adverbs

- Epistemic
Certainty: e.g., actually, certainly, in fact
Likelihood: e.g., apparently, perhaps, possibly
- Attitude: e.g., amazingly, importantly, surprisingly
- Style/perspective: e.g., according to, generally, typically

(Biber, 2006b: 101)

The other categories in Biber's stance framework (modal/semi-modal verbs, complement clauses controlled by stance verbs, adjectives, or nouns) all have a similar pattern, including epistemic, attitude, and stylistic lexico-grammatical features. It is the epistemic aspects of stance (without an eye on the attitudinal and stylistic aspects) that the present investigation is concerned with. The linguistic features often discussed under the term 'stance' are thus broader in scope than the range of devices used to express epistemic modality. The point that epistemic modality only constitutes a subpart of stance generally is further expressed in Myers' (2013) analysis of stance in blogs, where he classifies epistemic stance as one kind of stance marker, the others being attitudinal and stylistic stance markers.

2.4. Modality in Systemic Functional Linguistic

2.4.1. An Overview of Systemic Functional Linguistics

In the early 20th century, linguistics witnessed a considerable number of theories, and each one has its distinct orientations, trends, and subjects of study. However, most of these theories, such as Halliday and Chomsky's traditions, have been initiated by a number of followers or independently. In addition, each theory has been successful in accounting for aspects of language from a certain perspective. One of the most substantial theories is Halliday's SFL, which has attracted the most attention and has been frequently employed in the literature on linguistics and applied linguistics. Furthermore, this section discusses a number of aspects of SFL, namely, the background of the SFL as a linguistic tradition, SFL compared to other linguistic traditions, the key elements of the SFL, SFL as an

applicable tradition, examples of the value of applying SFL, and finally, the benefits associated with working with SFL.

SFL is an approach to language mainly developed by M.A.K. Halliday and his followers during the 1960s in the United Kingdom and later in Australia (Donnell, 2011, p. 1). SFL is built on previous works of some influential linguists such as Bronislaw Malinowski and J.R. Firth. Bronislaw Malinowski was a Polish anthropologist who did most of his work in England (O'Donnell, 2011, p. 5). The second linguist is J.R. Firth, who established linguistics as a discipline in Britain. He developed Malinowski's theory about the centrality of the context of the situation and applied it through his linguistic model. In addition, he developed an approach to phonology called 'prosodic phonology', which enables phonological features to be shared over successive phonemes rather than each phoneme having its own unique features (O'Donnell, 2011, p. 6).

Nowadays, the SFL approach is used worldwide, especially in language education, and for a number of purposes like discourse analysis. It has continued to be closely associated with sociology, even when a good number of linguistic theories deal with language in the form of mental practice. Halliday's tradition, as an illustration, is more interested in the manner by which language is utilized in social settings so as to attain a specific target (O'Donnell, 2011, p. 2). SFL, with regards to data, does not tackle the manner of language representation or process in the human brain but would rather try to see discourses produced in the form of written or oral language and what is contained in the texts that are produced. Because of the concern of SFL with the use of language, great importance is placed on the function of language, such as what language is used for, rather than what language structure is all about and the manner by which it is composed (Matthiessen & Halliday, 1997).

SFL has its distinctive respects in comparison with the other linguistic systems. For example, the systemic functional linguistics featured by Michael Halliday and the transformational generative linguistics represented by Noam Chomsky has been deemed two of the most influential and pivotal traditions in the linguistic and academic fields. However, both systems are distinct in many respects but virtually make the same impacts. Yet there are a number of differences between these two linguistics systems. For instance, systemic functional grammar (often SFG) studies the language through meaning (i.e., its

function). In contrast, transformational generative grammar (often TGG) is a fully influential and developed version of linguistics through a form. As an illustration, Halliday believed that linguistics should describe actual sentences with many functions and without a deep structure. In addition, he was concerned with the function of the sentence, or in other words, the writer's purpose in writing the sentence (Matthiessen & Halliday, 1997). Conversely, Chomsky maintained that linguistics should go beyond merely describing syntactic structures, and its purpose is to elucidate why language is structured in the way it is. To summarize, Chomsky characterized form independently of function and meaning, while Halliday had good reasons to believe that function and meaning can help shape form (Bavali & Sadighi, 2008).

