A cross-disciplinary study of stance markers in research articles written by students and experts

by

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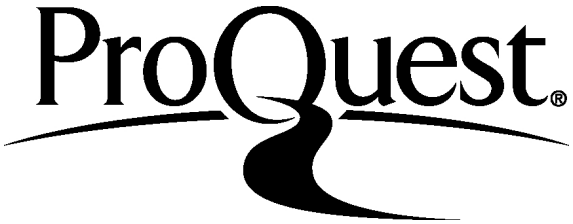

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ABSTRACT

Building on previous studies that suggest notable differences between levels of writing and disciplines, this study investigates stance devices across two parameters: disciplinary differences and academic level of the writer. It investigates disciplinary differences in terms of writer-reader interactions in the domain of academic writing and how disciplinary communities employ stance markers in research articles. This study also examines what strategies student writers and academics employ in terms of identity within their own writing, and how these writers convey their ideas and present themselves. Based on a corpus of 39 academic research articles, this comparative study, following Hyland's (2005a) framework, explores whether four categories of stance features (hedges, boosters, attitude markers, and self-mentions) show any similarities and differences across the disciplines of Civil Engineering and Applied Linguistics and student and expert writing. The results showed that student writing featured more stance markers than those written by academics, although the differences were small. Moreover, the results revealed cross-disciplinary differences in terms of the frequency of stance markers. The Applied Linguistics research articles contained more stance markers than those in Civil Engineering with a large discrepancy particularly in the use of self-mentions. Findings from this research may help inform student writers and writing instructors about the use of stance markers in academic research articles and help particularly students promote their way of presenting their opinions and themselves in the text.

CHAPTER 1. INTRODUCTION

Since the 1990s, there has been a remarkable increase in treating academic writing, which was previously seen as a faceless discourse, as texts that embody interactions between readers and writers. The view that written texts involve interactive relationships enabling writers to develop an appropriate relationship to support the significance and originality of their work is now well established and has been examined in a plethora of studies (Ansarin & Aliabdi, 2011; Hyland, 2002a, 2005a; Thompson, 2001).

With this growing interest in academic writing, the concept of metadiscourse, which was defined as 'discourse about discourse' in earlier studies, has come to be seen as the representation of the relationship between writers and readers and the ways writers express themselves and convey writer personality (Hyland, 2005c). Researchers of scholarly writing have attempted to refer to this relationship using a variety of terms and described it as *evaluation* (Hunston & Thompson, 1999), *appraisal* (Martin, 2000), *epistemic modality* (Hyland, 1996b), *stance* (Biber & Finegan, 1989), and *metadiscourse* (Hyland & Tse, 2004).

The notion of metadiscourse has been motivated by the idea that writers do not simply report their research findings objectively, but express attitudes, personalities and assumptions as a form of a social and communicative engagement. This could be seen in the distinction between interactive and interactional metadiscourse proposed by Hyland and Tse (2004). While interactive metadiscourse is concerned with the organization of propositional meaning such as transition markers, the second dimension, interactional metadiscourse, is related to how writers express themselves and engage their imagined audience.

When studies on the interaction between readers and writers were first undertaken, a great deal of this work tackled how females and males write and the differences in L1 and L2 contexts (Kuhi et al., 2012). Additionally, most studies were conducted to examine how academic writers involved themselves in their texts by making comments on the credibility and accuracy of their claims across different disciplines (Biber, 2006; Hyland, 2002b; Ivanic & Camps, 2001; Vassileva, 1998) and different cultures (Dahl, 2004; Martinez, 2005; Shelden, 2009; Vassileva, 2001).

To investigate interaction between writers and readers, many studies turned their attention to academic research articles either focusing on student writing or examining published research articles. Looking at research articles was of interest because scientific discourse was believed to consist of both institutional and individual goals; as Hyland (1996b) pointed out, "A research paper not only extends understanding of phenomena and theories that the current paradigm deems worthy of study, but also helps support or establish the personal reputation of the writer" (p. 435). Writers achieve this personal reputation through reader acceptance and building a relationship with the audience.

The analysis of academic texts and interaction between readers and writers consist of looking beyond grammatical structures emphasizing social engagement through which writers convey personal attitudes and ideas to reach their audience. However, the process of writers' projecting themselves into texts is not an easy process for either native writers or foreign language learners because, as Abdollahzadeh (2011) pointed out, metadiscourse markers and discoursal effectiveness are not overtly taught in school. Therefore, it is important that further research studies examine interactional relationships in different texts and disciplines in the future (Abdollahzadeh, 2011).

Coinciding with Abdollahzadeh's (2011) argument, several studies have turned their attention to the disciplinary use of stance devices (Abdi, 2002; Adams & Quintana-Toledo, 2013; Hyland, 2005a, 2011; McGrath & Kuteeva, 2012; Pho, 2008; Silver, 2003; Vassileva, 2001). Stance, or the expression of the writers' voice in the text, constitutes the first category of interactional metadiscourse in Hyland's (2005a) framework and has been frequently examined in academic writing for the last three decades. Similar to metadiscourse, the notion of stance has been approached under various terms, including *evidentiality* (Chafe & Nichols, 1986), a*ffect* (Ochs & Schieffelin, 1989), *stance* (Biber & Finegan, 1988; Hyland, 1996b, 2005c), *appraisal* (Martin & White, 2005) and *hedges* (Brown & Levinson, 1987). Despite these different labels, these researchers all have examined the ways writers convey their opinions and judgments and how writers conduct interaction with their audience.

Researchers have carried out studies adopting one of these approaches to stance, but these studies have derived from different perspectives and methodologies. Some approaches to stance, such as *evidentiality* and *affect*, have focused on only one dimension of the concept of stance. For example, *evidentiality* has focused on evaluation of knowledge, while *affect* has been primarily concerned with expressions of emotions and attitudes (see Gray & Biber (2015) for a discussion). *Appraisal*, on the other hand, is an approach that encompasses many types of meaning and has primarily been applied to qualitative studies. Another approach to stance, Biber's (2006) corpus-based framework, is concerned with grammatical categories and different meanings represented within these grammatical categories. Biber's (2006) stance framework has been applied to quantitative studies; however it is difficult to apply with texts which have not been annotated with grammatical information. In contrast, Hyland's (2005a) stance framework is organized around types of stance meanings rather than focusing on the linguistic forms with a list

of target items which could occur with those meanings. Thus, it is ideal to use Hyland's (2005a) framework for a concordancer-based study of a small corpus. Given that this study explores stance-taking on both qualitative and quantitative bases using a concordancer to analyze a small corpus and examines types of stance meanings, Hyland's (2005a) stance framework is found to be ideal to use in this study.

In order to explore expressions of stance-taking, some studies paid attention to understanding stance-taking in one particular field of study (Abdollahzadeh, 2011; Adams & Quintana-Toledo, 2013; Ahmad & Mehrjooseresht, 2012; McGrath & Kuteeva, 2012; Salager-Meyer, 1994), while some examined disciplinary differences and focused on either soft fields or hard fields (Abdi, 2002; Hyland, 2005a, 2006b; Kong, 2006; Millan, 2008; Pho, 2008; Sayah & Hashemi, 2014; Silver, 2003; Taki & Jafarpour, 2012; Vassileva, 2001; Vold, 2006a). The analysis of stance markers across disciplines has revealed that each discipline has its own way of constructing stance and that even different disciplines under the same category (hard and soft sciences) indicated different uses of stance features.

These studies on disciplinary differences have motivated researchers to examine stance-taking strategies in novice and expert writing. The ways stance is approached in research studies on student and expert writing have ranged from comparing the level of writer to conducting interviews to understand students' feelings about presenting themselves as an authority and finding out the challenges that students face when they express their opinions in the text (Beaufort & Williams, 2005; Clark & Hernandez, 2011; Dias and Paré, 2000; Hyland, 2004; McCarthy, 1987). The findings of these studies revealed differences between novice and expert writers in terms of frequencies and use of stance markers. Specifically, student writers, especially in the hard sciences, did not employ stance markers as frequently as academics did and refrained

themselves from constructing an authorial identity. Expert writers, on the other hand, utilized richer stance markers and built up a convincing authorial voice in the text.

Despite the abundant comparisons of novice vs. expert writing and cross-disciplinary research on academic writing and the employment of stance markers, a complementary contribution could still be made to compare student and expert writing and two disciplines. Given that we know 'soft' fields (applied linguistics, sociology, philosophy) and 'hard' fields (engineering, biology) represent themselves, their audience and disciplines using different stance markers (Becher 1989; Hyland 2011), and that novice writers and experts construct stance in research articles differently (Aull and Lancaster, 2014; Barton's, 1993; Beaufort & Williams, 2005; Hood, 2004; Hyland, 2004, 2005b) this study explores stance-taking in the disciplines of Applied Linguistics and Civil Engineering and investigates how academics and student writers make use of expressions of stance when writing an academic research paper.

1.1 Purpose of the Study

The aim of this study is to explore stance devices across two parameters: disciplinary differences and academic level of the writer. It investigates disciplinary differences in terms of writer-reader interactions in the domain of academic writing and how disciplinary communities employ stance markers in research articles. This study also examines what strategies student writers and academics employ in terms of identity within their own writing, and how these writers convey their ideas and present themselves. First, it is intended to investigate how stance markers are used in research articles across two disciplines. More specifically, the disciplines of Civil Engineering and Applied Linguistics are chosen for this study. These disciplines are believed to represent the hard and soft sciences and are expected to differ in their stance-taking strategies. The second objective is to better understand how graduate students and academics in

these two disciplines make use of stance markers. Following the first dimension of Hyland's (2005a) model of interaction, the present study focuses on quantitative and qualitative analyses of stance features occurring in student and expert writing including two different academic disciplines to explore to what extent those markers are used differently and study possible cross-disciplinary differences in the domain of academic writing. Additionally, this research investigates whether or not graduate students' research papers make use of the same discoursal elements for constructing stance in their writing when compared to published research articles in their discipline.

1.2 Outline of the Thesis

This study consists of five chapters. Theoretical views on the definition of stance, existing research on stance markers in research papers written by academics and students across disciplines, and the theoretical framework adopted in this study are reviewed and explored in Chapter 2. The last part of the chapter provides the research questions addressed in this study. The third chapter, Methodology, presents the research design and the types of analyses utilized to answer each research question. Chapter 4 reports the results of the quantitative and qualitative data analyses and provides a discussion of the results. In order to summarize the results, Chapter 5 summarizes the main findings with implications for future researchers. Additionally, this final chapter highlights the limitations of the study and provides suggestions for future research.

CHAPTER 2. LITERATURE REVIEW

The purpose of this chapter is to define the terms interaction and metadiscourse and explain the first category of interaction model (stance) that is used in this study. This chapter presents the theoretical framework in this study and addresses existing research on stance features. Finally, the chapter ends with the statement of three research questions addressed in this study.

2.1 Early Approaches to Written Communication

The notion that written communication is more than exchanging ideas and consists of not only informative, but interactional aspects of language is not new and even dates back to 1923 when the anthropologist Malinowski argued that the acts of communication and interaction should be analyzed in the social context in which they occurred (Wetherell et al., 2001). Early studies on written communication and analysis of discourse focused mainly on the information conveyed by the writer and was concerned with the activities, ideas, or people in the outside world. As a result, these studies failed to see the internal dialogue between the writers and their audience.

As a reaction to the overemphasized analysis of the informational purpose of the text that has disregarded the communicative and social dimension, the term *metadiscourse* has come to be used to refer to not only how we link our ideas to create cohesion and coherence, but also the ways writers project themselves into the text and the ways readers react to this projection of a shared discourse (Hyland, 2005c). In other words, different from earlier research, researchers taking a metadiscourse approach to writing view writing as a social interaction between writers and readers in addition to showing how cohesion and coherence occur through the use of linguistic markers.

One of the earliest approaches to metadiscourse is the model developed by Sinclair (1981). Sinclair emphasized the interactional dimension of language and proposed a two-fold process: planes of discourse (Sinclair, 1981). This model consisted of an interactive plane and autonomous plane. The interactive plane refers to negotiation between participants in a text, and tactics used by writers to communicate effectively, and signals of attitude towards the readers and the content. The autonomous place, on the other hand, concerns the language use and the organization of the text. In a different model of metadiscourse, Goffman (1974) introduced the term *frame* to refer to how language functions between writers and readers and highlighted the interactional aspect of language use. Frames in communication are concerned with the relationship between the actors in a text and how these actors cognitively and conceptually interpret particular situations.

The concept of metadiscourse and the models of planes of discourse and frames have emerged due to the limited approaches to studying communication in written text. Early studies on analysis of written discourse devoted their attention to how information is communicated through grammatical structures and how writers express propositional meaning. This lack of attention to the social engagement between writers and their audience led researchers to focus on the interactional aspects of language use and motivated them to adopt interaction-oriented approaches in future studies.

2.2 An Interaction Model for Academic Writing

One recent metadiscourse model has been developed by Hyland and Tse (2004). Arguing that the term metadiscourse has wrongly been defined as 'discourse about discourse' in early studies, they characterized the notion of metadiscourse as an umbrella term that consists of various linguistic devices used to engage readers, demonstrate authorial identity, and signal

attitudes. In other words, metadiscourse comprises the exchange of ideas, personalities, and attitudes between the actors in the text, and positions communication as social engagement with an emphasis on the function-oriented perspective to written text. Hyland and Tse (2004) point out that metadiscourse (a) refers to aspects of the text which embody writer-reader interactions, (b) refers only to relations that are internal to the discourse, and (c) is distinct from propositional aspects of discourse.

The metadiscourse model introduced by Hyland and Tse (2004) recognized two dimensions of metadiscourse. This distinction was first introduced by Thompson (2001), who used the terms i*nteractive* and *interactional* to refer to two aspects of internal discourse. Interactive dimension, in Thompson's framework, referred to the ways writers managed the flow of information, while the interactional aspect was concerned with writers' conducting explicit interaction with their readers. Building on the previous models of metadiscourse, Hyland and Tse (2004) expanded what Thompson (2001) proposed and introduced sub-categories of the interactive and interactional resources. According to Hyland and Tse, the first dimension, the interactive resources, involves ways of organizing discourse and helps to guide readers through the text through the use of transitions (*in addition*), frame markers (*to conclude*), endophoric markers (*in section 2*), evidentials (*according to X)* and code glosses (*such as*). The second dimension, the interactional resources, consists of five categories: hedges (*might*), boosters (*definitely*), attitude markers (*I agree*), self-mention (*I, we*) and engagement markers (*you can see that*). These five categories under the second dimension of interaction are concerned with the ways that writers make their views explicit and how they conduct interaction and involve readers through the use of stance and engagement markers. Hence, in academic texts such as research articles, the notion of metadiscourse is particularly seen as important in facilitating

communication, engaging the reader, announcing the author's intentions and building a relationship with an audience. When used strategically in academic writing, metadiscourse may help a knowledge claim be accepted by its readers (Hu and Cao, 2011).

The second dimension of the metadiscourse model, interactive resources, is of interest in this study, so it is worth a closer look at the notion of interaction. The view of interaction in writing as consisting of linguistic mechanisms that are used to convey messages and feelings by writers has become an increasing area of research in recent years. In this growing interest in the potential of establishing connections between readers and writers, the concept of interaction has been treated under different labels such as *stance* (Biber & Finegan, 1989), *hedging* (Hyland, 1998), *evidentiality* (Chafe & Nichols, 1986) and *appraisal* (Martin, 2000). Despite the fuzziness of the term, researchers have focused on investigating how writers involve their readers and themselves in the communication process (Hyland, 2005b).

Having argued that understanding spoken or written texts should be considered as a form of social engagement, Hyland (2005a) has built on the metadiscourse model Hyland and Tse (2004) introduced and proposed an interaction model in order to address the conflicting definitions and ambiguous explanations surrounding the term *interaction.* He divided interactional elements, the second element of the metadiscourse model, into two categories: stance and engagement markers as shown in Figure 2.1. Unlike Hyland and Tse (2004), who treated hedges, boosters, attitude markers, self-mention and engagement markers under the same category (interactional resources), Hyland (2005a) divided interactional resources into two dimensions: stance and engagement markers. The first dimension of interactional resources consists of hedges, boosters, attitude markers and self-mention, while the second dimension,

engagement markers includes reader pronouns, directives, questions, shared knowledge, and personal asides.

Interaction	Stance	Hedges Boosters Attitude markers Self-mention
	Engagement Markers	Reader pronouns Directives Questions Shared knowledge Personal asides

Figure 2.1. A model of interaction (adapted from Hyland, 2005a)

The interaction between readers and writers can be accomplished in several ways and thus studies have focused on different linguistic features to investigate how writers create interaction in texts. Some research on interaction presented how writers constructed identity through self-mentioning markers (Ivanic, 1998), and some focused on engagement markers employed by female and male participants to examine gender differences (Kuhi et al., 2012). In another study, for the purpose of investigating a cross-linguistics variation of stance features in the results and discussion chapters of Master's theses written in English and Spanish, Lee and Casal (2014) analyzed a corpus of 200 chapters written by English and Spanish engineering students. Using Hyland's (2005a) interaction model, discussion and results sections of engineering theses were compared to each other to examine the influence of linguistic and cultural factors on student writers' use of metadiscoursal resources.

As already stated, researchers have opted for different terms such as *evaluation, metadiscourse* or *stance* to examine how writers present themselves in the text. Narrowing down this terminological variation, stance markers under the model of interaction developed by Hyland

(2005a) will be the focus of this study. Given that stance devices have been investigated more than engagement markers in several studies in the literature and that they have found differences across disciplines and levels of writing as shown in the following section, this study explores the use of stance features including four-sub categories across disciplines and two types of writing. The following section presents a more detailed review of previous research on stance devices.

2.3 Stance

Within the vast literature on interaction, the notion of stance has remained somewhat elusive because of the inequivalent definitions and categorizations across scholarly works under the concept of stance (Adams & Quintana-Toledo, 2013). Over the last three decades or so, researchers have used a variety of terms to refer to the concept of stance including *evaluation* (Hunston & Thompson, 1999), *affect* (Ochs & Schieffelin, 1989), *hedging* (Holmes, 1988; Hyland, 1996a, 1996b; Salager-Meyer, 1994, 1995), *evidentiality* (Chafe & Nichols, 1986; Nuytz, 2001), *modality* (Palmer, 1979) and *stance* (Beach & Anson, 1992; Biber & Finegan, 1988; 1989; Biber, et al., 1999; Hyland, 2005a). Despite using different names to refer to stance, researchers sought the ways writers create a social world using linguistic choices to project their opinions and evaluations into a text and engage their audience and signal relationship.

The concept of stance has originally developed out of the notion of evidentiality that was developed by Chafe and Nichols (1986) (Gray & Biber, 2012). Evidentiality is concerned with understanding the source of information and the assessment of its reliability. In Chafe's terminology, evidentiality consists of the speakers' attitude toward reality, their taking responsibility for the context of an utterance and making the source of knowledge (Chafe & Nichols, 1986). According to Chafe and Nichols (1986), evidentiality is comprised of various

modes such as expectation, belief and deduction, all of which could be realized through the use of linguistic strategies that writers and readers use to realize the truth of an assertion.

Another approach to stance was understanding affect in language. Ochs and Schieffelin (1989) built upon the previous research on emotion that focused on how our feelings impact cognition and proposed a framework to understand how discourse and grammatical structures display affect (Ochs, & Schieffelin, 1989). In other words, unlike the evidentiality approach, these researchers were concerned with how affect, including the emotions, attitudes, and moods of writers is displayed through linguistic signals.

In another approach to stance, Biber and Finegan (1988) argued that how speakers and writers evaluate knowledge and how affect is realized through linguistic means could be treated under the same concept. They also studied several functions of stance adverbials such as actuality (*in fact*), certainty (*of course*) and generalization (*in general*) under the notion of stance. Biber and Finegan (1989) extended their analysis of stance and distinguished evidential and affective marking of stance. According to this model, evidential stance concerns the degree of certainty of an expression, while affective stance is related to emotions and attitudes expressed towards a statement.

Hyland (2014) uses the terms evidentiality and affect similarly to what other researchers have done so far, but adds another component to the conception of stance. According to Hyland, stance consists of three main components: evidentiality, affect, and relation. Evidentiality in Hyland's terminology refers to writers' commitment to the truth of statements, the degree of confidence, and the reliability of the propositions. The second component, affect, concerns the feelings and beliefs of writers and the degree of engaging with the audience including remoteness and intimacy. The third component, relations, is used in explaining the relation

between writers and readers and is related to how writers discursively construct the presence of their readers. Hyland (2005a) put forth a taxonomy of stance encompassing the conceptions of stance provided above. This paradigm of stance consists of four categories: hedges, boosters, attitude markers, and self-mention. Although he does not use the traditional terms of evidentiality and affect, this scheme encompasses the corresponding concepts.

Building upon traditional accounts of affect and evidentiality, Martin and White (2005) developed a new approach to stance within Systemic Functional Linguistics (SFL) and using the Appraisal framework (an approach to exploring language use to construct stance and manage interpersonal relationships) investigated how actors in a text construct stance toward the content and writers/speakers they interact with. Likewise, in her study using the appraisal framework, Gales (2011) states that appraisal consists of three systems including attitude, evaluation and graduation. The first system, attitude, is related to positive and negative feelings and encoding particular emotions. The second category concerns the judgment of behaviors. The final category characterizes the strength of their utterances. This appraisal framework examines how stance functions in terms of emotions of the writer, intensification of statements and writers' commitment.

These aforementioned approaches to stance have significant implications for the way we view how writers adopt stance toward the content and audience. However, although all these approaches are concerned with the way interaction is constructed between the writer and reader, they differ in their perspectives. For instance, *evidentiality* (evaluation of knowledge) and *affect* (feelings and attitudes) focus on only one dimension of stance. On the other hand, other approaches, including appraisal, Biber's (2006) stance framework and Hyland's (2005a) framework, have been concerned with multiple dimensions of stance. For instance, *appraisal*,

encompassing many types of meaning, has been mostly used in qualitative studies. Biber's (2006) corpus-based approach is organized around grammatical categories and different meanings represented within the grammatical categories; however it is difficult to apply with texts which have not been tagged with grammatical information. Hyland's (2005a) framework, on the other hand, is concerned with more than one dimension of stance with an emphasis on meaning. Additionally, he compiled a list of searchable stance markers based on previous studies like Biber and Finegan (1989), Hyland and Milton (1997), and Holmes (1988). This list of potentially important key items also consists of stance features from dictionaries, grammars, and research articles. Hyland's (2005a) stance devices in the model of interaction have been selected as the framework of this study because he built upon what previous researchers suggested, compiling an extensive list of stance markers that could be analyzed using a basic concordancer and examined stance-taking specifically in academic writing. Thus, the working definition for stance in this study corresponds to Hyland's (2005a) interaction model, where stance is defined as 'an attitudinal dimension that includes features which refer to the ways writers present themselves and convey their judgements, opinions, and commitments.' (p. 176).

According to Hyland's (2005a) framework, stance is comprised of four main elements: (1) Hedges, (2) Boosters, (3) Attitude markers, and (4) Self-mentions.

Hedges are words such as *would, could,* and *possible,* which emphasize that a statement is presented based on a writer's interpretation rather than a fact. They are used to indicate tentativeness in communication and lessen the degree of confidence and precision that the writers prefer to convey. The following example (taken from the corpus used for this study) shows how the adverb *about* functions as a hedge.

1) *The results of sorptivity tests are presented in Fig. 1. It can be seen that sorptivity of concretes with IC at 1 day is* ***about*** *20 percent higher compared with reference concretes for all w/c ratios.* (Civil Engineering, published article)

Boosters, on the other hand, are devices like *actually, clearly* and *surely* which emphasize or deemphasize certainty by allowing writers to avoid conflicting views and stress shared information and group membership. In the following example taken from the corpus of this study, the adjective *clear* functions as a booster.

2) *What is important to note is that it is not* ***clear*** *what such findings from the speech- processing and speech perception literature mean in relation to trained and certified raters who rate speech samples professionally as part of large-scale testing programs.* (Applied Linguistics, published article)

Attitude markers like *important, dramatic* and *amazing* play a key role in revealing writers' attitude toward the subject matter by conveying agreement and signaling shared values. Attitudes to propositions are overtly expressed through the use of attitude verbs (*disagree, prefer*), attitude adverbs (*hopefully, unbelievably*), adjectives (*amazing, shocked*) and punctuation (!). An example of attitude markers taken from the Applied Linguistics corpus of this study is provided below:

3) *It is not* ***surprising*** *to find that both participants went through different experiences using it for the first time.* (Applied Linguistics, student paper)

Self-mention indicates the degree of overt author presence in the text, in particular with the use of first person subject and object pronouns (*I, we, me, us)* and possessive adjectives (*our*) to adopt a particular authorial identity. It refers to writers' explicitly presenting themselves and

projecting their particular identity in academic discourse to construct authorial identity. In the following example, taken from the Civil Engineering corpus of this study, the first-person pronoun, *we*, shows explicit author presence in the text.

> 4) ***We*** *hope that the results of this study will help mitigate the thermal fatigue cracking in flexible pavements*. (Civil Engineering, student paper)

This section illustrated early approaches to written communication and discussed the role of interaction under a metadiscourse model. This section also explored the linguistic marking of stance, focusing on different frameworks in the literature and introducing the framework used in this study (The complete list of stance markers taken from Hyland (2005c) are listed in Appendix A). The following part summarizes previous research on stance devices with an emphasis on disciplinary differences and the level of writer.

2.3.1 Stance in Disciplinary Studies

The question of how academic research papers in different disciplines are written has received a lot of attention and been a long-standing debate for over two decades. Arguing that academic writing is different in different disciplines, Becher (1989) made a distinction between disciplines and labeled them as *hard pure* (natural sciences), *soft pure* (social sciences), *hard applied* (science-based professionals) and *soft applied* (social professionals). Several studies (Abdi, 2002; Abdollahzadeh, 2011; Auria, 2008; Hyland, 2005a, 2011; Pho, 2008; Vold, 2006b) that focused on disciplinary differences based their analysis on this classification and found important differences in terms of stance-taking.

Examining stance either in one particular discipline or making a comparison of different disciplines has grown increasingly popular. Several studies of academic research articles have

dealt with the use of stance features focusing on either one section of a research article such as the introduction or more than one section in a particular field of study (Abdollahzadeh, 2011; Adams & Quintana-Toledo, 2013; Ahmad & Mehrjooseresht, 2012; McGrath & Kuteeva, 2012; Salager-Meyer, 1994). Salager-Meyer (1994), for instance, explored the use of hedges in 15 research articles written in the discipline of Medicine and examined what types of hedges were most frequently used in different sections of medical research articles. The findings revealed that three hedging devices including compound hedges (double hedges), shields (modal verbs expressing possibility), and approximators (quantity, degree, frequency and time signals) were the most frequently used hedges. It was also found that while methodology sections included the fewest hedges, hedges were heavily used in discussion sections. In another study, McGrath and Kuteeva (2012) investigated the use of stance features including hedges, boosters, attitude markers and self-mentions in all sections of pure mathematics research articles. The corpus analysis of 25 research articles suggested that mathematics writers did not make frequent use of stance features. Of the four categories of stance markers, boosters was the most frequently used marker in medical research papers.

A group of studies, on the other hand, has compared stance-taking patterns in published research articles across disciplines (Abdi, 2002; Hyland, 2005a; Kong, 2006; Millan, 2008; Pho, 2008; Sayah & Hashemi, 2014; Silver, 2003; Taki & Jafarpour, 2012; Vassileva, 2001; Vold, 2006a, 2006b). Vold (2006b), for instance, explored the use of epistemic modality markers in research articles written in Linguistics and Medicine and found differences between two disciplines in terms of the types of markers used. In a similar vein, Abdi (2002) explored the use of hedges and boosters in 55 research articles written in the soft (social sciences) and the hard

(natural sciences) disciplines. While he found considerable interdisciplinary differences in the use of hedges, almost no differences were observed in the study in regard to the use of boosters.

In a different study, Abdollahzadeh (2011) explored the expressions of stance in a soft field. He examined the use of hedges and attitude markers in conclusion chapters of 60 research articles written by American and Iranian scholars in Applied Linguistics. Although it was a cross-cultural study, the overall findings revealed that both American and Iranian writers employed hedges more frequently than they did attitude markers. Additionally, Applied Linguistics writers used attitude adjectives and adverbials more frequently than they did attitude verbs. In another soft-field-oriented study, Pho (2008) examined the use of authorial stance in the abstracts of 30 research articles in the fields of Applied Linguistics and Educational Technology. The analysis of authorial voice revealed that the use of stance markers existed in the abstracts particularly through the use of first-person pronouns in both disciplines. In another study, Auria (2008), arguing that the studies have scarcely investigated soft sciences, explored the use of stance devices in the introduction sections of 20 articles written in the disciplines of Applied Linguistics and Information Science. The results of the study indicated discipline-specific conventions with regard to the use of stance markers, despite the fact that a similar number of stance devices were found in the two disciplines.

It is clear from the studies mentioned above that each discipline has its own way of representing itself, its writers, and its readers. This was supported by Hyland (2011), who conducted an extensive study on disciplinary differences in terms of the expressions of stance. He collected 240 research articles from eight hard and soft disciplines: Molecular Biology, Mechanical Engineering, Electronic Engineering, Magnetic Physics, Applied Linguistics, Philosophy, Sociology, and Marketing. The analysis of stance markers revealed that in soft

fields, hedges and boosters were more frequent when compared to hard sciences. This was mainly because scholars in the soft sciences are more interpretative and do not present their material with the same confidence as their counterparts in the hard sciences (Hyland, 2011, p. 204). In a similar vein, the use of self-mention was common in the soft sciences because writers want to get credit for their personal role and claim authority (Hyland 2011, p. 207-208). In the hard sciences, on the other hand, since research work requires significant amounts of money, equipment, and facilities, studies can be conducted in limited locations for longer time periods. Besides that, as people who read research articles work on the same things and know the previous research and the procedures, constructing interaction is not very necessary in the hard fields (Hyland, 2011, p. 203-204). As a result, researchers in the hard fields consider themselves as discovering truth instead of generating it.

Based on the disciplinary differences suggested in the previous studies, this study sets out to examine the extent to which writers in the hard and soft fields, particularly those in Civil Engineering and Applied Linguistics, make use of stance devices in academic research articles. It is hypothesized that Applied Linguistics and Civil Engineering will differ quantitatively and qualitatively in the use of stance markers.

2.3.2 Stance in Student and Expert Academic Writing

Earlier investigations of student writing have mainly focused on the flow of information and textual cohesion (Lancaster, 2012). These analyses of textual characteristics of student writing are important, but they fail to explore how novice writers project themselves into their text. However, recent studies have turned their attention to how student writers use strategies to express certainty, create an authorial-self or gain acceptance in academic writing and how stance features are employed in student-written research articles. Much of this research has focused on

the comparison of writing of first language (L1) and second language (L2) students (Bondi, 2009; Hu & Cao, 2011; Hyland & Milton, 1997; Martin, 2003; Molino, 2010; Schleppegrell, 2004; Swales & Van Bonn, 2007; Vassileva, 1998, 2000, 2001). Hyland and Milton (1997), for instance, collected essays from 900 Cantonese-speaking students and 770 British learners at the end of secondary schooling and compared their L1 and L2 writings. Their findings revealed that L2 writers used more certainty markers, whereas L1 writers employed more uncertainty when putting forth propositions. Similarly, Schleppegrell (2004) examined lab reports of L1 and L2 students in Chemical Engineering and found that L1 writers opted for more objective stance features. L2 writers, by comparison, tended to use subjectively worded stances.

In addition to L1 and L2 comparisons, a number of studies have examined the challenges students generally face when transferring what they know into writing academic research papers (Beaufort & Williams, 2005; Clark & Hernandez, 2011; Dias and Paré, 2000; McCarthy, 1987). In a longitudinal case study, Beaufort and Williams (2005) investigated how an undergraduate student connected himself as a novice writer of history with the community of his discipline over three years and what changes occurred in the student's writing. Upon the examination of the student's essays and interviews with the student, Beaufort and Williams (2005) found that the student had difficulty in connecting to his discourse community in his writing. The interviews revealed that the only discourse community he was involved in was the classroom. This finding was consistent with Wardle (2009), who argued that student writing aims to demonstrate the skills learned in the classroom; therefore students view academic writing as a way to fulfill a course requirement.

These findings undoubtedly provide important implications for the ways we view stance in L1 and L2 comparisons and the challenges that students face when they express themselves

and their opinions in the text. However, one way to better understand stance-taking in novice writing is to take a closer look at the studies that have examined stance markers at different stages of writing development either in one specific discipline or across disciplines (Charles, 2006; Coffin, 2002; Hewings, 2004; North, 2005). Coffin (2002), for instance, examined the developmental path of students' academic writing in historical essays and how they negotiated with their readers. She found that as students progressed into upper-level writing, they adapted different authorial voices. Specifically, they moved from being a recorder, which is characterized by an absence or low frequency of evaluative meanings, in Coffin's terms, to an 'interpreter' voice, which contains more discoursal features (still with an absence of explicit judgment) when compared to a 'recorder'. They finally moved to being an 'adjudicator', which is characterized by frequent use of engagement resources to communicate with the reader. In another study, Hewings (2004) investigated stance-taking among undergraduate students at different stages of development within the discipline of Geography. The results of the study revealed that first-year students used fewer instances of stance when compared to third-year students. These findings suggest that student writers when transitioning to more advanced writers become familiar with the published writing in their discipline and start to use a wider range of evaluative meanings. Thus, examining different levels of writing, specifically the differences between student and expert writing is another way to better understand how novice and experienced writers express their opinions and present themselves in the text.

One of the earliest studies on novice writers' stance-taking is Barton's (1993) investigation of evidentials (modals such as *must*; sentential adverbs such as *possibly*; conjunctions such as *but*; prepositional phrases such as *in fact* and predications such as *I believe that*) in essays written by students and experienced academics. Barton collected 100 student

essays from a variety of disciplines written for a writing proficiency test and 100 argumentative essays from different disciplines that appear in a newspaper. She found that academics used evidentials of contrast (*however, yet*) and established an academic identity with the use of self-mentions as opposed to student writers who built a contrastive stance and used self-mentions to refer only to general American life or members of a culture rather than themselves. These differences between student and experienced academics in stance-taking could be attributed to the fact that they wrote on very different tasks. That is, there may be register differences between student and expert writing that influenced their way of stance-taking.

Similarly, Hood (2004) found differences in the use of evaluative stance between student writers and academics. She analyzed the expressions of students' and academics' behavior (*rude, impolite*), feelings and emotions (*depressed*) and how they appreciate aesthetic qualities of things (*useful*) in the text in the introduction sections of four published research articles that were discussed by six graduate students as part of a class project and six undergraduate dissertations written by the same students. The findings of the study revealed that the students used more linguistic markers to reflect their feelings, behaviors and emotional evaluations. Academics, on the other hand, evaluated the qualities of the material more than students writers did. These findings were consistent with Barton's (1993) findings that student writers presented more personal experiences in their writing. With some interesting parallels to Hood's (2004) and Barton's (1993) study, Hood (2006) argued that expert writers successfully delivered consistent evaluation to support their arguments. Similar findings were also reflected in the interviews with students in Hyland's (2004) study. Hyland found that novice students did not feel comfortable using self-mentions and they found them inappropriate to use in academic writing. Students were

also inclined to use modal verbs including *may* and *could* to present arguments with caution and to avoid expressing obligation to the reader.

In another study, Aull and Lancaster (2014) examined expressions of stance in first-year university students from various disciplines and compared the use of stance to those of upper-level undergraduate student papers and published research articles. The findings suggested that first-year undergraduate students did not employ expressions of stance as frequently as their advanced peers and academics. In another study, Hyland (2005b) explored how writers negotiated relationship with their audience and examined 64 project reports written by senior undergraduate students and 240 published research articles from eight disciplines. The examination and comparison of engagement devices in the two corpora revealed that engagement markers appeared in both student and expert academic writing, but the target devices used by student writers were considerably less frequent than in expert writing. It was noted at the end of the study that reader-writer interaction should be taught explicitly in classrooms to help student be aware of their choices and gain control over their writing.