The second comparison is between Halliday's functional tradition and Bloomfield's structural tradition. The structural theory was featured by Leonard Bloomfield, who developed structural linguistics in the United States during the 1930s and 1940s. However, Halliday insisted that the central concern of linguistics should be the study of the language through meaning, which was different from the dominant Bloomfield approach in American linguistics (Matthiessen & Halliday, 1997). Bloomfield rejected the possibility that linguistics analyzes meaning. He was fully convinced of the need for linguists to study oral language in lieu of studying written documents. The documents, for example, do not fully represent a spoken language due to the fact that language undergoes changes over time, and what something means today might have meant a different thing altogether in the past (Hall & Koerner, 1987).

2.4.2. Categories of Modality in Systemic Functional Linguistics

In the interpersonal function, language is used to express a speaker's attitude and judgment for communicating with others. Mood and modality are realized in the lexicogrammar of the language to convey meanings. Mood is the system realized in selecting the three main illocutionary acts in terms of indicative, interrogative, and imperative. Modality is the speaker's opinion or judgment on the content and speech function of the clause. It refers to the area of meaning that lies between the positive and the negative poles, that is whether the process is realized or not realized.

(Halliday, 1994, p. 88) notes that modality is the intermediate degrees between the positive or the negative poles. Further, he says (1994, p. 356) modality refers to the area of meaning that lies between yes and no -- the intermediate ground between positive and negative polarity. In social context, human being as the language user interchanges his linguistic experience to others which are realized in the form of the text. Modality is part of action done by the language users when they change their linguistic experience to each other which is represented in a text. In this interchange, the language user may give his own suggestion or comment in the commodity of what he is saying. Modality contains consideration, perspective, attitude or judgment of the addresser to the information or goods and services which are realized by way of statement, question, offer, and command.

Halliday (1994), and Eggins (2005) note that there are two types of modality, they are modalization and modulation. There are so many ways of getting yes to no poles. Because of that, modality needs to account for the distinction between propositions and proposals. Proposition is the meaning of the positive and negative poles in asserting and denying. Proposition is accounted for by modalization, that is the subtype of modality. On the other hand, proposal is concerned with the meaning of the positive and negative poles in prescribing and proscribing. Proposal is accounted for by modulation, the second subtype of modality.

2.4.2.1. Modalization

Halliday (1994, p. 89) notes that modalization is concerned with the meaning ranging between the positive and negative poles, between asserting and denying: positive it is so, negative it isn't so. Modalization is the speaker's judgment to proposition or information commodity which is used in communication or interaction. Modalization divides into probability and usuality.

a. Probability

Thompson (1996, p. 57) notes that probability is how likely it is to be true. It means that how the sentence is equivalent to either yes or no, for instance, maybe yes or maybe no, with different degree of likelihood attached. Some of the basic points of probability scale are: possible - probable - certain. That scale confirms that possible is lower than probable, and probable is again lower than certain. It means that certain is more convincing than probable and possible.

Probability can be expressed in three ways: finite modal operator, modal adjunct, and the combination of both finite modal operator and modal adjunct.

- 1) Probability which is expressed by finite modal operator.
 - a) This guy may be a new comer. (Probability)
 - b) He might join in our class. (Doubt)
 - c) He must be from the same department. (Certainty)
- 2) Probability which is expressed by using modal adjunct:
 - a) He is possibly a migration student. (Uncertainty)
 - b) He probably joins us in this department. (Probability)
 - c) He is certainly from the same department. (Certainty)
- 3) Probability which is expressed by using both finite modal operator and modal adjunct:
 - a) The doomsday will possibly come in 2012. (Possibility)
 - b) The doomsday will probably come next year. (Probability)
 - c) The doomsday will certainly come on Friday. (Certainty)

b. Usuality

Usuality is one of the sub-types of modalization which lies between two poles yes and no, which is associated with the frequency of a process. Thus, usuality can be probed by a question *How frequently does the process take place?* So, in usuality the sentence can be realized by sometimes yes or sometimes no.

Halliday (1994, p. 89) postulates that the degrees of usuality may be represented ranging from sometimes, usually, and always. Sometimes has the lowest degree and usually has a higher degree than sometimes and always has the highest degree. Usuality can also be expressed in three ways. They are by finite modal operator, modal adjunct, and the combination of both finite modal operator and modal adjunct.