In short, a growing amount of research shows the differences between novice and expert writers in terms of using expressions of stance and constructing interaction. It was clear in these studies that student writers did not make as much abundant use of stance devices as academics did, refrained from presenting themselves as an authority using self-mentions, and presented material in a descriptive way devoid of stance. Pertaining to these differences between student and expert writers and the challenges that students face in academic writing, researchers need to explore novice and expert writing in more detailed ways. In order to extend the analysis of stance devices and respond to the differences in novice and expert writing, this study attempts to

examine how student and expert writers construct stance in the disciplines of Civil Engineering and Applied Linguistics using Hyland's (2005a) framework of stance devices.

2.4 Research Questions

The present study investigates expressions of stance in academic research articles written by graduate students and academics in two disciplines through the exploration of the following research questions:

1. How are the stance markers proposed by Hyland (2005a) used in similar/different ways across published research articles in professional journals and graduate student research papers?

2. How are the stance markers proposed by Hyland (2005a) used in similar/different ways across the disciplines of Applied Linguistics and Civil Engineering?

3. What might stance markers used in student papers and published research articles across different disciplines reveal about stance construction in academic writing?

CHAPTER 3. METHODOLOGY

This chapter delineates the methodology of the study. Specifically, the chapter begins with an introduction of the corpus collected for this study and describes the four sub-corpora. Then, it describes the types of analyses and processes carried out to answer each of the three research questions.

3.1 Introduction to Corpus

The corpus used in this study comprised one large corpus with four sub-corpora. The data for this study consisted of a corpus of empirical research papers from two disciplines and two different levels of writing. Applied Linguistics and Civil Engineering were chosen as representatives of two different applied fields belonging to the soft and hard sciences respectively. In addition to these two different fields of study, student and expert writing were included as the other two-sub corpora to represent two types of writing. The idea was to study cross-disciplinary differences and to compare student writing to expert writing in terms of the use of stance markers in academic writing. For the purpose of comparing the same register, all of the student papers included in this study were empirical research papers similar to the published research articles. Table 3.1 summarizes the composition of the corpus.

3.1.1 Description of Published Research Articles Corpus

The corpus of published research articles consisted of two sub-corpora: Civil Engineering and Applied Linguistics. Ten research articles from each discipline were collected to be representatives of published research articles. All of the journals that research articles were retrieved from were nominated by a faculty member in each discipline as leading publications in their respective fields. All published articles in both disciplines were selected to meet three criteria: (1) the articles reported on empirical/experimental research, (2) they were published

Table 3.1

General Information about the Corpus

Discipline		**Number of research papers**	**Number of words**
Applied Linguistics	Published articles	10	85,952
	Student papers	10	40,268
Civil Engineering	Published articles	10	41,380
	Student papers	9	41,456
Total:		39	209,056

between the years 2010-2015, and (3) they were written by different authors. In the process of collecting published research papers, articles that specifically had the introduction, methodology, results, and discussion/conclusion (IMRD) structure were chosen to follow the same order as the student writing (see Section 3.3), but this structure was not taken into consideration in the analysis process. Additionally, in the process of selection, any reviews, critique/evaluations, and response papers were disregarded since all the student papers described an empirical process. All 20 published research articles in both disciplines were written by multiple authors.

3.1.2 Published Applied Linguistics Corpus

Ten published research articles in Applied Linguistics were collected from four professional journals on the basis of the guidance of a faculty member in that discipline. The four journals that represented Applied Linguistics were: *Applied Linguistics*, *Language Testing*, *Language Learning*, and *The Modern Language Journal*. The number of research articles in each journal is shown in Table 3.2.

3.1.3 Published Civil Engineering Corpus

To represent Civil Engineering, 10 research articles from three professional journals were chosen under the guidance of a faculty member in that discipline. The journals represented Civil Engineering are: *Journal of Cement and Concrete Research, American Society of Civil Engineers (ASCE), Journal of Materials in Civil Engineering*, and *ASCE Journal of Transportation Engineering*. Table 3.2 below lists the name of the journals and the distribution of research articles over each journal.

Table 3.2

Distribution of Published Articles over Journals

Discipline	**Total number of research articles**	**Name of the journals**	**Number of articles in each journal**
Applied Linguistics	10	*Applied Linguistics*	2
		Language Testing	3
		Language Learning	3
		The Modern Language Journal	2
Civil Engineering	10	*Journal of Cement and Concrete Research*	4
		ASCE Journal of Materials in Civil Engineering	3
		ASCE Journal of Transportation Engineering	3

3.1.4 Description of the Student Corpus

Since one of the goals of this study is to compare novice writing to published writing, student papers that reported on empirical research were collected as a parallel to the published research articles. The student corpus consisted of two sub-corpora containing student papers

from Civil Engineering and Applied Linguistics respectively. Specifically, in order to be able to make a comparison between student papers and published research articles, graduate-level classes which require students to write an empirical report were chosen to be representative of the student writing in this study. All of the 19 student papers consisted of empirical research and followed the IMRD structure.

3.1.5 Student Applied Linguistics Corpus

The student Applied Linguistics corpus consisted of 10 research articles written by different graduate students at a large public university in the Midwest of the USA. These students were graduate students in an Applied Linguistics and Technology (ALT) program and took one of the following courses: Second Language Acquisition, Computer-Assisted Language Learning, and Discourse Analysis courses in the Fall 2014 and Spring 2015 semesters. Since students taking these courses are required to write an empirical research paper as part of course requirements, they were included in the data collection process. Out of these 10 research articles, eight were written by a single author and two were written by two authors. All 10 reports were submitted at the end of the semester and students did not receive any feedback from the instructor in the process of writing. They received feedback from the instructor only once, when they submitted their research paper at the end of the semester.

3.1.6 Student Civil Engineering Corpus

The student Civil Engineering corpus contained nine research articles written by graduate students in Civil Engineering at the same public university. These students enrolled in a graduate-level course run by the Graduate College, called “Preparing Publishable Thesis Chapters” either in the Fall 2014 or Spring 2015 semesters. The course is offered to both international and domestic students who are in the process of preparing thesis/dissertation

chapters to submit to refereed journals or to the Graduate College as part of their degree programs. Focusing on the norms for writing within a student's discipline, this course helps students report on student-generated data regardless of their discipline. This course was selected as the source for the student Civil Engineering corpus since students conduct empirical research and write an empirical report in this course unlike their discipline-specific courses in which they rarely submit full research papers. Similar to the Applied Linguistics students, all of the students in this course submitted their research papers at the end of the semester as the final assignment. However, in contrast to the Applied Linguistics students, Engineering students received feedback from the instructor every time they submitted a different section of their paper throughout the semester. All student papers were written by a single author.

3.2 Procedures for Preparing the Texts

In order to collect graduate student papers from Civil Engineering and Applied Linguistics, the instructors who taught the aforementioned courses invited students via email to participate in the study after the Institutional Review Board (IRB) approval (Appendix D documents the IRB approval). Out of about 30 students who were invited to send their papers for this study, 19 students agreed to email their research papers. Published research articles were downloaded electronically from the journals listed above through the Iowa State University library website.

After gathering all research articles, all 39 papers either in Microsoft Word or PDF format were converted into text files to be compatible with the concordancer. Then, any abstracts, quotations, references, footnotes, tables and figures were excluded from the analysis in the belief that stance-taking does not occur in these parts. Word counts in Table 3.1 above represent the cleaned-up texts.

3.3 Data Analysis

Both quantitative and qualitative analyses of the corpus were carried out in order to answer three research questions presented in the second chapter. This section explains in detail the procedures and the types of analysis utilized to analyze the corpus.

Locating all the occurrences of stance markers in student papers and published research articles in each discipline was the first step in the analysis. This process was accomplished using AntConc (Anthony, 2011), a free online concordancing program. AntConc was used as the corpus analysis toolkit in this study due to several reasons. First, it provides users with an opportunity to upload their own corpora and utilize it to look for target items and choose the list of words or phrases to which they wish to compare across the texts. In addition, it enables users to not only search for individual words, but also examine the linguistic environment search items are used in. It shows how often, where, and in what distribution a key term appears in a corpus of data. Users can view the words surrounding the search term alphabetically. Therefore, AntConc was considered to be a good choice to analyze the stance markers, calculate their frequency, and examine their linguistic environment in different types of writing in the two disciplines. Figure 3.1 provides a screenshot of the concordance results for one of the stance markers explored in this study.

In order to carry out the concordance searches, the list of target items taken from Hyland (2005c) was used. Hyland's list was chosen as the operationalization of stance marking because it encompasses a wide range of terms encompassing many parts of speech. This list includes the four categories of stance markers, each of which contains different number of target items. The first category, hedges, contains verbs (*argue, feels, appeared*), adverbs (*fairly, generally*), modal verbs (*should, might*), and adjectives (*doubtful, uncertain*). The second group of stance devices,

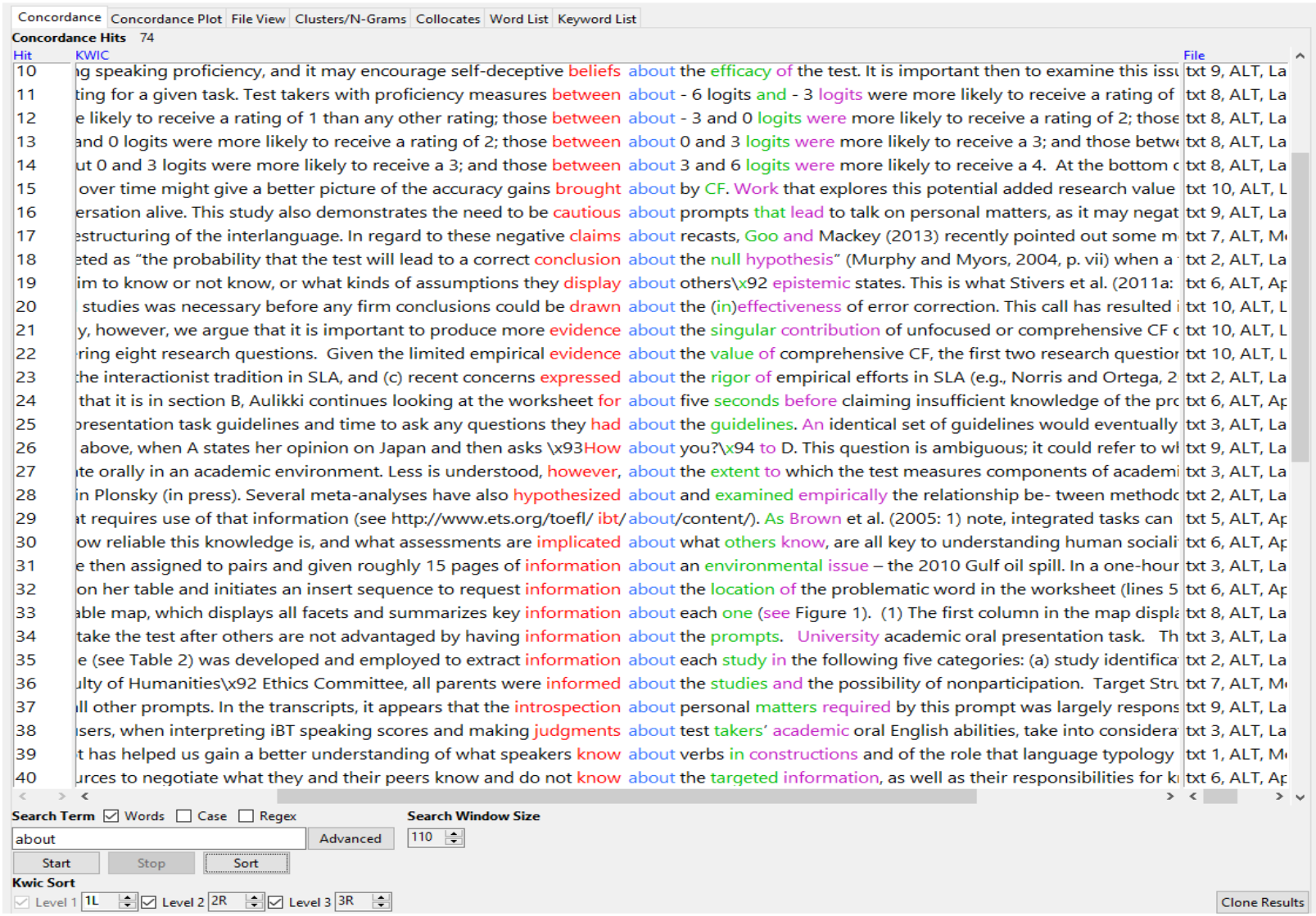

Figure 3.1. A screenshot of concordance results in AntConc

boosters, includes adverbs of certainty (*certainly*, *definitely*, *surely*), verbs (*believe, find, know*), and adjectives (*true, undeniable*). Attitude markers, the third category, consist of adjectives (*interesting, disappointing*), verbs (*disagree, prefer*) and sentence adverbs (*unfortunately*). In addition, an exclamation mark is also considered an attitude marker. The last group, self-mention, comprises first-person pronouns (*I, me*) and possessive adjectives (*my, our*). Appendix A documents the complete list of stance features adopted from Hyland (2005c).

Using the list of target items taken from Hyland (2005c), the analysis of stance markers was carried out in two phases. In the first phase, the frequency of hedges, boosters, attitude markers and self-mentions in expert and student papers in both disciplines was quantitatively examined in order to answer the first and second research question. Each target item was searched for in the corpus. Because Hyland's framework relies on concordancers to match particular target items, it is ideal for analyzing untagged corpora (i.e., texts that are not annotated for part of speech or grammatical information). However, this approach may also identify word matches that are not functioning as stance markers. Thus, for each stance marker searched, concordance lines were carefully reviewed in order to exclude the instances that were not functioning in the target capacity (i.e., not functioning as stance markers). The instances that did not contextually fall into one of those four categories were omitted from further analysis (for examples, see Section 3.3.1 below).

In order to keep a record of frequencies, Excel documents for student and expert writing for Civil Engineering and Applied Linguistics were created. The number of times and in which texts stance markers appeared, and the instances that were excluded from the study, were all documented in the Excel files and used for further analysis. Additionally, this process of keeping a record of stance markers in Excel files enabled the manual analysis of the stance devices.

The second phase of the analysis consisted of qualitative analysis of stance markers and was carried out in order to address the third research question. In this phase the linguistic environment of the key item was examined. Upon completion of these two phases, some concordance lines were chosen to serve as examples. Table 3.3 provides an overview of the analyses carried out in this study to answer each of the three questions.

Table 3.3

Overview of Data Analyses Used for Answering Research Questions

Research Question	**Method(s)**	**Analysis**
RQ1. How are the stance markers proposed by Hyland (2005a) used in similar/different ways across published research articles in professional journals and graduate student research papers?	Quantitative	Label instances as stance markers in published research articles and student papers Calculate the frequency and normalize the data
RQ2. How are the stance markers proposed by Hyland (2005a) used in similar/different ways across the disciplines of Applied Linguistics and Civil Engineering?	Quantitative	Label instances as stance markers in both disciplines Calculate the frequency and normalize the data
RQ3. What might stance markers used in student papers and published articles across different disciplines reveal about stance construction in academic writing?	Qualitative	Examine the commonly used linguistic signals surrounding stance markers Identify functional differences between professional research articles and student papers in both disciplines

3.3.1 Analysis of Frequency of Stance Markers

To answer the first and second research question, all of the concordance lines were examined to classify each occurrence of stance markers. Not all occurrences of the target words were classified as writers' expression of certainty or indicated their attitude to propositional information. Thus, some occurrences of stance features were removed from the analysis since they either were not written by the authors of the research papers themselves or did not refer to personal feelings, attitudes, or assessments of the author of the texts as shown in the examples below:

5) *All of these verbs have high frequencies* ***in general*** *English language use and appear to be highly entrenched in the learners' minds* (Applied Linguistics, published article).
6) *Moreover, the data from* ***May*** *26 to 28 were not available because of batteries recharging.* (Applied Linguistics, student paper)
7) *They graduated from a* ***well-known*** *university of education in Bandung, Indonesia, and possess an English education degree; Novi graduated from an undergraduate level, and Levita graduated from a graduate level.* (Applied Linguistics, student paper)

In the first example above, the search item *in general* were excluded from the analysis because it, as an adjective, modified the following noun referring to the general use of English language rather than the judgement of the author of the text. Similarly, *May* in the second instance was not taken into account in this study as it referred to one of the months instead of being a modal verb. In the third example, although *known* is one of the boosters in this study, it was removed because it referred to a situation which is widely known by people. In other words, by using the booster (*known*), the author(s) did not convey their own views, but shared a widely

known situation with their readers. Thus, these occurrences were not relevant to the current research since they did not carry the target stance function.

After examining the stance markers and determining their function, the frequencies of hedges, boosters, attitude markers, and self-mentions were compared across student and expert writing and two disciplines. Since the four sub-corpora varied in terms of the number of words, the data were normalized to the total number of words in each sub-corpora per 10,000 words in order to make the quantitative data directly comparable across the four sub-corpora. The following formula from Biber et al. (1998) was used for normalization:

$$Distribution\ of\ Use\ = \frac{Number\ of\ instances\ in\ the\ subcorpus}{Total\ number\ of\ words\ in\ the\ subcorpus}\ x\ 10{,}000$$

In addition to frequencies of the stance categories, frequencies for the individual target items within each stance category are provided to identify which particular stance items were most prevalent across the sub-corpora. These frequencies were normalized to the total number of words in each sub-corpus per 10,000 words.

3.3.2 Analysis of Functions of Stance Markers

Different from the analysis of frequencies, in order to answer research question 3, functional differences in how stance-taking occurred across the disciplines and levels of writing were examined. In order to utilize the functional analysis, commonly occurring stance devices within each type of stance were examined within their linguistic environment, and qualitative differences in the use of stance markers across the two types of writing and disciplines were identified. In other words, the most important quantitative trends were explored qualitatively and compared across the disciplines and student and expert writing.

This chapter presented the methodology of this study used to address three research questions. Specifically, it laid out the corpus of this study, the processes, and how quantitative and qualitative analyses were utilized through a concordancer to examine expressions of stance.

CHAPTER 4. RESULTS AND DISCUSSION

This chapter provides answers to the research questions using the quantitative and qualitative analyses outlined in the Methodology chapter. Specifically, Section 4.1 covers the frequency of the stance markers comparing expert and student writing. Section 4.2 presents the quantitative use of stance markers comparing across the disciplines of Applied Linguistics and Civil Engineering. These two sections present the quantitative trends including the most frequent types of stance markers across student and expert writing and Civil Engineering and Applied Linguistics respectively. Section 4.3 explores those quantitative trends through functional analysis and qualitatively looks at textual examples in expert and student writing in each discipline. The presentation and discussion of results in this chapter are structured around each individual research question.

4.1 RQ1: How are the stance markers proposed by Hyland (2005a) used in similar/different ways across published research articles in professional journals and graduate student research papers?

Research question 1 investigated whether there were any similarities or differences in the frequency of stance markers in published research articles and graduate student papers. Table 4.1 provides summarized results of frequency distribution of stance markers in expert and student writing. The quantitative analysis of data showed more instances of stance markers in student writing in all categories of stance. The overall results revealed that expressions of stance features were used in student writing with a frequency of 296.6 per 10,000 words and in expert writing with a normalized rate of 248.3 per 10,000 words. Considering this outcome, stance markers were more common in the student papers than in the published research articles, although the difference was quite small. In both student and expert writing, hedges were the most frequently

used stance feature (127.0 per 10,000 words in student papers and 116.5 per 10,000 words in published research articles). Self-mentions in student writing was the second most frequently used stance marker, while boosters were more frequently used than self-mentions in published articles. Attitude markers were the least frequently used stance feature by both academics and students.

Table 4.1

Distribution of Stance Markers across Expert and Student Writing (per 10,000 words)

Stance Markers	Civil Engineering		Applied Linguistics		Total	Total
	Student papers	Published articles	Student papers	Published articles	Student papers	Published articles
Hedges	106.1	80.0	148.5	134.0	127.0	116.5
Boosters	50.4	66.0	80.0	61.3	65.0	62.8
Attitude Markers	16.2	25.1	36.0	24.2	25.9	24.5
Self-Mentions	4.8	3.4	150.2	61.1	76.5	42.3
Total	177.5	174.5	414.7	280.6	294.4	246.1

According to the results presented in the table above, contrasting Hyland (2005b) and Hood (2006), student papers contained more expressed interaction than published papers, given the theory that stance devices are one of the dimensions of interaction. One of the major differences between two types of writing was the use of self-mentions. Unlike the previous studies on the use of self-mentions (Barton, 1993; Hyland, 2004; Hyland, 2005b) which found fewer use of self-mentions in student papers, student writers in this study demonstrated explicit writer presence and these self-mentions in novice writing occurred about 1.8 times as frequently as in expert writing. It should be noted that this change was only due to the high frequency of self-mention markers in student papers in Applied Linguistics as this trend did not hold for Civil Engineering. Variations across disciplines will be explored in more detail in Section 4.2.

In the remainder of this section, the quantitative findings for stance markers are examined and discussed in two parts in which student and expert writing are compared in each discipline.

4.1.1 Published Research Articles vs. Student Papers in Civil Engineering

This section investigates the use of stance markers in expert and student writing in the discipline of Civil Engineering and demonstrates quantitative findings for hedges, boosters, attitude markers, and self-mentions separately.

The analysis of stance devices revealed that hedges and self-mentions were more frequently used in the research articles written by students, while boosters and attitude markers were more preferred in the published research articles, although the differences were small. While hedges were the most frequently used stance marker by both students and academics, self-mentions were the least frequently used stance feature. The results of the analysis of four categories of stance markers in the student papers and published research articles Civil Engineering are shown in Figure 4.1.

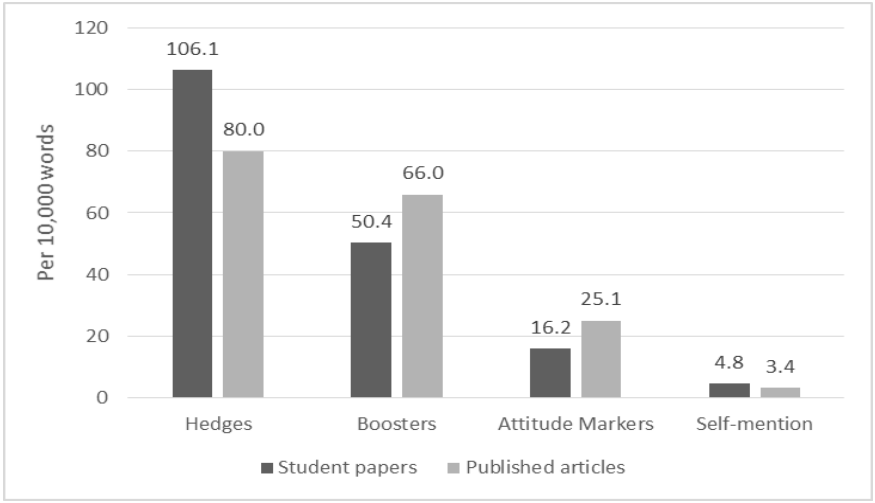

Figure 4.1. Distribution of stance features across student and expert writing in Civil Engineering (per 10,000 words)

As can be seen in Figure 4.1, among the four categories under stance, the biggest discrepancy between two types of writing was the use of hedges, which was in line with the findings of Hyland (2004), who found in his study that students presented arguments with caution and were inclined to withhold commitment to a proposition. In a similar vein, student writers did not express their certainty in what they say with fewer use of boosters when compared to academics who used more boosters.

An analysis of individual hedges in Civil Engineering revealed that students and academics used particular hedges with different frequencies. Table 4.2 below summarizes the frequency of individual hedges showing which hedges are more common in student and expert writing in Civil Engineering. The findings indicated that *could*, *may*, and *would* occurred more frequently in student writing occurring 19.3, 10.9, and 8.4 per 10,000 words respectively, while academics used *estimate* and *indicate* more frequently (normalized rate of 7.2 and 7.0, respectively). With regard to total frequencies of hedges, *could* was the most common hedge (12.8 per 10,000 words).

As the data in Table 4.2 show, a variety of hedges were used in student and expert writing; however, the distribution of frequencies was not equal. As Section 4.3.1 will show, more frequent use of *could*, *may*, and *would* indicated that student writers did not close down possible alternatives and were open to negotiation. Academics, on the other hand, did not use these modal verbs as frequently as student writers.

With regard to the use of boosters, the analysis revealed that the frequency of boosters differed between student papers and published research articles, but the most preferred boosters were the same among different level of writers. Table 4.3 lists the order of the frequency of individual boosters found in student and expert writing in Civil Engineering. *Show* and *find* were

Table 4.2

Normalized Counts of Hedges in Expert and Student Writing in Civil Engineering (per 10,000 words)

Hedges	Student Papers in CE	Published Papers in CE	Total
Could	19.3	6.3	12.8
May	10.9	5.6	8.2
Indicate	7.5	7.0	7.2
Would	8.4	3.4	5.9
Estimate	4.1	7.2	5.7
Should	7.5	3.6	5.6
About	5.1	3.6	4.3
Assume	2.9	3.4	3.1
Possible	2.7	3.6	3.1
Generally	2.4	3.4	2.9
Typically	3.9	1.2	2.5
Suggest	1.7	2.7	2.2
Often	2.7	1.4	2.1
Appear	0.7	3.1	1.9
Approximately	1.2	2.7	1.9
In General	1.4	2.4	1.9
Likely	2.2	1.7	1.9
Relatively	2.9	0.7	1.8
Around	1.2	2.2	1.7
Mainly	1.9	1.4	1.7
Mostly	2.7	0.2	1.4
Almost	1.4	1.2	1.3
Usually	1.9	0.7	1.3
Claim	1.9	0.5	1.2
Might	1.7	0.5	1.1
Tend To	1.7	0.5	1.1
Seems	1.0	1.0	1.0
Typical	1.0	0.7	0.8
Frequently	0.5	1.0	0.7
Perhaps	0.0	1.0	0.5
Quite	0.0	1.0	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

Table 4.3

Normalized Counts of Boosters in Expert and Student Writing in Civil Engineering (per 10,000 words)

Boosters	Student Papers in CE	Published Papers in CE	Total
Show	25.8	41.8	33.8
Find	8.4	8.9	8.7
Must (possibility)	3.4	1.0	2.2
Demonstrate	1.9	2.2	2.1
Know	1.4	2.4	1.9
Clear	1.0	1.7	1.3
Believe	1.9	0.0	1.0
True	0.5	1.2	0.8
Clearly	0.5	1.0	0.7
Sure	1.4	0.0	0.7
Actually	0.2	1.0	0.6
Always	0.2	1.0	0.6
Certain	0.7	0.5	0.6
Establish	0.7	0.5	0.6
Evident	0.7	0.5	0.6
Obvious	0.0	1.0	0.5
Obviously	0.5	0.5	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

found to be common in student and expert writing occurring 25.8 and 41.8 per 10,000 words respectively.

As can be seen in Table 4.3, *show* (*As shown in Figure 1*, *Table 5 shows*) was the most frequently used booster both in research articles written by students and published articles. It was followed by the boosters *find (we found some errors)* and *must*. Similar to the use of hedges, student writers made use of modal verbs functioning as a booster (i.e., *must)* to indicate possibility more frequently than did academics.

The analysis of individual attitude markers showed that the attitude verb *expected* (*in conclusion, it was expected that*) and adjective *important* (*another important factor to account for)* were overall the most frequently used attitude markers (4.8 per 10,000 words for each marker) followed by *even (micro/nano roughness can retain superhydrophobic properties even after prolonged exposure)* (4.2 per 10,000 words). Table 4.4 shows the frequency of individual attitude markers employed in student papers and published research articles in Civil Engineering. When each level of writing was examined individually, it was clear that they were dominated by these three attitude markers (*expected, important,* and *even*).

Table 4.4

Normalized Counts of Attitude Markers in Expert and Student Writing in Civil Engineering (per 10,000 words)

Attitude Markers	**Student Papers in CE**	**Published Papers in CE**	**Total**
Expected	3.9	5.8	4.8
Important	4.1	5.6	4.8
Even	3.6	4.8	4.2
Interesting	0.2	2.4	1.3
Appropriate	0.2	1.4	0.8
Essential	1.0	0.7	0.8
Dramatic	0.2	0.7	0.5
Prefer	0.2	0.7	0.5
Unfortunately	0.2	0.7	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

As shown in Table 4.4, attitude markers other than *essential* occurred more frequently in published research articles than student papers. In addition, attitude markers in novice and expert writing in Civil Engineering were dominated by attitude adjectives (*important, interesting*) with fewer use of sentence adverbs *(even, unfortunately*) and attitude verbs (*prefer, expected*).

A closer look at the individual self-mentions showed that among 11 self-mention markers, only two, *we* and *our*, were used by students and academics. Table 4.5 displays the frequency of two self-mentions that occurred in student and published research articles in Civil Engineering. These two self-mentions were used more frequently in student writing than by professional writers. Overall, self-mentions were much less frequent than the other three categories of stance.

Table 4.5

Normalized Counts of Self-Mention in Expert and Student Writing in Civil Engineering (per 10,000 words)

Self-mentions	**Student Papers in CE**	**Published Papers in CE**	**Total**
We	2.4	1.9	2.2
Our	1.9	1.4	1.7

As shown in the table above, both students and academics made use of first-person plural subject pronoun (*we*) and possessive adjective (*our*). Considering the fact that all published articles in Civil Engineering were written by multiple authors, it was not surprising to find the use of *we* and *our*. What was interesting was the use of this subject pronoun and possessive adjective in the student papers, although they all were written by a single author. Based on the analysis of the concordance lines, it became clear that student writers used *we (we hope that the results of this study will help)* and *our (we are confident that our approach can provide)* to refer to the research team that they worked with throughout the research process. Regarding the variety and frequency of self-mentions used in student writing and published articles, academics and particularly students in Civil Engineering were found to convey personal projection with their readers through limited use of author presence in the text. This is due to the fact that, as Hyland (2011) observes, in the hard sciences self-mention markers are less common since

writers avoid projecting an impression of themselves and are concerned with the objectivity of their interpretations.

4.1.2 Published Research Articles vs. Student Papers in Applied Linguistics

This section examines the quantitative use of stance markers in student papers and published articles written in the discipline of Applied Linguistics and demonstrates the distribution of four categories of stance features across the student and expert writing in Applied Linguistics.

The analysis of different types of writing in Applied Linguistics revealed that all four categories of stance were more frequently used in student papers than in published research articles. While student writers used self-mentions with the highest frequency among all categories (150.2 per 10,000 words), hedges made up the most common category (134.0 per 10,000 words) in published papers. The biggest discrepancy between student and expert writing was the use of self-mentions. Students used self-mentions more than twice as frequently as did academics. Of the four categories of stance, attitude markers were less frequent in student and expert writing. These distributions are shown in Figure 4.2.

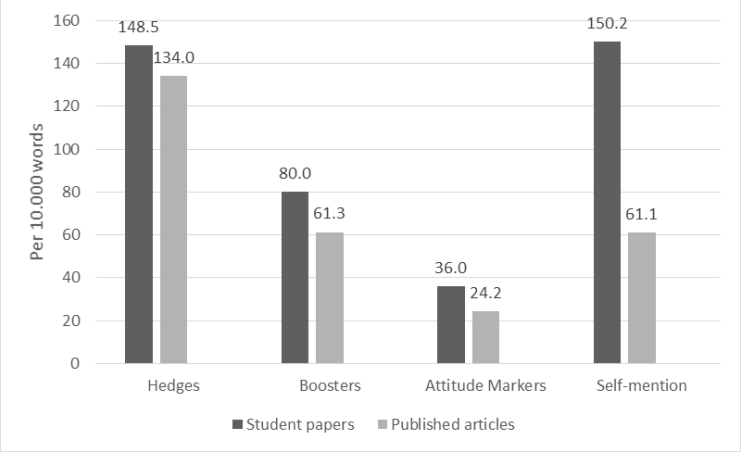

Figure 4.2. Distribution of stance features across student and expert writing in Applied Linguistics (per 10,000 words)

According to the figure above, student writers expressed interaction using expressions of stance markers more frequently than did academics. It is noteworthy that student writing was dominated by self-mentions and hedges, while hedges and boosters were more prominent in the published research articles. Students consistently used more of the stance markers across all four types of stance. The biggest difference was in self-mention markers and in fact, these self-mention markers was the most frequent stance category in the student papers but they were only the third most frequent type of stance in expert writing, which relied on more hedges and boosters.

When individual words under hedges were examined, different frequencies were found. Table 4.6 displays the frequency distribution of hedges across student and expert writing in Applied Linguistics. Total frequencies showed that the modal verbs *would, may, could* and *might* were used frequently by both students and academics. While *would* was the most common hedge in student writing with a normalized rate of 27.8 per 10,000 words, *may* was the most frequently used one in expert writing with 21.2 per 10,000 words.

Table 4.6

Normalized Counts of Hedges in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Hedges	**Student Papers in AL**	**Published Articles in AL**	**Total**
Would	27.8	12.6	17.4
May	5.5	21.2	16.2
Could	19.1	8.8	12.1
Might	12.4	8.6	9.8
Appear	7.7	6.5	6.9
Indicate	5.5	7.6	6.9
Possible	5.0	5.6	5.4
Should	4.7	5.1	5.0
Likely	1.7	5.5	4.3

Table 4.6 continued

Suggest	2.5	5.1	4.3
Claim	1.0	5.5	4.0
Often	3.0	4.1	3.7
Frequently	8.9	1.0	3.6
Argue	2.5	3.7	3.3
Generally	2.0	3.7	3.2
Tend To	4.2	2.2	2.9
Mostly	3.0	1.9	2.2
Perhaps	2.5	2.1	2.2
Relatively	1.5	2.6	2.2
Seems	3.2	1.3	1.9
About	2.2	1.2	1.5
Fairly	3.7	0.5	1.5
Quite	2.2	1.2	1.5
Somewhat	1.0	1.5	1.3
Usually	1.0	1.5	1.3
Approximately	0.7	1.5	1.3
In General	2.2	0.7	1.2
Almost	1.0	0.9	1.0
Largely	1.2	0.7	0.9
Probably	1.2	0.7	0.9
Sometimes	1.2	0.7	0.9
Feel	2.0	0.1	0.7
Assume	0.2	0.8	0.6
Typically	0.0	0.8	0.6
Rather	0.0	0.7	0.5
Typical	0.0	0.7	0.5
Unlikely	0.2	0.6	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

As can be seen in the table above, the distribution of hedges in student and expert writing was not similar in that both employed different hedges with different frequencies. A closer look at the frequently used hedges revealed that academics and particularly students in Applied Linguistics tended to base their arguments on their interpretation instead of on a fact through the use of *would (a concern here would be that), could (the training could also help raters), may*

(this shows that input may have an effect) and *might (in the future, it might be useful to expand),* which are used to express possibility.

A closer look at boosters indicated that *show* and *find* were the most frequently used boosters making up the normalized rate of 18.8 and 18.5 per 10,000 words, respectively. Table 4.7 displays the frequencies of individual boosters that appeared in student and expert writing in Applied Linguistics. *Show* and *find* dominated the boosters in two types of writing in Applied Linguistics and a big difference was found between these two boosters and the others. *Show* was the most common booster in student writing (23.1 per 10,000 words), while in expert writing *find* was found to be the most frequent booster (17.6 per 10,000 words). This finding will be explored qualitatively in Section 4.3.

According to Table 4.7, boosters other than *show* and *find* occurred less frequently and this finding was in line with the frequent use of *show* and *find* in student and expert writing in Civil Engineering. Based on the analysis of the concordance lines, it became clear that student writers in Applied Linguistics used *find* and *show* more frequently, directing their readers to visuals to report their results or present a new breakthrough through the expressions such as *we found that* and *as shown in the table*.