- 1) Usuality which is expressed by finite modal operator.
 - a) Every morning Jane will have breakfast at seven o'clock.
 - b) When he was a small boy, he would/used to fish in the river on Sunday.
 - c) Water will boil at 100 degrees centigrade.
- 2) Usuality which is expressed by modal adjunct.
 - a) Jane sometimes has breakfast at seven o'clock in the morning.
 - b) When he was a small boy, he usually fished in the river on Sunday.

- c) The young boy always comes to his girlfriend's house on Saturday night.
- 3) Usuality which is expressed by both finite modal operator and modal adjunct.
- a) Jane may sometimes have breakfast at seven o'clock in the morning.
 - b) When he was a small boy, he would usually fish in the river on Sunday.
 - c) If we go to the village, my son will always climb the rambutan tree.

2.4.2.2. Modulation

Modulation is concerned with the meaning of a proposal in the positive and negative poles in prescribing and proscribing (Halliday, 1994, p. 89). There are two kinds of intermediate possibility depending on the speech function, whether command or offer. In a command, the intermediate points represent degrees of obligation, while in an offer, they represent degrees of inclination.

a. Obligation

Obligation is one of the subtypes of modulation which is used in a command which lies between yes and no. In a command, it concerns the degree of obligation on the other person to carry out the command, which can be scaled by allowed to, anxious to, and determined to. In this case, the degrees of obligation is ranged from the lower scale into the higher scale. It means that allowed to has a lower value than anxious to, while anxious to is lower than determined to. Thus, determined to has the highest value than allowed to and anxious to. Thompson (1996, p. 57) notes that in a command, the scale for demanded goods and services includes permissible, advisable, and obligatory. Obligation can be expressed by a finite modal operator or by an expansion of the predicator typically by a passive verb or an adjective.

- 1) Obligation expressed by a finite modal operator:
 - a) The students may submit their assignment next week.
 - b) On the final examination day students should wear uniforms.
 - c) Students must leave all books outside the examination room.
- 2) Obligation expressed by a passive verb:
 - a) The students are allowed to submit their assignment next week.
 - b) On the examination day students are advised to wear uniforms.
 - c) Students are obliged to leave all books outside the examination room.
- 3) Obligation expressed by an adjective:

- a) The students are permissible to submit their assignment next week.
- b) On the examination day students are advisable to wear uniforms.
- c) Students are obligatory to leave all books outside the examination room.

b. Inclination

Inclination is a subtype of modulation which concerns the degree of willingness of a speaker to do something. Inclination also lies between positive and negative polar. Halliday (1994, p. 89) proposes that in an offer, the modality used represents the degrees of inclination ranging from willing to, anxious to, and determined to. The scale means that willing to is the lowest degree of inclination, anxious to carries the sense of stronger inclination, and determined to carries the strongest sense of inclination.

Thompson (1996, p. 57) adds that in an offer, the modality concerns the degree of willingness or inclination of the speaker to fulfil an offer. In inclination, the speaker may signal ability, willingness, and determination. Ability implies someone's ability to do something with minimum inclination, willingness implies stronger inclination, and determination is the strongest inclination.

Inclination also can be expressed in two ways as follows:

- 1) Inclination which is expressed by finite modal operator.
 - a) Most men can swim in this lake.
 - b) They will swim across the lake.
 - c) They must swim across the lake within ten minutes.
- 2) Inclination which is expressed by an expansion of the predicator typically by an adjective or a participle.
 - a) Most men are able to swim in this lake.
 - b) They are willing to swim across the lake.
 - c) They are determined to swim across the lake within ten minutes.

In addition, modulation, either positive or negative, refers to the exchanges of goods and services between the speaker and the hearer in doing something:

- 1) Offering to do something: Shall I go home?
- 2) Requesting the listener to do something: Would you open the door?
- 3) Suggesting that they both do something: Let's go home.
- 4) The above kinds rarely have third person subjects, except as prayers or oaths.

2.4.3. Form of Epistemic Modality in SFL

What is the nature of these systems? Since modality is an expression of indeterminacy, it might be expected that the systems themselves would be notably indeterminate; but they are no more so than grammatical systems in general. The system of probability is one which to explore further. As we have seen, probability may be construed by Finite operators, by modal Adjuncts, and by a combination of the two. We can therefore set up the following paradigm.