With regard to the analysis of individual attitude markers in student and expert writing in Applied Linguistics, *important (the finding has important implications*) was the most frequently used booster (6.4 per 10,000 words) followed by *even* (*This utterance is considered true even if they formed their group*) (5.7 per 10,000 words). Table 4.8 summarizes the frequencies of individual attitude markers occurred in student writing and published articles in the discipline of Applied Linguistics. A closer look at the frequencies revealed that while *even* with a normalized

Table 4.7

Normalized Counts of Boosters in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Boosters	Student Papers in AL	Published Articles in AL	Total
Show	23.1	16.8	18.8
Find	20.6	17.5	18.5
Demonstrate	2.0	5.8	4.6
Know	2.7	3.5	3.2
Think	4.0	1.6	2.4
Believe	4.2	1.0	2.1
Clear	1.7	2.0	1.9
Actually	3.2	0.7	1.5
Clearly	2.5	0.9	1.4
Indeed	1.7	1.3	1.4
Prove	0.7	1.6	1.3
Establish	0.7	1.5	1.3
In Fact	1.2	1.2	1.2
Never	2.0	0.7	1.1
Must (possibility)	1.7	0.7	1.0
True	1.0	0.9	1.0
Always	1.5	0.6	0.9
Realize	0.7	0.6	0.6
Sure	1.5	0.1	0.6

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

rate of 7.7 per 10,000 words was found the most frequently occurring attitude marker in student writing, *important* (6.7 per 10,000 words) was the most frequently used one by academics.

As can be seen from Table 4.8, students and academics employed attitude adjectives (*important, interesting*) and verbs (*expected*, *agree*) more frequently than they did sentence adverbs (*correctly, importantly, interestingly, surprisingly*). Overall, the category of attitude markers was not used commonly in either sub-corpora when compared to the other three categories of stance.

Table 4.8

Normalized Counts of Attitude Markers in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Attitude Markers	Student Papers in AL	Published Articles in AL	Total
Important	5.7	6.7	6.4
Even	7.7	4.8	5.7
Expected	2.0	3.3	2.9
Interesting	5.2	1.4	2.6
Appropriate	3.2	1.3	1.9
Agree	2.5	0.6	1.2
Surprising	0.7	1.0	1.0
Correctly	1.5	0.2	0.6
Importantly	0.0	0.7	0.5
Interestingly	0.7	0.3	0.5
Surprisingly	0.0	0.7	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

As for the analysis of self-mentions in novice and expert writing, five (out of 11) of the possible self-mentions were used. Table 4.9 lists the frequencies of self-mentions that were used by students and academics in Applied Linguistics. *We* and *us* occurred in student and expert writing with the highest frequencies of 58.1 and 23.9 per 10,000 words, respectively. *We*, as the first-person plural subject pronoun, was the most common self-mention (58.1 per 10,000 words) used by both students and academics. *Our* was the second frequently used self-mention in the two sub-corpora. The *author and I* were only employed by student writers.

Unlike students and academics in Civil Engineering, in Applied Linguistics a variety of self-mentions were found particularly in student writing. Academics made use of only first-person plural subject pronoun (*we will then describe the design*), possessive adjective (*our discussion of results begins with*), and first-person plural object pronoun (*This allowed us to*

Table 4.9

Normalized Counts of Self Mentions in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Self-Mention	Student Papers in AL	Published Articles in AL	Total
We	93.6	41.4	58.1
Our	39.7	16.5	23.9
Us	7.7	3.1	4.6
I	3.7	0.0	1.2
The Author	2.7	0.0	0.9

ensure), while students employed the first-person singular subject pronoun (*I will only positively conclude*) and *the author* (*Therefore, in this study the author is interested in*) as well. The use of the first-person subject pronoun (*I*) in student writing could be attributed to the fact that some of the student papers in Applied Linguistics were written by a single author. Additionally, when the frequencies were examined, students employed self-mentions more than twice as frequently as academics. These results showed that student writers in Applied Linguistics made more use of self-mentions and presented an authorial identity in their paper.

4.2 RQ2: How are the stance markers proposed by Hyland (2005a) used in similar/different ways across the disciplines of Applied Linguistics and Civil Engineering?

The analysis for the second research question examined the quantitative use of stance markers in Civil Engineering and Applied Linguistics and sought to determine which discipline employed more stance markers and which stance features were more commonly used across two disciplines. A cross-disciplinary analysis of stance features showed that stance markers were about 1.8 times as frequent in Applied Linguistics (323.4 per 10,000 words) as in Civil Engineering (176.0 per 10,000 words). All categories of stance were more frequently used in Applied Linguistics than Civil Engineering. Additionally, self-mention was the category which

indicated the highest discrepancy between Civil Engineering (4.1 per 10,000 words) and Applied Linguistics (89.5 per 10,000 words). Self-mentions in Applied Linguistics outnumbered Civil Engineering in both student and expert writing. Boosters and attitude markers were the only two categories that were higher in published Civil Engineering articles than in Applied Linguistics, although their frequencies were almost the same. The results of the analysis of four categories across two disciplines are summarized in Table 4.10.

Table 4.10

Distribution of Stance Markers across the Two Disciplines (per 10,000 words)

Stance Markers	**Student papers**		**Published articles**		**Total**	**Total**
	Civil Eng.	**Applied Ling.**	**Civil Eng.**	**Applied Ling.**	**Civil Eng.**	**Applied Ling.**
Hedges	106.1	148.5	80.0	134.0	93.1	134.0
Boosters	50.4	80.0	66.0	61.3	58.2	67.3
Attitude Markers	16.2	36.0	25.1	24.2	20.6	28.0
Self-Mention	4.8	150.2	3.4	61.1	4.1	89.5
Total	177.5	414.7	174.5	280.6	176.0	323.4

According to the table above, all four categories of stance markers occurred more frequently in Applied Linguistics than in Civil Engineering, which was in line with the findings of Hyland (2005a; 2011), who found writers in the soft sciences rather than in the hard sciences employed more stance markers. Besides that, consistent with Hyland (2011), it was found that writers in the discipline of Applied Linguistics made more use of self-mentions and presented an explicit self-representation as opposed to those in Civil Engineering.

The remainder of this section is divided into two parts in which quantitative findings for Civil Engineering and Applied Linguistics student papers and published articles will be explored in further detail.

4.2.1 Student Papers in Civil Engineering vs. Applied Linguistics

This section investigates the use of stance markers in Civil Engineering and Applied Linguistics examining both student and expert writing and demonstrates the quantitative findings of hedges, boosters, attitude markers, and self-mentions separately.

The results of the analysis of stance markers in student papers across the two disciplines revealed that hedges, boosters, attitude markers, and self-mentions in Applied Linguistics outnumbered the stance features used in Civil Engineering. Self-mentions were the most frequently used stance marker in student papers in Applied Linguistics, while this stance feature was the least frequently used category in Civil Engineering. The most frequently used category in Civil Engineering was hedges followed by boosters. In Applied Linguistics, the least frequently used category was attitude markers. It is noteworthy to say that the biggest difference was in the use of self-mentions with a normalized rate of 150.2 per 10,000 words in Applied Linguistics, whereas the frequency of self-mentions in Civil Engineering was only 4.8 per 10,000 words. These frequencies of stance features in student papers in the two disciplines are shown in Figure 4.3.

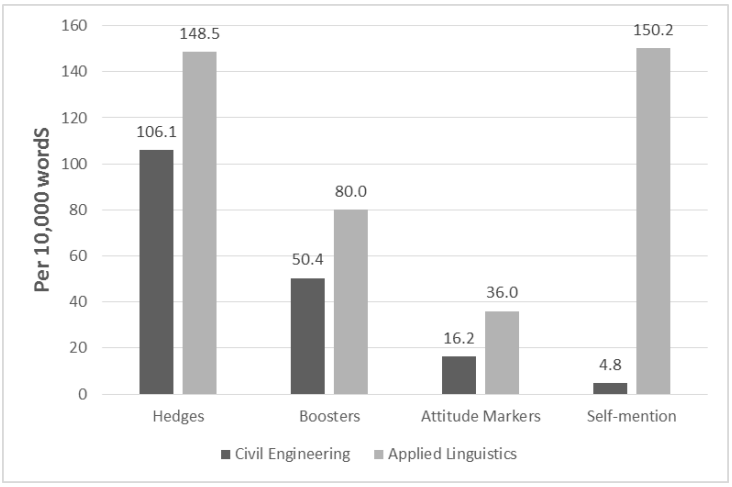

Figure 4.3. Distribution of stance features across two disciplines in student papers (per 10,000 words)

As can be seen in Figure 4.3, stance markers occurred more frequently in student papers in Applied Linguistics. Given the fact that these markers are a component of interaction, it was clear that student papers in Applied Linguistics were more interactive than Civil Engineering because stance markers were much more common in Applied Linguistics. Based on the small frequencies of self-mention markers in Civil Engineering, writers in that particular discipline generally refrained from constructing explicit author presence, while in Applied Linguistics writers adopted a personal self-representation.

A closer look at individual words under hedges revealed a different distribution of frequencies across the two disciplines. Table 4.11 presents the frequencies of individual hedges that occurred in the two disciplines. The hedge *could* was overall the most frequently used word followed by *would*, *may*, and *might*. When each discipline was examined individually, *would* was found to occur with the highest frequency (27.8 per 10,000 words) in Applied Linguistics, while *could* was the most frequent hedge (19.3 per 10,000 words) in Civil Engineering. *Might* occurred with the third highest frequency in Applied Linguistics, whereas it was one of the least frequent hedges in Civil Engineering.

Table 4.11

Normalized Counts of Hedges in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Hedges	**Student Papers**		**Total**
	Civil Engineering	**Applied Linguistics**	
Could	19.3	19.1	19.2
Would	8.4	27.8	18.0
May	10.9	5.5	8.2
Might	1.7	12.4	7.0
Indicate	7.5	5.5	6.5
Should	7.5	4.7	6.1
Frequently	0.5	8.9	4.6
Appear	0.7	7.7	4.2

Table 4.11 continued

Possible	2.7	5.0	3.8
About	5.1	2.2	3.7
Tend To	1.7	4.2	2.9
Mostly	2.7	3.0	2.8
Often	2.7	3.0	2.8
Generally	2.4	2.0	2.2
Relatively	2.9	1.5	2.2
Estimate	4.1	0.0	2.1
Seems	1.0	3.2	2.1
Suggest	1.7	2.5	2.1
Fairly	0.2	3.7	2.0
Likely	2.2	1.7	2.0
Typically	3.9	0.0	2.0
In General	1.4	2.2	1.8
Assume	2.9	0.2	1.6
Claim	1.9	1.0	1.5
Usually	1.9	1.0	1.5
Almost	1.4	1.0	1.2
Argue	0.0	2.5	1.2
Mainly	1.9	0.5	1.2
Perhaps	0.0	2.5	1.2
Quite	0.0	2.2	1.1
Approximately	1.2	0.7	1.0
Feel	0.0	2.0	1.0
Around	1.2	0.5	0.9
Largely	0.2	1.2	0.7
Probably	0.0	1.2	0.6
Sometimes	0.0	1.2	0.6
Somewhat	0.0	1.0	0.5
Typical	1.0	0.0	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

As shown in Table 4.11, hedges including *could, would, may,* and *might* were the most frequently used hedges in both disciplines with different frequencies. This finding indicates that both disciplines used these modal expressions of possibility to avoid expressing their certainty recognizing other viewpoints.

A close examination of boosters across the two disciplines showed that *show* and *find* occurred with the highest frequencies of 24.5 and 14.4 per 10,000 words, respectively. Table 4.12 presents the frequency of boosters used by student writers in the two disciplines. *Show* was used in the two disciplines with a small difference in frequency, whereas *find* exhibited a much larger difference across student papers in the two disciplines, occurring with a normalized rate of 8.4 per 10,000 words in Civil Engineering and 20.6 per 20,000 words in Applied Linguistics. A large discrepancy was also found between these two boosters and the others.

According to Table 4.12, student writers in Civil Engineering did not make use of the boosters *think* and *believe* as frequently as did those who are in Applied Linguistics, and this finding showed that students in Civil Engineering did not rely on these two boosters as they generally rely on measurements from lab or field studies. On the other hand, students in Applied Linguistics expressed the degree of their uncertainty using *think (native speakers might think that)* and *believe* (*we also believe that*), and based their arguments on beliefs and personal opinions.

With regard to the analysis of individual attitude markers, *even* was found to be used with the highest frequency followed by attitude adjective *important*. Table 4.13 shows the frequency of individual attitude markers that appeared in student writing across both disciplines. When the disciplines were examined individually, *even* (*even if no such utterances would be found*) was the most commonly used attitude marker in Applied Linguistics, while the most frequent attitude marker in Civil Engineering was *important (it is a very important factor to evaluate)*. The biggest discrepancy was found in the use of the attitude adjective *interesting (one of the interesting studies on the use of)* (0.2 per 10,000 words in Civil Engineering and 5.2 per 10,000 words in Applied Linguistics).

Table 4.12

Normalized Counts of Boosters in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Boosters	**Student Papers**		**Total**
	Civil Engineering	**Applied Linguistics**	
Show	25.8	23.1	24.5
Find	8.4	20.6	14.4
Believe	1.9	4.2	3.1
Must (possibility)	3.4	1.7	2.6
Know	1.4	2.7	2.1
Think	0.2	4.0	2.1
Demonstrate	1.9	2.0	2.0
Actually	0.2	3.2	1.7
Clearly	0.5	2.5	1.5
Sure	1.4	1.5	1.5
Clear	1.0	1.7	1.3
Never	0.0	2.0	1.0
Always	0.2	1.5	0.9
Indeed	0.0	1.7	0.9
Establish	0.7	0.7	0.7
In Fact	0.2	1.2	0.7
True	0.5	1.0	0.7
Obviously	0.5	0.7	0.6
Realize	0.5	0.7	0.6

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

Overall, attitude markers were less frequently used in student papers in both Applied Linguistics and Civil Engineering when compared to the frequencies of hedges and boosters, and no big differences were found between the two disciplines in terms of indicating attitude. Both disciplines contained attitude verbs (*expected, prefer*), adjectives (*important*) and sentence adverbs (*unfortunately, dramatically*) with similar frequencies.

A cross-disciplinary analysis of individual self-mentions revealed that although seven (out of 11) of the possible self-mention markers occurred, only three self-mentions were used by student writers in Civil Engineering. *We* occurred as the highest frequently used self-mention

Table 4.13

Normalized Counts of Attitude Markers in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Attitude Markers	**Student Papers**		**Total**
	Civil Engineering	**Applied Linguistics**	
Even	3.6	7.7	5.6
Important	4.1	5.7	4.9
Expected	3.9	2.0	2.9
Interesting	0.2	5.2	2.7
Appropriate	0.2	3.2	1.7
Agree	0.0	2.5	1.2
Correctly	0.0	1.5	0.7
Essential	1.0	0.2	0.6
Unfortunately	0.2	1.0	0.6
Dramatically	0.7	0.2	0.5
Prefer	0.2	0.7	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

(47.4 per 10,000 words). Table 4.14 summarizes the frequency of self-mentions in student writing in both disciplines. A closer examination showed that the self-mention *we* occurred in Civil Engineering with a frequency of 2.41 per 10,000 words, while this frequency was 93.6 per 10,000 words in Applied Linguistics. *Our* and *us* were the other self-mentions that were used in two disciplines, but large differences were found between the disciplines in terms of the use of *we* and *our*. The first-person subject pronoun, *we,* occurred in Applied Linguistics almost 40 times as frequently as Civil Engineering. Similarly, in Applied Linguistics, *our* occurred around 20 times as frequently as Civil Engineering.

Table 4.14

Normalized Counts of Self-Mention in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Self-Mention	Student Papers		Total
	Civil Engineering	Applied Linguistics	
We	2.41	93.6	47.4
Our	1.93	39.7	20.6
Us	0.48	7.7	4.0
I	0.00	3.7	1.8
The Author	0.00	2.7	1.3
Me	0.00	1.2	0.6
My	0.00	1.2	0.6

As shown in the table above, a large difference in the use of self-mentions between the two disciplines was found. Despite the use of three self-mention markers in Civil Engineering, when the frequencies across disciplines were compared, it became clear that students in this discipline presented their arguments with an emphasis on methods and procedures, downplaying their personal role. Writers in Applied Linguistics, on the other hand, presented their opinions through an explicit author presence.

4.2.2 Published Research Articles in Civil Engineering vs. Applied Linguistics

In this section, quantitative findings of hedges, boosters, attitude markers and self-mentions in published research articles in Civil Engineering and Applied Linguistics will be explored.

A disciplinary analysis of 20 published articles showed that as a category, hedges occurred most frequently in Applied Linguistics and Civil Engineering. Self-mentions occurred with the least frequency in Civil Engineering, whereas it was attitude markers that occurred with the least frequency in Applied Linguistics. Additionally, Applied Linguistics published articles made great use of self-mentions (61.1 per 10,000 words), unlike Civil Engineering (3.4 per

10,000 words). The use of hedges and self-mentions showed large differences across the two disciplines. Boosters and attitude markers, on the other hand, demonstrated small differences. The frequency of each category of stance across the two disciplines is presented in Figure 4.4.

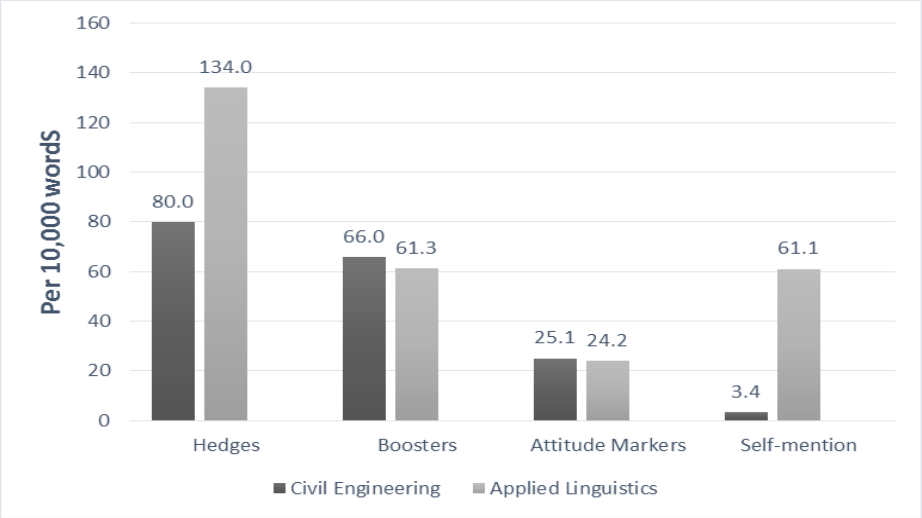

Figure 4.4. Distribution of stance features across two disciplines in published research articles (per 10,000 words)

As shown in the figure above, published articles in Applied Linguistics made more use of stance markers, particularly hedges and self-mentions. Civil Engineering contained more frequent use of boosters and attitude markers, but the differences were comparatively small. The finding that expert writing in Applied Linguistics contained more hedges and self-mentions than did that in Civil Engineering resonated with the findings for student writing across the two disciplines presented in Section 4.1. As for boosters and attitude markers, the differences between the two disciplines were less than 2 per 10,000 words, although the precise frequencies is higher in Civil Engineering published articles than in Applied Linguistics. With regard to these findings, academics in Applied Linguistics made explicit self-references and acknowledged

alternative perspectives through the use of self-mentions and hedges more than did their colleagues in Civil Engineering. Based on the small differences in the use of boosters and attitude markers, writers in both disciplines were inclined to demonstrate certainty and convey attitude equally.

As for the analysis of individual hedges in published articles across the two disciplines, *may*, *would* ,and *could* occurred with the highest frequencies. Table 4.15 shows the frequency of individual hedges that occurred in published articles across the two disciplines. While *may* was the most common hedge in Applied Linguistics (21.2 per 10,000 words), *estimate* appeared as the highest frequently used hedge in Civil Engineering (7.2 per 10,000 words). It is noteworthy to say that *may, would, could,* and *might*, the most common hedges in Applied Linguistics, did not occur with high frequencies in Civil Engineering and a big difference was observed particularly in the use of *may* (5.6 per 10,000 words in Civil Engineering and 21.2 in Applied Linguistics) and *might* (.5 per 10,000 words in Civil Engineering and 8.6 per 10,000 words in Applied Linguistics).

Table 4.15

Normalized Counts of Hedges in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Hedges	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
May	5.6	21.2	16.1
Would	3.4	12.6	9.6
Could	6.3	8.8	8.0
Indicate	7.0	7.6	7.4
Might	0.5	8.6	6.0
Appear	3.1	6.5	5.4
Possible	3.6	5.6	4.9
Should	3.6	5.1	4.6
Suggest	2.7	5.1	4.3
Likely	1.7	5.5	4.2

Table 4.15 continued

Claim	0.5	5.5	3.8
Generally	3.4	3.7	3.6
Often	1.4	4.1	3.2
Estimate	7.2	0.2	2.5
Argue	0.0	3.7	2.5
About	3.6	1.2	2.0
Relatively	0.7	2.6	2.0
Approximately	2.7	1.5	1.9
Perhaps	1.0	2.1	1.7
Assume	3.4	0.8	1.6
Tend To	0.5	2.2	1.6
Mostly	0.2	1.9	1.3
In General	2.4	0.7	1.3
Usually	0.7	1.5	1.3
Seems	1.0	1.3	1.2
Quite	1.0	1.2	1.1
Almost	1.2	0.9	1.0
Frequently	1.0	1.0	1.0
Somewhat	0.0	1.5	1.0
Typically	1.2	0.8	0.9
Around	2.2	0.2	0.9
Probably	0.7	0.7	0.7
Sometimes	0.7	0.7	0.7
Typical	0.7	0.7	0.7
Largely	0.5	0.7	0.6
Mainly	1.4	0.2	0.6
Rather	0.5	0.7	0.6
Unclear	0.7	0.5	0.5
Unlikely	0.2	0.6	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

Looking at the frequency of hedges in the table above, it was found that the frequency distribution of hedges was different in Civil Engineering and Applied Linguistics. The common use of *may, would, could,* and *may* indicated that academics in Applied Linguistics recognized alternative voices emphasizing possibility, and refrained from making a commitment to a proposition through the use of these hedges. *Estimate,* the most frequently used hedge in student

and expert writing in Civil Engineering, was found to be less frequently used by students and academics in Applied Linguistics.

The investigation of individual boosters showed that *show* and *find* were the most frequently used boosters in both disciplines. *Show* occurred with the highest frequency in Civil Engineering (41.8 per 10,000 words), and a big discrepancy was found between *show* and the second frequent booster *find* (8.9 per 10,000 words). With regard to Applied Linguistics, *find* was more common (17.5 per 10,000 words) than *show* (16.8 per 10,000 words), but the difference was quite small. The frequency of individual boosters that appeared in published articles in Civil Engineering and Applied Linguistics are provided in Table 4.16 below.

It is apparent in Table 4.16 that academics in both disciplines made use of the boosters *show* and *find* to present and discuss new knowledge and underscore the importance of recent breakthroughs through the use of expressions such as *the data show* and *steady and sharp increases were found*. Similar to the findings of the cross-disciplinary analysis of student papers presented in Section 4.2.1, academics in Applied Linguistics used boosters such as *know* rather than *think* or *believe* to indicate their certainty with a confident voice. The different use of boosters between Civil Engineering and Applied Linguistics will be taken up again in Section 4.3.

Regarding the frequency of each individual attitude marker in two disciplines, the attitudinal adjective *important* was the most frequent attitude marker followed by *even* and *expected*. Table 4.17 displays the frequency of attitude markers in published research articles in the two disciplines. When the two disciplines were analyzed individually, *expected* occurred with the highest frequency in Civil Engineering (5.8 per 10,000 words), while *important* was the most common attitude marker in Applied Linguistics (6.7 per 10,000 words).

Table 4.16

Normalized Counts of Boosters in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Boosters	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
Show	41.8	16.8	24.9
Find	8.9	17.5	14.7
Demonstrate	2.2	5.8	4.6
Know	2.4	3.5	3.1
Clear	1.7	2.0	1.9
Prove	0.5	1.6	1.3
Establish	0.5	1.5	1.2
Think	0.0	1.6	1.1
True	1.2	0.9	1.0
Clearly	1.0	0.9	0.9
In Fact	0.2	1.2	0.9
Indeed	0.0	1.3	0.9
Actually	1.0	0.7	0.8
Must (possibility)	1.0	0.7	0.8
Always	1.0	0.6	0.7
Believe	0.0	1.0	0.7
Obvious	1.0	0.3	0.5
Never	0.0	0.7	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

As Table 4.17 makes clear, academics in Civil Engineering and Applied Linguistics used attitude verbs (*expected*) and adjectives (*important, interesting*) more frequently than sentence adverbials (*surprisingly, importantly*).

A closer examination of individual self-mentions revealed that only two of the self-mention markers occurred in Civil Engineering, including *we* (1.9 per 10,000 words) and *our* (1.4 per 10,000 words). These frequencies were found to be low when compared to Applied Linguistics, where academics employed *we, our,* and *us* with higher frequencies (41.4, 16.5, and

3.1 per 10,000 words, respectively). The frequencies of individual self-mentions that occurred in published articles in both disciplines is displayed in Table 4.18.

Table 4.17

Normalized Counts of Attitude Markers in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Attitude Markers	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
Important	5.6	6.7	6.4
Even	4.8	4.8	4.8
Expected	5.8	3.3	4.1
Interesting	2.4	1.4	1.7
Appropriate	1.4	1.3	1.3
Surprising	0.0	1.0	0.7
Importantly	0.2	0.7	0.5
Surprisingly	0.0	0.7	0.5

Notes: 1. The table does not include frequencies less than 0.5 per 10,000 words. Please see Appendix B for words with frequencies with less than 0.5.
2. Different forms of the same verb (e.g., finds, found) were combined into one count (find) in the table.

Table 4.18

Normalized Counts of Self-Mention in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Self-Mention	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
We	1.9	41.4	28.6
Our	1.4	16.5	11.6
Us	0.0	3.1	2.1

As can be seen in Table 4.18, the two disciplines were found to have large differences in their use of self-mentions in published research articles. All in all, in both disciplines, it was writers in Applied Linguists which made greater use of self-mentions. Since published articles in the corpus were written by multiple authors in both disciplines, the use of the first-person plural pronoun and possessive adjectives is not surprising. What is intriguing is the discrepancy in the

frequencies across the two disciplines. Unlike Applied Linguistics, where academics explicitly included themselves in the text, professional writers in Civil Engineering, as Hyland (2005a) observed, did not place value on the subjects conducting the research.

4.3 RQ3: What Might Stance Markers Used in Student Papers and Published Articles across Different Disciplines Reveal about Stance Construction in Academic Writing?

In this section, the use of stance markers will be explored qualitatively. The results will be discussed considering the functions of the use of stance markers, and a qualitative examination of the linguistic environment in which stance features occur will be offered. This section is structured around each individual category of stance markers, and focuses on illustrating and qualitatively exploring the most important quantitative trends discussed in Sections 4.1 and 4.2. In order to conduct this analysis, important quantitative trends were selected for further analysis and illustration. The most frequently occurring stance markers within each category were analyzed within their linguistic environment to identify qualitative differences in how the stance categories were used across the disciplines and levels of writing investigated in the study. In other words, examining the common linguistic environments of the stance markers is used as a way to better understand the functions of stance markers in the corpora.

4.3.1 Functional Analysis of Hedges

The analysis of the linguistic environment of hedges, particularly the common linguistic patterns, revealed intriguing results. The most common hedges across the two disciplines and levels of writing were modal verbs. As for the verbs that followed hedges, one particular verb, *be*, was found to be frequently used after modal verbs including *could, may, might, should*, and *would* in both student papers and published research articles across the two disciplines. A closer

look at each discipline revealed that Civil Engineering contained a passive form of a verb after *may, might, could, should + be* as provided in examples 8 and 9 below. However, in Applied Linguistics, passive forms were less frequent, and both students and academics used either a noun (see example 10) or an adjective (see example 11) after the verb *be*. An example from each discipline appears below:

8) *The flow chart of the local calibration procedure of AASHTOW are Pavement ME* ***could be seen*** *in Figure 1.* (Civil Engineering, student paper)
9) *It* ***may be observed*** *from Fig. 3 that the modeled trips are generally in agreement with the observed trips.* (Civil Engineering, published article)
10) *Because an important aim of the study was to determine the extent to which TOEFL iBT asynchronous tasks validly assess all components of the ability to communicate orally in an academic environment, this group of test takers, who have formal and informal exposure to English,* ***may be an ideal sample*** *for the study.* (Applied Linguistics, published article)
11) *On the other hand, if the study were to be repeated in a context with lower-proficiency learners, it* ***might be helpful*** *to use the same basic task protocol, but to replace Holmes and Watson are on the Case with a different, easier book containing lower-level vocabulary.* (Applied Linguistics, student paper)

In these brief excerpts, it can be seen that this example of a hard science text (Civil Engineering) used more passive structures than this example of a soft science text (Applied Linguistics). These passive forms employed after the most common hedges were mostly used to refer to a graphic display (*could be seen in Figure 1*) or to establish a basis for an argument (*this may be caused by the force*) in Civil Engineering. This is due to the fact that, as Hyland (2008)

observed, in the hard sciences writers downplay the explicit presence of author emphasizing that the same results will be found whoever carries out the research. The use of hedges across the two disciplines reflected the differences between Civil Engineering and Applied Linguistics in the use of passive forms and showed that the linguistic environment in which commonly used hedges occurred was dominated by passive constructions in Civil Engineering.

Additionally, two common language patterns that were identified from the corpus were *verb (hedge) + that clause* and *verb (hedge) + to-infinitive*. These two patterns deserve mentioning due to two predominant patterns that followed hedges. When those patterns were examined in student papers and published articles across the two disciplines, differences were found.

As for the linking verbs, *seem* and *appear*, while these two hedges were followed by *to + infinitive* in published articles and student writing in Applied Linguistics, the prominently used pattern by students and academics in Civil Engineering was *linking verb + that clause* rather than *to + infinitive*. It is noteworthy to highlight that although both disciplines and levels included those linking verbs, the linguistic patterns that were used in the two disciplines differed as shown in the examples below.

12) ***It appears that*** *at lower w/c ratios the diffusivity of concrete approaches the level of the intrinsic permeability of the cement gel. Reduction of w/c ratio in internally cured concretes does not significantly reduce resistance to chloride penetration.* (Civil Engineering, published article)

13) *Table 8 presents effect sizes from studies with four design features associated with quality across the four design types. The process by which a study assigns participants to conditions* ***appears to*** *relate to its outcome, with substantially larger*

effects for studies employing random group assignment at the individual level. (Applied Linguistics, published article)

Besides that, verbs other than linking verbs including *argue, assume, claim, indicate,* and *suggest* were followed by *that + clause* in student and expert writing in both disciplines. Based on the analysis of the concordance lines, it was clear that almost all of the *hedge + that*-clause structure was used in either the results/discussion or conclusion sections across the two disciplines and levels of writing. The hedges, especially *indicate, suggest,* and *argue* were found to be more commonly used with a *that*-clause in Applied Linguistics.

14) *We* ***suggest that materials focus more on typical associations of lexical items and constructions*** *and emphasize patterns in form–meaning relations.* (Applied Linguistics, published article)
15) *Thus, we can tentatively* ***argue that reading a text containing modified input, and subsequently using the features of that input, aids in vocabulary acquisition***. (Applied Linguistics, student paper)
16) *The results of 27Al NMR and 29Si NMR analyses, showed that tetrahedral aluminum sites were present mostly as aluminum substituted for silicon in Q2 species. Therefore, it can be* ***claimed that aluminum was more likely to incorporate into the silicate structure of the neat WPC hydration products by substituting silicon in bridging sites***. (Civil Engineering, student paper)

This common use of *hedge + that*-clause, particularly in the results and conclusion sections of research articles in Applied Linguistics, resonates with Hyland and Tse (2005d) on the cross-disciplinary analysis of *that*-clause. These authors observed the hedges, *suggest, argue*

and *indicate* to be more frequently used as a predicate before *that*-clause in the soft sciences. That is, writers in Applied Linguistics using more *that*-clauses turned their evaluations into an explicit statement of opinion.

4.3.2 Functional Analysis of Boosters

A look at the boosters from a functional perspective showed that in both disciplines two verbs, *find* and *show* along with their past tense forms, were the most frequently used boosters. In Applied Linguistics, *find* was observed to be the most preferred booster while in Civil Engineering, *show* was the most frequently employed booster. When the total frequencies of boosters were examined in all corpus, it was found that *show* appeared more frequently.

Additionally, the boosters *show* and *find* were used in Civil Engineering and Applied Linguistics quite frequently to introduce data displays and emphasize the importance of new breakthroughs. Specifically, the verbs including *shown* and *found* were followed by the preposition *in* in order to direct readers' attention to a table or figure (see Example 17) across the two disciplines and to express with certainty what the data displays accomplished in the research articles (see example 18). The following examples from the corpus illustrate the use of these two boosters:

17) *In the end, a set of temperature and relative humidity data was obtained after the success rate test which is* ***shown in Figure 19 and 20****.* (Civil Engineering, student paper)

18) *Table 2 shows that the number of comprehension checks* ***found in the data*** *was very low. Only one instance of this type of negotiation move was found in the Spot-the-Difference task.* (Applied Linguistics, student paper)

Another noteworthy pattern found in the corpus was *show/find + that clause*, which was in line with the findings of Hyland and Tse (2005). The following examples are representative of this pattern. These *that*-clauses allow writers in both disciplines to interpret their claim (see Example 19), to interpret previous studies (see Example 20), and to interpret methods, theories, and models (Example 21).

19) ***Our data show that****, globally, most of the strategies used by our participants were directed at the negotiation of meaning.* (Applied Linguistics, student paper)

20) ***Rose's research also shows that*** *lower-level learners lack situational awareness, meaning that they use the same types of strategies for every situation, regardless of appropriateness.* (Applied Linguistics, student paper)

21) *Based on field experience from US-30 highway project,* ***it was found that*** *MEMS sensors did not work well in terms of survivability because three out of four sensors malfunctioned just several hours after concrete paving.* (Civil Engineering, student paper)

Based on all those observations, it was found that by using the verbs *find* and *show*, both graduate students and academics in the two disciplines indicated results or summarized claims that were derived from experimental procedures, and that they did not incorporate uncertainty without any use of boosters such as *believe* and *think.*

4.3.3 Functional Analysis of Attitude Markers

The analysis of attitude markers in student and expert writing across the two disciplines revealed that writers explicitly expressed their attitude by attitudinal adjectives, verbs, and adverbs. When the most frequently preferred attitude markers were examined, it was found that *important* was the most preferred attitude adjective by Applied Linguistics academics and

students in Civil Engineering. This attitude adjective was also used frequently by Civil Engineering academics and students in Applied Linguistics who predominantly used *even* as their most frequent attitude marker. Overall, *important* and *even* were two attitude markers that were employed by students and academic in both disciplines, but their frequency level differed.