Table 2.3 Form of Epistemic Modality in SFL

	Finite operators	Modal adjunct	Combination of the two
certain	that must be true	That's certainly true	That must certainly be true
Probable	That will be true	That's probably true	That will probably be true
Possible	That may be true	That's possibly true	That may possibly be true

Note. Adopted from Halliday (2004: 148)

a. Modal Operators

Modal operators is one of the two types of the finite operator in English that expresses positive or negative. Modal Operator relates to words that denote possibility. The words are listed in the following table:

Table 2.4 Modal Operators in SFL

	Low	median	High
positive	can, may, could, might, (dare)	will, would, should, is/was to	Must, ought to, need, has/had to
negative	Needn't, doesn't/didn't + need to, have	Won't, wouldn't, shouldn't, (isn't/wasn't to)	Mustn't, oughtn't, can't, couldn't, (mayn't/mightn't, hasn't/hadn't to)

Note. Adopted from Halliday (2004: 116)

b. Modal Adjunct

The modal adjuncts, which according to Halliday, 'express the speaker's judgement regarding the relevance of the message' (pp. 49-50; 49 of his introduction). Modal adjuncts are further divided into mood and comment adjuncts. As modal adjuncts involve the judgment of the relevance of a message, they are clearly important for the analysis. One can, for example, note the modal adjuncts in a passage, and ask oneself whether, or to what extent, they express or colour the opinions or perspectives (whether purely subjective or to an extent based on

external evidence) of the writer in writing. The modal adjuncts presented in the following table:

Table 2.5 Modal Adjunct in SFL

	Type	Meaning	Examples
I	Probably	How likely?	Probably, possibly, certainly, perhaps, maybe
	Usuality	How often?	Usually, sometimes, always, (n)ever, often, seldom
	Typically	How typical?	occasionally, generally, regularly, for the most part
	Obviousness	How obvious?	Of course, surely, obviously, clearly
II	Opinion	I think	In my opinion, personally, to my mind
	Admission	I admit	Frankly, to be honest, to tell you the truth
	Persuasion	I assure you	Honestly, really, believe me, seriously
	Entreaty	I request you	Please, kindly
	Presumption	I presume	Evidently, apparently, no doubt, presumably
	Desirability	How desirable?	(un)fortunately, to my delight/distress, regrettably, hopefully
	Reservation	How reliable?	At first, tentatively, provisionally, looking back on it
	Validation	How valid?	Broadly speaking, in general, on the whole, strictly speaking, in principle
	Evaluation	How sensible?	(un)wisely, understandably, mistakenly, foolishly
Prediction	How expected?	To my surprise, surprisingly, as expected, by chance	

Note. Adopted from Halliday (2004: 82)

2.5. Theoretical Framework

This section provides the summary of essential support of theories that lies in the context of this study. The analysis of epistemic modality in this study was based on the following theoretical framework.