An additional result of the analysis of the attitude adjective *important* was that both Civil Engineering academics and students tended to use *important* as a noun premodifier. Furthermore, *factor, consideration,* and *role* were the most frequently used nouns after the attitude adjective *important* in Civil Engineering. The following examples illustrate the common pattern in Civil Engineering:

22) *Another **important factor** to account for is the value of time of the passengers that get delayed.* (Civil Engineering, student paper)

23) *The majority of rural populations are from economically weaker sections with negligible private vehicle ownership; therefore, the public transport system is an **important consideration** in the context of rural India.* (Civil Engineering, published article)

On the other hand, in Applied Linguistics this pattern was + *important* + *to*-infinitive and +*important* + *for* + noun preceded by the subject pronoun (*it*). This frequent use of *important* with anticipatory-*it*, as Hewings and Hewings (2002) points out, enabled writers to foreground an evaluation as shown in the examples below:

24) *To achieve more success, it is **important for future research** to refine the design of the development program regarding the time and technics.* (Applied Linguistics, student paper)

25) *It is **important to note** that conducting the study at a single institution in Japan probably limits the generalizability of the findings.* (Applied Linguistics, published article)

One common and frequently used attitude verb was *expected*, and *expected to* constituted one third of all instances in student and expert writing in both disciplines. When each discipline was examined individually, it was found that Civil Engineering included a great amount of passive forms of *expect*, a formalized reporting system to predict the findings. In addition to using passive structures, the Civil Engineering corpus included anticipatory-*it* construction as provided in the example 25 above to minimize author presence in their texts. The frequent use of anticipatory-*it* construction was consistent with Hyland (2008) and Lee and Casal (2014), who pointed out engineering students' frequent use of anticipatory construction to downplay the self-presence of writer in the text and the uneasiness to adopt an author presence. Examples of this pattern are provided below:

26) *In conclusion**, it was expected** that computer e-waste plastics-modified asphalt binder would be more viscous versus virgin binders.* (Civil Engineering, published article)

27) ***This was expected** because limestone bonds better with binder than does basalt, and therefore leads to a higher tensile strength of the mixture.* (Civil Engineering, student paper)

Unlike the common use of the passive structure in Civil Engineering, writers in Applied Linguistics tended to use first-person pronouns and the active voice, as can be seen in example 28 below, to show the author's expectations in the research process.

28) *The length of the task was designed to be fairly short; **we expected** it to take about 10-20 minutes for our participants to complete.* (Applied Linguistics, student paper)

Overall, it was observed that students and academics in both disciplines employed almost the same attitude markers; however their choice of language pattern differed. Both students and academics expressed their attitude through explicitly signaled attitude verbs, adverbs, and adjectives rather than the use of punctuation, comparatives, and so on. Besides that, due to the common conjunctions with passive forms and the subordination of the focus on the writer, attitude was more impersonal in Civil Engineering. However, in Applied Linguistics, the attitude was more personal due to the use of explicit self-reference through the use of the active voice. This personal attitude could also be attributed to the frequent use of self-mention markers in Applied Linguistics.

4.3.4 Functional Analysis of Self-Mentions

The much more prominent use of self-mentions including particularly the use of *we, our* and *us* in student writing in Applied Linguistics is noteworthy. In addition to the first-person pronouns and possessive adjective, graduate students in Applied Linguistics were the only group of writers who employed *the author* in their texts. Thus, it was clear that students in Applied Linguistics explicitly referred to themselves in their texts and adopted an authorial identity. The following examples demonstrate the use of self-mentions by student writers in Applied Linguistics:

29) *The glosses contain definitions (written by **me**) in English for L2 learners*. (Applied Linguistics, student paper)

30) *Therefore, within a cognitive perspective, **I** might say that both tasks used in the study are effective in providing learners with opportunities to adjust how they express meaning in the L2 in the event of communication difficulties in order to promote mutual understanding.* (Applied Linguistics, student paper)

31) *Therefore, in this study,* ***the author*** *is interested in investigating the effectiveness of an online teachers' development in a collaborative learning in order to foster their knowledge to develop CALL teaching materials.* (Applied Linguistics, student paper)

Interestingly, published papers in Applied Linguistics and Civil Engineering and student papers in Civil Engineering did not include as many self-mentions as student papers did in Applied Linguistics. Particularly, published research articles in Engineering only included *we* and *our* as self-mentions and they were all used in the same three texts. It was also notable that self-mentions in published research articles in Civil Engineering were found to be in the results and discussion sections while in the other student and expert writing in both disciplines, they were used in all sections.

When the words following the self-mentions were examined, it was found that *study, participants,* and *data* were the most frequently preferred words after *our*. A representative example is provided below.

32) *Given that the majority of learners who participated in* ***our study*** *were at the same advanced level of proficiency (CEFR level C1), we can disregard this as an influential factor.* (Applied Linguistics, published article)

An additional notable pattern, *enable/allow* + self-mention (object pronoun) + *to*-infinitive, was found to be frequently used with the self-mention *us,* particularly in student writing across the two disciplines. The following examples illustrate this pattern:

33) *We based the task around situations that would require participants to use request strategies. This* ***enabled us to***

examine *the different types of things people would say when making requests.* (Applied Linguistics, student paper)

34) *Among these devices, XBee Explorer Regulated is a board can be pinned on XBee-PRO to help it regulate voltage input. It* ***allows us to connect*** *a 5V (down to 3.3V) system to any XBee module by translating the 5V serial signals to 3.3V.* (Civil Engineering, student paper)

Overall, the results related to *self-mentions* as reported above suggest that in Civil Engineering academics did not attempt to interact with their readers through the inclusion of self-mentions. This was quite unlike Applied Linguistics writers, who presented themselves as authorial selves and underscored their contribution to the discipline through the use of first-person pronouns and possessive adjectives.

In this chapter, the results of the quantitative and qualitative analyses that were performed to answer each research question were presented. In the following chapter, the results will be summarized and the implications of the analysis will be discussed.

CHAPTER 5. CONCLUSION

The overall goal of this study was to investigate how student writers and academics make use of expressions of stance in academic writing, and how the disciplines of Civil Engineering and Applied Linguistics differ from each other in the use of stance features. Previous researchers have mainly examined stance-taking in published research articles (Aull and Lancaster, 2014; Hppd, 2004; Hyland, 2005a, 2011; Swales & Van Bonn, 2007; Taki & Jafarpour, 2012; Vold, 2006a, 2006b) and student theses (Ahmad & Mehrjooseresht, 2012; Hyland & Tse, 2004; Lee & Casal, 2014). This study is distinctive in that it examined student research papers written as part of a course requirement and compared them to published research articles written by professionals. Thus, building upon the previous research, this study was concerned with how student writers construct stance when they write a research paper to fulfill a course requirement, which represents an authentic but under-researched stage in advanced academic writing development.

An additional novel aspect of this study is its emphasis on the comparison of Civil Engineering and Applied Linguistics. Many studies have investigated the use of stance markers comparing the 'hard' sciences to the 'soft' fields (Abdi, 2002; Abdollahzadeh, 2011; Auria, 2008; Hyland, 2005a, 2011; Pho, 2008; Vold, 2006b), but researchers have not specifically examined Civil Engineering and Applied Linguistics. Thus, this study contributes to the field by demonstrating stance taking strategies used in the disciplines of Civil Engineering and Applied Linguistics and shows the similarities and differences in the use of four categories of stance with hopes of gaining better understanding of the disciplinary differences. In many cases, the findings of this study have further validated that general disciplinary differences can be observed in these two specific disciplines.

This chapter begins with a summary of the findings. Then, it provides the implications of these results and addresses the limitations of the study. The chapter ends with suggestions and directions for future research on the investigation of stance markers.

5.1 Summary of Findings

The current study was based on three research questions. The first research question examined the quantitative use of stance features employed by student and expert writers in academic writing. To provide a summary of the results for the first research question, findings suggested that both students and academics made use of expressions of stance. The analysis showed that students employed more stance markers when compared to academics. In particular, students in Applied Linguistics used more overall stance markers than academics, and their use of stance markers in each category outnumbered expert writing. Students' more frequent stance-taking did not resonate with other studies (Aull & Lancaster, 2014; Hewings, 2004; Hyland, 2005; 2011) which found that expert writers make use of stance markers more than students do.

As far as the similarities between novice and expert writing are concerned, hedges were the most frequently used type of stance across the two levels of writing. Attitude markers in two types of writing were the least commonly used category of stance regardless of level of writing. These findings confirmed what previous studies (Abdi, 2002; Abdollahzadeh, 2011) found and demonstrated that both student and professional writers presented their arguments with caution and refrained from expressing their attitudes.

With regard to the differences between novice and expert writing, the biggest difference was the use of self-mention markers. This finding, in line with previous research (Barton, 1993; Hyland, 2004; 2011), could demonstrate the different nature of authorial identity constructed by student writers and academics in research articles. Student writers, particularly in Applied

Linguistics, showed more author presence in the text, while academics distanced themselves from the reader with fewer use of self-mentions, especially in Civil Engineering.

The second research question aimed at exploring the disciplinary similarities and differences and investigated how frequently stance features are used across the disciplines of Civil Engineering and Applied Linguistics, including both student and expert writing. Confirming findings of the previous studies (Hyland, 2005; 2011; Vold, 2006), Applied Linguistics included more stance markers than Civil Engineering in all types of stance. Overall, students and academics in Applied Linguistics used stance features almost twice as frequently as those who are in Civil Engineering.

Similar to the findings of the first research question, in both disciplines, hedges occurred with the highest frequency. This finding resonated with other studies (Abdi, 2002; Abdollahzadeh, 2011; Hyland, 2011) which found hedges to be the most occurring category of stance. This common use hedges across the two disciplines demonstrated that writers did not report their research with confidence and expressed their arguments with caution.

Additionally, confirming Barton (1993) and Hyland (2004, 2011), self-mentions were found to have the highest difference in terms of the distribution of frequencies in both disciplines. The findings demonstrated that writers in Civil Engineering did not employ self-mentions frequently and subordinated their voice in the text, while in Applied Linguistics it seemed common to use these expressions and to claim authority by using first-person pronouns.

The focus of the third research question was on a functional description of the use of stance markers. This research question comprised of a qualitative analysis of the most important quantitative trends comparing both student and expert writing and Civil Engineering and Applied

Linguistics. One of the most common strategies used by the writers in both disciplines was the use modal verbs (*could, may, might, should,* and *would)* as a hedging strategy. This finding, in line with Hyland (1994), indicated that both disciplines evaluated their assertions cautiously through the frequent use of modal verbs in representing and explaining their study.

In Civil Engineering, stance-taking in both student and expert writing was more impersonal through the use of passive structures and anticipatory-*it*. Resonating with Hyland, (2008, 2011), writers in Civil Engineering were inclined to use a passive construction especially after the stance markers such as modal verbs (*may, would*) and combined them with an inanimate subject to downplay the role of the writers (*the strain data could be used for*). Another common strategy which shows that stance is more impersonal in Civil Engineering was the preference for anticipatory-*it* (*it is clear that*) structures over self-mention markers. Additionally, Civil Engineering writers did not make use of the boosters *believe* and *think*. That is, Civil Engineering did not incorporate uncertainty with the use of these cognitive verbs and this seems logical considering the experimental and applied nature of this field.

In Applied Linguistics, on the other hand, stance-taking was more personal due to the frequent use of self-mention markers (*we assume that*) and fewer use of passive forms. Confirming Hyland's (2011) finding, Applied Linguistics writers tended to use first-person subject pronoun before hedges frequently to construct an authorial self and to emphasize their contribution to the field. Unlike Civil Engineering, the use of cognitive verbs (*think* and *believe*) were more frequent in Applied Linguistics along with the use of first-person pronouns. The common use of self-mention markers and the use of first-person pronouns demonstrated that stance-taking was personal in Applied Linguistics.

5.2 Limitations

Inevitably, the study was not without its limitations. These limitations relate to the sample size, number of authors, and reliability.

One of the limitations to this study stems from the small sample size of corpus and concerns the lack of diversity among the students who agreed to send their research papers. Student papers in Civil Engineering were collected from nine graduate students who registered for the same course. This graduate level writing course was not part of the Civil Engineering curriculum, but the Applied Linguistics courses included in this study from Applied Linguistics field were all part of the curriculum of Applied Linguistics. If this study were to be replicated, a larger group of students from different graduate-level courses from Civil Engineering field should be recruited. Besides that, using larger number of research articles written by either students or academics is obviously desirable to get quantitative in-depth explorations as the analysis of individual stance features and their linguistic patterns would be more representative with larger number of samples. It would be desirable for future studies to include more than two disciplines to be able to generalize the findings to other disciplines.

A further drawback to this study is related to the number of authors. Because the data was collected from students taking different graduate-level courses, requirements for each course were different. While some of the research articles were written by multiple authors, some were written by a single author. Considering that the number of writers may affect the use of stance markers, future studies should aim to examine research articles written by either a single author or multiple authors to enhance the generalizability of results.

Another limitation was that both quantitative and qualitative analyses were carried out by hand by the researcher. Because the contextual analysis was conducted to determine the

instances that did not fall into one of the categories of stance, it was sometimes difficult to determine the functional use of stance markers. Hence, it would have been ideal for the further investigation of stance markers to have more than one researcher examine the instances to avoid subjective judgment of interpretations and ensure that the analysis is reliable.

5.3 Implications

The findings of this study suggest some implications for both language instructors, students, and researchers. One important implication pertains to disciplinary differences. Despite the fact that both disciplines employed expressions of stance, their frequencies differed across two disciplines and each had their own way to project themselves into their text. Hence, differences between the level of writers and disciplines in the use of stance markers could be applied to teaching practices to help both native English-speaking and second language writing students become familiar with the ways of presenting themselves in their text and thus improve their academic writing. By attending to stance markers instructors in each discipline could help students understand how they could express their opinions or construct authorial identity in academic texts. For instance, the frequent use of self-mentions in student writing in Applied Linguistics could increase student writers' awareness of how to present a discoursal self in academic text. By doing so, student writers could easily conform to the expected disciplinary features.

Another implication that can be drawn is that students can benefit from this comparative study. This research not only analyzed disciplinary differences, but investigated how student writers and academics use stance features in academic writing. The findings of these analyses may help student writers understand how their peers and colleagues present themselves in academic research articles. This may help novice writers raise their awareness of the use of

stance in student and expert writing. Their increased awareness could promote their way of presenting their opinions and help them develop better writing skills.

In addition, the current study points to the importance of examining more student research articles produced for graduate courses (in addition to the MA and PhD theses/dissertations that have often been the focus of previous studies) to better understand the contradictory finding that students used more stance markers than expert writers. Investigating research papers that students write to fulfill a course requirement and their comparisons to theses or published research articles could assist researchers' understanding of the frequent use of stance in student writing.

5.4 Directions for Future Research

Based on the findings and limitations of this study, several recommendations could be made for future research calling attention to the importance of more studies on student vs. expert writing in the disciplines of Civil Engineering and Applied Linguistics.

One proposal for future research concerns the size of the sample. Future studies should consider involving more research papers including student and expert writing. For instance, student writing recruited from several discipline-specific courses rather than only one course could reveal significant results. In order to better understand the different uses of stance, further studies also need to examine additional disciplines. This study focused on the analysis of two disciplines, but to fully investigate hard and soft sciences, more disciplines should be explored.

More studies on stance focusing on different sections of research articles may greatly benefit the understanding of disciplinary differences. Although IMRD structure was not the focus of this study, it was observed that all the self-mentions used in Civil Engineering took

place in results section. Thus, examining different sections of academic writing may assist in understanding how each discipline makes use of expressions of stance in different sections of a research article.

In addition, future studies on stance should investigate the perceptions of the writers. With regard to the student papers, follow-up interviews could be carried out to understand, for example, the writers' awareness of how they present themselves and their opinions in their texts. These interviews may reveal significant information related to the use of categories of stance.

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APPENDIX A. STANCE MARKERS INVESTIGATED IN THIS STUDY

(Taken from Hyland 2005c)

Hedges	Largely	Would	Really	Fortunately
About	Likely	Would Not	Show	Hopeful
Almost	Mainly	**Boosters**	Showed	Hopefully
Apparent	May	Actually	Shows	Important
Apparently	Maybe	Always	Shown	Importantly
Appear	Might	Believe	Sure	Inappropriate
Appeared	Mostly	Believed	Surely	Inappropriately
Appears	Often	Believes	Think	Interesting
Approximately	On the whole	Beyond doubt	Thinks	Interestingly
Argue	Ought	Certain	Thought	Prefer
Argues	Perhaps	Certainly	Truly	Preferable
Argued	Plausible	Clear	True	Preferably
Around	Plausibly	Clearly	Undeniable	Preferred
Assume	Possible	Conclusively	Undeniably	Remarkable
Assumed	Possibly	Decidedly	Undisputedly	Remarkably
Broadly	Postulate	Definite	Undoubtedly	Shocked
Certain amount	Postulated	Definitely	Without doubt	Shocking
Certain extent	Postulates	Demonstrate	**Attitude Markers**	Shockingly
Certain level	Presumable	Demonstrated	!	Striking
Claim	Presumably	Demonstrates	Admittedly	Strikingly

Table continued

Claimed	Probable	Doubtless	Agree	Surprised
Claims	Probably	Establish	Agrees	Surprising
Could	Quite	Established	Agreed	Surprisingly
Couldn't	Rather	Evident	Amazed	Unbelievable
Doubt	Relatively	Evidently	Amazing	Unbelievably
Doubtful	Roughly	Find	Amazingly	Understandable
Essentially	Seems	Finds	Appropriate	Understandably
Estimate	Should	Found	Appropriately	Unexpected
Estimated	Sometimes	In fact	Astonished	Unexpectedly
Fairly	Somewhat	Incontestable	Astonishing	Unfortunate
Feel	Suggest	Incontestably	Astonishingly	Unfortunately
Feels	Suggested	Incontrovertible	Correctly	Unusual
Felt	Suggests	Incontrovertibly	Curious	Unusually
Frequently	Suppose	Indeed	Curiously	Usual
From my perspective	Supposed	Indisputable	Desirable	**Self-Mention**
From our perspective	Supposes	Indisputably	Desirably	I
From this perspective	Suspect	Know	Disappointed	We
Generally	Suspects	Known	Disappointing	Me
Guess	Tend to	Must (Possibility)	Disappointingly	My

Table continued

Indicate	Tended to	Never	Disagree	Our
Indicated	Tends to	No doubt	Disagreed	Mine
Indicates	To my knowledge	Obvious	Disagrees	Us
In general	Typical	Obviously	Dramatic	The author
In most cases	Typically	Of course	Dramatically	The author's
In most instances	Uncertain	Prove	Essential	The writer
In my opinion	Uncertainly	Proved	Essentially	The writer's
In my view	Unclear	Proves	Even	
In this view	Unclearly	Realize	Expected	
In our opinion	Unlikely	Realized	Expectedly	
In our view	Usually	Realizes	Fortunate	