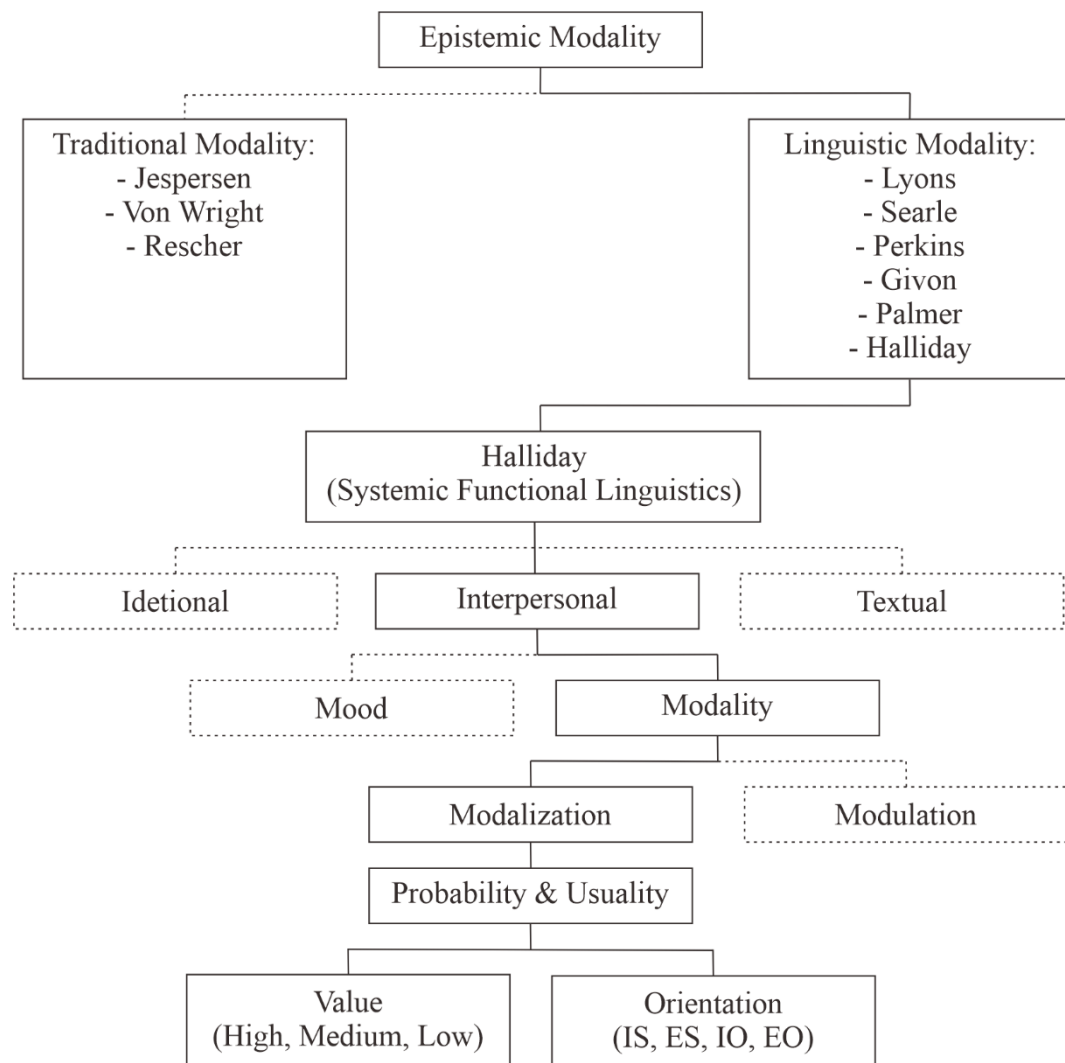


Figure 2.1 Theoretical Framework

————— = scope of the study

- - - - - = Not scope of the study

There is a wide range of theoretical approaches to the study of modality, from the early studies which concern traditional modal logic (Jespersen, 1924; Von Wright, 1951; Rescher, 1968) to Linguistic modality (Lyons, 1977; Searle, 1979; Perkins, 1983; Givon, 1989; Palmer 1986, 1990). Therefore, this study's notion of epistemic modality derives from the theory of epistemic modality in Halliday's Systemic Functional Linguistics (2004). The use of SFL is considered to take into account the research aims. Halliday (2004) proposes that SFL views language as a social semiotic resource people use to accomplish their purpose by expressing meaning in context. As Halliday (1978, p. 10) points out, "the context of the

situation is a theoretical construct for explaining how a text relates to the social processes within which it is located". Therefore, language must be studied in context, such as the context of formal written English used in the theses. Moreover, SFL includes semantics and pragmatics. Halliday (1985) developed a theory of the fundamental functions of language. The SFL semantic component is construed as three meta functions: ideational, interpersonal, and textual. Of the three, interpersonal meta function is the part in which modality is explored. The interpersonal metafunction of language in SFL refers to the use of language to interact with other people, to establish and maintain a relationship with the audience, to influence their behavior, to express the speaker or writer's viewpoint on things in the world, and to elicit or change the audiences' viewpoints. In SFL, modality is an important system that realizes part of the interpersonal metafunction and thus the appropriate use of modality is critical to successful communication. The system of modality is also differentiated into two sides, modalization and modulation. Modalization is the term used to describe degrees of probability and certainty, while modulation refers to degrees of obligation and inclination. Since this study is about epistemic modality, modalization would be the related term. In SFG, modalization is also constitute of two categories, probability and usuality. Each category would be analysed based on the value and orientation that are also based on Halliday's framework. This framework identifies the epistemic markers in three different level of values (High, low, medium) and four different types of orientation (Subjective implicit, subjective explicit, objective implicit, and objective explicit). The analysis of the corpus was done quantitatively and qualitatively. The quantitative analysis resulted in the frequency, the value and orientation of epistemic markers in each corpus. The qualitative analysis resulted in the explanation of the function of epistemic modality in the corpus and other epistemic markers which might have not been studied.