APPENDIX B. STANCE MARKERS THAT OCCURRED RARELY IN THE CORPUS

(less than 0.5 occurrences per 10,000 words)

Table B1

Normalized Counts of Hedges in Expert and Student Writing in Civil Engineering (per 10,000 words)

Hedges	**Student Papers in CE**	**Published Papers in CE**	**Total**
Essentially	0.2	0.5	0.4
Largely	0.2	0.5	0.4
Probably	0.0	0.7	0.4
Roughly	0.2	0.5	0.4
Sometimes	0.0	0.7	0.4
Unclear	0.0	0.7	0.4
Apparently	0.0	0.5	0.2
Rather X	0.0	0.5	0.2
Doubt	0.2	0.0	0.1
Fairly	0.2	0.0	0.1
In Most Cases	0.2	0.0	0.1
Maybe	0.2	0.0	0.1
Possibly	0.2	0.0	0.1
Probable	0.0	0.2	0.1
Unlikely	0.0	0.2	0.1

Table B2

Normalized Counts of Boosters in Expert and Student Writing in Civil Engineering (per 10,000 words)

Boosters	**Student Papers in CE**	**Published Papers in CE**	**Total**
Certainly	0.5	0.0	0.2
In Fact	0.2	0.2	0.2
Prove	0.0	0.5	0.2
Realize	0.5	0.0	0.2
Definitely	0.0	0.2	0.1
Evidently	0.0	0.2	0.1
No Doubt	0.2	0.0	0.1
Really	0.0	0.2	0.1
Think	0.2	0.0	0.1

Table B3

Normalized Counts of Attitude Markers in Expert and Student Writing in Civil Engineering (per 10,000 words)

Attitude Markers	Student Papers in CE	Published Papers in CE	Total
Dramatically	0.7	0.0	0.4
Essentially	0.2	0.5	0.4
Desirable	0.5	0.0	0.2
Unexpected	0.0	0.5	0.2
Unexpectedly	0.2	0.2	0.2
Appropriately	0.0	0.2	0.1
Expectedly	0.2	0.0	0.1
Fortunately	0.2	0.0	0.1
Importantly	0.0	0.2	0.1
Inappropriate	0.2	0.0	0.1
Interestingly	0.0	0.2	0.1
Remarkable	0.0	0.2	0.1

Table B4

Normalized Counts of Self-Mention in Expert and Student Writing in Civil Engineering (per 10,000 words)

Self-Mention	Student Papers in CE	Published Papers in CE	Total
Us	0.5	0.0	0.2

Table B5

Normalized Counts of Hedges in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Hedges	Student Papers in AL	Published Papers in AL	Total
Unclear	0.2	0.5	0.4
Apparent	0.2	0.3	0.3
Apparently	0.7	0.1	0.3
Around	0.5	0.2	0.3
Essentially	0.2	0.3	0.3
Mainly	0.5	0.2	0.3
Plausible	0.2	0.3	0.3

Table B5 continued

Roughly	0.2	0.3	0.3
Broadly	0.2	0.2	0.2
Possibly	0.0	0.3	0.2
Suppose	0.0	0.3	0.2
Estimate	0.0	0.2	0.2
Doubt	0.2	0.1	0.2
From This Perspective	0.0	0.2	0.2
Presumably	0.2	0.1	0.2
Certain Level	0.0	0.1	0.1
Guess	0.2	0.0	0.1
In Our Opinion	0.0	0.1	0.1
In Our View	0.0	0.1	0.1
In This View	0.0	0.1	0.1
Maybe	0.2	0.0	0.1
Postulate	0.2	0.0	0.1
Uncertain	0.0	0.1	0.1

Table B6

Normalized Counts of Boosters in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Boosters	**Student Papers in AL**	**Published Papers in AL**	**Total**
Obviously	0.7	0.2	0.4
Certainly	0.2	0.3	0.3
Obvious	0.2	0.3	0.3
Really	0.5	0.2	0.3
Of Course	0.0	0.3	0.2
Definite	0.0	0.2	0.2
Definitely	0.5	0.0	0.2
Evident	0.0	0.2	0.2
Undoubtedly	0.0	0.2	0.2
Certain	0.2	0.0	0.1
Evidently	0.0	0.1	0.1
No Doubt	0.2	0.0	0.1
Truly	0.2	0.0	0.1

Table B7

Normalized Counts of Attitude Markers in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Attitude Markers	Student Papers in AL	Published Papers in AL	Total
Prefer	0.7	0.2	0.4
Essentially	0.2	0.3	0.3
Unfortunately	1.0	0.0	0.3
Essential	0.2	0.2	0.2
Fortunately	0.5	0.1	0.2
Hopefully	0.7	0.0	0.2
Inappropriate	0.5	0.1	0.2
Remarkable	0.0	0.3	0.2
Unexpected	0.2	0.2	0.2
Usual	0.7	0.0	0.2
Appropriately	0.2	0.1	0.2
Disagree	0.2	0.1	0.2
Dramatically	0.2	0.1	0.2
Preferable	0.2	0.1	0.2
Striking	0.0	0.2	0.2
Unusual	0.2	0.1	0.2
Desirable	0.0	0.1	0.1
Disappointing	0.2	0.0	0.1
Preferably	0.0	0.1	0.1
Remarkably	0.2	0.0	0.1
Strikingly	0.0	0.1	0.1
Understandable	0.0	0.1	0.1
Unfortunate	0.0	0.1	0.1
Unusually	0.0	0.1	0.1

Table B8

Normalized Counts of Self-Mention in Expert and Student Writing in Applied Linguistics (per 10,000 words)

Self-Mentions	Student Papers in AL	Published Papers in AL	Total
Me	1.2	0.0	0.4
My	1.2	0.0	0.4
Mine	0.2	0.0	0.1

Table B9

Normalized Counts of Hedges in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Hedges	**Student Papers**		**Total**
	Civil Engineering	**Applied Linguistics**	
Apparently	0.0	0.7	0.4
Doubt	0.2	0.2	0.2
Essentially	0.2	0.2	0.2
Maybe	0.2	0.2	0.2
Roughly	0.2	0.2	0.2
Apparent	0.0	0.2	0.1
Broadly	0.0	0.2	0.1
Guess	0.0	0.2	0.1
In Most Cases	0.2	0.0	0.1
Plausible	0.0	0.2	0.1
Possibly	0.2	0.0	0.1
Postulate	0.0	0.2	0.1
Presumably	0.0	0.2	0.1
Unclear	0.0	0.2	0.1
Unlikely	0.0	0.2	0.1

Table B10

Normalized Counts of Boosters in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Boosters	**Student Papers**		**Total**
	Civil Engineering	**Applied Linguistics**	
Certainly	0.5	0.2	0.4
Evident	0.7	0.0	0.4
Prove	0.0	0.7	0.4
Definitely	0.0	0.5	0.2
No Doubt	0.2	0.2	0.2
Really	0.0	0.5	0.2
Certain	0.0	0.2	0.1
Obvious	0.0	0.2	0.1
Truly	0.0	0.2	0.1

Table B11

Normalized Counts of Attitude Markers in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Attitude Markers	Student Papers		Total
	Civil Engineering	Applied Linguistics	
Fortunately	0.2	0.5	0.4
Hopefully	0.0	0.7	0.4
Inappropriate	0.2	0.5	0.4
Interestingly	0.0	0.7	0.4
Surprising	0.0	0.7	0.4
Usual	0.0	0.7	0.4
Desirable	0.5	0.0	0.2
Essentially	0.2	0.2	0.2
Appropriately	0.0	0.2	0.1
Disagree	0.0	0.2	0.1
Disappointing	0.0	0.2	0.1
Dramatic	0.2	0.0	0.1
Expectedly	0.2	0.0	0.1
Preferable	0.0	0.2	0.1
Remarkably	0.0	0.2	0.1
Unexpected	0.0	0.2	0.1
Unexpectedly	0.2	0.0	0.1
Unusual	0.0	0.2	0.1

Table B12

Normalized Counts of Self-Mention in Student Writing in Civil Engineering and Applied Linguistics (per 10,000 words)

Self-Mention	Published Research Articles		Total
	Civil Engineering	Applied Linguistics	
Mine	0.00	0.2	0.1

Table B13

Normalized Counts of Hedges in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Hedges	Published Research Articles		Total
	Civil Engineering	Applied Linguistics	
Essentially	0.5	0.3	0.4
Roughly	0.5	0.3	0.4

Table B13 continued

Fairly	0.0	0.5	0.3
Apparent	0.0	0.3	0.2
Apparently	0.5	0.1	0.2
Plausible	0.0	0.3	0.2
Possibly	0.0	0.3	0.2
Suppose	0.0	0.3	0.2
Broadly	0.0	0.2	0.2
From This Perspective	0.0	0.2	0.2
Certain Level	0.0	0.1	0.1
Doubt	0.0	0.1	0.1
Feel	0.0	0.1	0.1
In Our Opinion	0.0	0.1	0.1
In Our View	0.0	0.1	0.1
In This View	0.0	0.1	0.1
Presumably	0.0	0.1	0.1
Probable	0.2	0.0	0.1
Uncertain	0.0	0.1	0.1

Table B14

Normalized Counts of Boosters in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Boosters	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
Realize	0.0	0.6	0.4
Evident	0.5	0.2	0.3
Obviously	0.5	0.2	0.3
Certainly	0.0	0.3	0.2
Of Course	0.0	0.3	0.2
Really	0.2	0.2	0.2
Definite	0.0	0.2	0.2
Evidently	0.2	0.1	0.2
Undoubtedly	0.0	0.2	0.2
Definitely	0.2	0.0	0.1
Sure	0.0	0.1	0.1

Table B15

Normalized Counts of Attitude Markers in Published Research Articles in Civil Engineering and Applied Linguistics (per 10,000 words)

Attitude Markers	**Published Research Articles**		**Total**
	Civil Engineering	**Applied Linguistics**	
Agree	0.0	0.6	0.4
Essential	0.7	0.2	0.4
Essentially	0.5	0.3	0.4
Prefer	0.7	0.2	0.4
Interestingly	0.2	0.3	0.3
Remarkable	0.2	0.3	0.3
Unexpected	0.5	0.2	0.3
Dramatic	0.7	0.0	0.2
Unfortunately	0.7	0.0	0.2
Appropriately	0.2	0.1	0.2
Correctly	0.0	0.2	0.2
Striking	0.0	0.2	0.2
Desirable	0.0	0.1	0.1
Disagree	0.0	0.1	0.1
Dramatically	0.0	0.1	0.1
Fortunately	0.0	0.1	0.1
Inappropriate	0.0	0.1	0.1
Preferable	0.0	0.1	0.1
Preferably	0.0	0.1	0.1
Strikingly	0.0	0.1	0.1
Understandable	0.0	0.1	0.1
Unexpectedly	0.2	0.0	0.1
Unfortunate	0.0	0.1	0.1
Unusual	0.0	0.1	0.1
Unusually	0.0	0.1	0.1

APPENDIX C. STANCE MARKERS THAT DID NOT OCCUR IN THE CORPUS

Table C1

Hedges That Were Not Used By Students and Academics in Civil Engineering

Apparent, Appeared, Argue, Argued, Argues, Broadly, Certain Amount, Certain Extent, Certain Level, Doubtful, Feel, Feels, Felt, From My Perspective, From Our Perspective, From This Perspective, Guess, In Most Instances, In My Opinion, In My View, In Our Opinion, In Our View, In This View, On The Whole, Ought, Plausible, Plausibly, Postulate, Postulated, Postulates, Presumable, Presumably, Somewhat, Suppose, Supposed, Supposes, Suspect, Suspects, Tended To, To My Knowledge, Uncertain, Uncertainly, Unclearly

Table C2

Boosters That Were Not Used By Students and Academics in Civil Engineering

Believe, Believes, Beyond Doubt, Conclusively, Decidedly, Definite, Doubtless, Finds, Incontestable, Incontestably, Incontrovertible, Incontrovertibly, Indeed, Indisputable, Indisputably, Never, Of Course, Prove, Proves, Realize, Realizes, Surely, Think, Thinks, Truly, Undeniable, Undeniably, Undisputedly, Undoubtedly , Without Doubt

Table C3

Attitude Markers That Were Not Used By Students and Academics in Civil Engineering

!, Admittedly, Agree, Agreed, Agrees, Amazed, Amazing, Amazingly, Astonished, Astonishing, Astonishingly, Correctly, Curious, Curiously, Desirably, Disagree, Disagreed, Disagrees, Disappointed, Disappointing, Disappointingly, Fortunate, Hopeful, Hopefully, Inappropriately, Prefer, Preferable, Preferably, Remarkably, Shocked, Shocking, Shockingly, Striking, Strikingly, Surprised, Surprising , Surprisingly , Unbelievable , Unbelievably, Understandable, Understandably, Unfortunate, Unusual, Unusually, Usual

Table C4

Self-Mentions That Were Not Used By Students and Academics in Civil Engineering

I, Me, Mine, My, The Author, The Author's, The Writer, The Writer's

Table C5

Hedges That Were Not Used By Students and Academics in Applied Linguistics

Certain Amount, Certain Extent, Doubtful, Feels, From My Perspective, From Our Perspective, In Most Cases, In Most Instances, In My Opinion, In My View, On The Whole, Ought, Plausibly, Postulate, Postulates, Presumable, Probable, Supposes, Suspect, Suspects, To My Knowledge, Uncertainly, Unclearly

Table C6

Boosters That Were Not Used By Students and Academics in Applied Linguistics

Beyond Doubt, Conclusively, Decidedly, Doubtless, Finds, Incontestable, Incontestably, Incontrovertible, Incontrovertibly, Indisputable, Indisputably, Realizes, Surely, Thinks, Undeniable, Undeniably, Undisputedly, Without Doubt

Table C7

Attitude Markers That Were Not Used By Students and Academics in Applied Linguistics

!, Admittedly, Amazed, Amazing, Amazingly. Astonished, Astonishing, Astonishingly, Curious, Curiously, Desirably, Disagrees, Disappointed, Disappointingly, Dramatic, Expectedly, Fortunate, Hopeful, Inappropriately, Shocked, Shocking, Shockingly, Surprised, Unbelievable, Unbelievably, Understandably, Unexpectedly

Table C8

Self-Mentions That Were Not Used By Students and Academics in Applied Linguistics

The Author's, The Writer, The Writer's

Table C9

Hedges that did not occur in Student Papers in Civil Engineering and Applied Linguistics

Certain Amount, Certain Extent, Certain Level, Doubtful, Feels, From My Perspective, From Our Perspective, From This Perspective, In Most Instances, In My Opinion, In My View, In Our Opinion, In Our View, In This View, On The Whole, Ought, Plausibly, Postulate, Postulates, Presumable, Probable, Rather X, Suppose, Supposed, Supposes, Suspect, Suspects, To My Knowledge, Uncertain, Uncertainly, Unclearly

Table C10

Boosters that did not occur in Student Papers in Civil Engineering and Applied Linguistics

Beyond Doubt, Conclusively, Decidedly, Definite, Doubtless, Evidently, Finds, Incontestable, Incontestably, Incontrovertible, Incontrovertibly, Indisputable, Indisputably, Of Course, Realizes, Surely, Thinks, Undeniable, Undeniably, Undisputedly, Undoubtedly, Without Doubt

Table C11

Attitude markers that did not occur in Student Papers in Civil Engineering and Applied Linguistics

!, Admittedly, Amazed, Amazing, Amazingly, Astonished, Astonishing, Astonishingly, Curious, Curiously, Desirably, Disagree, Disagrees, Disappointed, Disappointingly, Fortunate, Hopeful, Importantly, Inappropriately, Preferably, Remarkable, Shocked, Shocking, Shockingly, Striking, Strikingly, Surprised, Surprisingly, Unbelievable, Unbelievably, Understandable, Understandably, Unfortunate, Unusually

Table C12

Self-Mentions that did not occur in Student Papers in Civil Engineering and Applied Linguistics

The Author's, The Writer, The Writer's

Table C13

Hedges that did not occur in Published Articles in Civil Engineering and Applied Linguistics

The Certain Amount, Certain Extent, Doubtful, Feel, Feels, From My Perspective, From Our Perspective, Guess, In Most Cases, In Most Instances, In My Opinion, In My View, Maybe, On The Whole, Ought, Plausibly, Postulate, Postulated, Postulates, Presumable, Supposes, Suspect, Suspects, To My Knowledge, Uncertainly, Unclearly

Table C14

Boosters that did not occur in Published Articles in Civil Engineering and Applied Linguistics

Beyond Doubt, Certain, Conclusively, Decidedly, Doubtless, Finds, Incontestable, Incontestably, Incontrovertible, Incontrovertibly, Indisputable, Indisputably, No Doubt, Proves, Realize, Realizes, Surely, Thinks, Truly, Undeniable, Undeniably, Undisputedly, Without Doubt

Table C15

Attitude Markers that did not occur in Published Articles in Civil Engineering and Applied Linguistics

!, Admittedly, Agrees, Amazed, Amazing, Amazingly, Astonished, Astonishing, Astonishingly, Curious, Curiously, Desirably, Disagreed, Disagrees, Disappointed, Disappointing, Disappointingly, Expectedly, Fortunate, Hopeful, Hopefully, Inappropriately, Remarkably, Shocked, Shocking, Shockingly, Surprised, Unbelievable, Unbelievably, Understandably, Usual

Table C16

Self-Mentions that did not occur in Published Articles in Civil Engineering and Applied Linguistics

I, Me, Mine, My, The Author, The Author's, The Writer, The Writer's

APPENDIX D. IRB APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 6/1/2015

To: Secil Akinci
412 Ross Hall

CC: Dr. Bethany Gray
206 Ross Hall

From: Office for Responsible Research

Title: An Analysis of Graduate Students' Use of Stance Markers in Two Academic Disciplines

IRB ID: 15-267

Study Review Date: 5/29/2015

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified directly or through identifiers linked to the subjects.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

  Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

  Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.