2.6. Conceptual Framework

In addition to the theoretical framework, this study also illustrates the study in graphical conceptual framework. This conceptual framework describes the way of the study was conducted. As mentioned in the previous chapter, this study investigates the use of epistemic modality in applied linguistics theses written by Indonesian doctoral students at English-native universities compare to who are at Indonesian national universities.

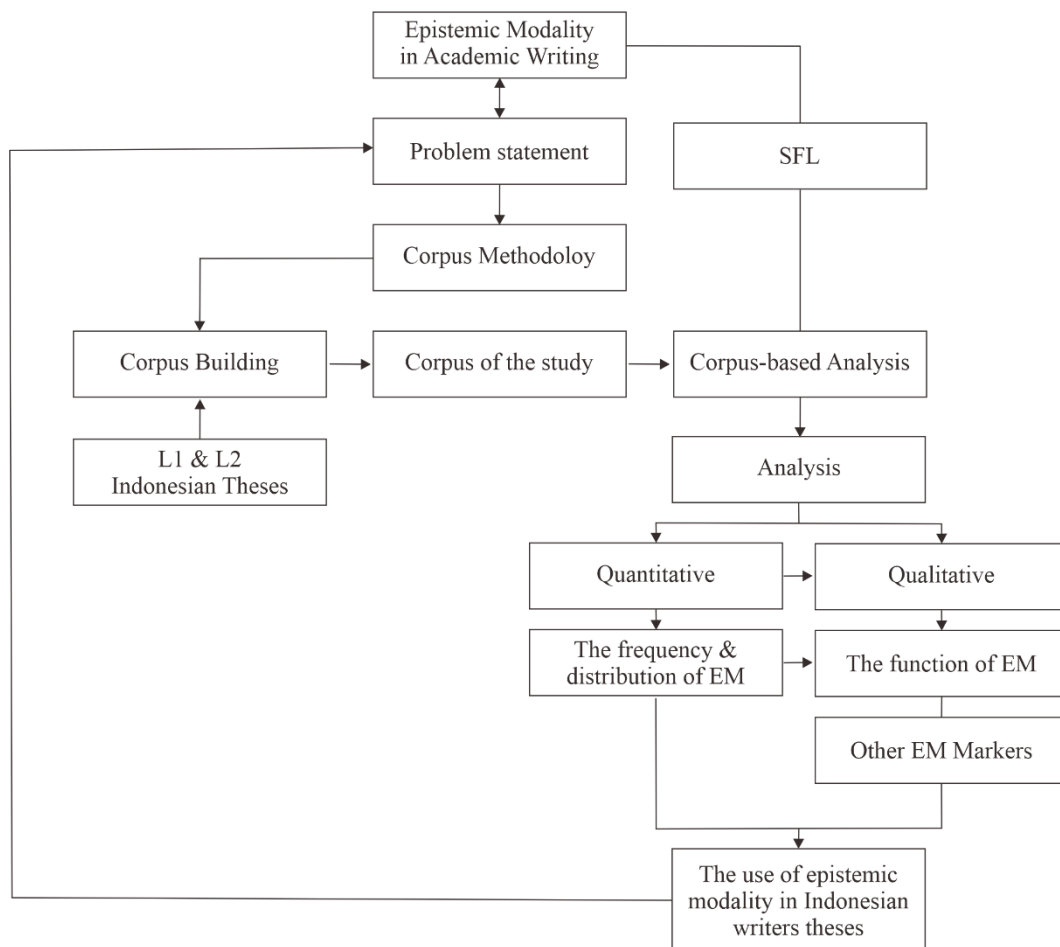


Figure 2.2 Conceptual Framework

The context of the study is the use of epistemic modality in academic text, in this case thesis written by Indonesian writers. The investigation employs corpus-based study that involve corpus building that resulted in two corpora, the corpus of L1 and L1 Indonesian corpus. The corpus-based analysis, including counting the frequency, concordance, and keyword in context analysis, of epistemic modality is based on the framework of systemic functional linguistic as explained in the theoretical framework. The result of corpus-based analysis are further analysed quantitatively and qualitatively. The quantitative analysis was conducted through statistical inference application, while the qualitative analysis was conducted through sentence analysis which also based on the SFL framework. All analysis came result, as the aim of the study, that picturise the use of epistemic modality by Indonesian writers in their theses.