

CONTRASTIVE LEARNER CORPUS ANALYSIS OF EPISTEMIC MODALITY AND INTERLANGUAGE PRAGMATIC COMPETENCE IN L2 WRITING

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This paper reports on a preliminary study on second language (L2) learners' interlanguage pragmatic (ILP) development in academic written discourse by examining how epistemic modality is used by non-native speaker (NNS) writers compared with NS writers in both native speaker (NS) and NNS corpus data. This study also investigates how NNS writers gradually develop interlanguage pragmatic competence in academic writing across L2 proficiency levels. The study of epistemic modality in academic writing not only provides us valuable insights on understanding the concepts of intercultural competence and L2 acquisitional pragmatics, but it also contributes to ILP and Second Language Acquisition (SLA) research and the teaching of L2 pragmatics. The findings of the study thus point to a need for cultural-sensitive curricula and explicit pragmatic instructions in writing classrooms, with an aim to emphasize the importance of acquisitional process of intercultural pragmatic competence.

INTRODUCTION

As interlanguage pragmatics (ILP) are defined as the study of nonnative speakers' use and acquisition of linguistic action patterns in a second language (L2) (Kasper & Blum-Kulka, 1993, p. 3), ILP has become one of the heated areas in the field of Second Language Acquisition (SLA), drawing more and more interest of SLA analysts. As Kasper and Blum-Kulka (1993) state, ILP has a great impact on language teaching and learning, for ILP research examines learners' specific pragmatic behaviors, both comprehension and production, and their relationship to learners' first language (L1) and second language (L2). Most importantly, ILP studies linguistic actions in the context in which the language practices are situated (Kasper, 1992). The issue of how language is used in discourse thus greatly contributes to SLA studies.

One of the recent studies that address the issue of ILP in L2 language learning classrooms was conducted by Belz and Vyatkina (2005). Belz and

Vyatkina investigate the issue of learners' development of L2 pragmatic competence with a created German learner corpus, which, according to O'Keeffe, McCarthy and Carter (2007), refers to a principled collection of electronic texts usually stored on a computer. Through an interventional approach to classroom research by incorporating corpus-informed materials, Belz and Vyatkina examine how English learners of German acquire German modal verbs over a nine-week instructional period. The findings indicate that learners not only increase their use and frequency of German modal particles, but they also increase their awareness of this pragmatic feature in interaction with native speakers of German after the corpus-based interventional treatment. That is, the L2 learners demonstrate developmental interlanguage pragmatic competence throughout different stages of learning.

The present study expands on Belz and Vyatkina's (2005) ideas of the development of L2 pragmatic competence using a *contrastive learner corpus analysis* (Granger, 1998; 2003) and further applies such an analysis to academic written discourse. As Carson (2001) claims, writing teachers and researchers "need to be sensitive to different interpretations of utterances in line with the learner's developmental stage" (p. 193). However, due to a scarcity of IL studies on pragmatic competence in writing, the understanding of the stages of pragmatic competence in developing writers is still underexplored (Carson, 2001). As a result, there is a great need for interlanguage pragmatics research in L2 writing. Based on the literature on Second Language Writing (SLW), English for Specific Purposes (ESP) and English for Academic Purposes (EAP), it is evident that the appropriate use of epistemic modality represents a representative example of pragmatic competence in written communication. The knowledge and use of epistemic modality in writing not only demonstrates the pragmatic aspects of writing (Hyland, 1994) but also helps writers achieve "academic communicative competence" in academic discourse (Swales, 1990, p. 9).

Despite the importance of appropriate use of epistemic modality in writing, L2 learners often have difficulties interpreting and adequately using epistemic modality and politeness devices such as hedges and experience pragmatic failure in L2 writing. For example, in their study, Milton and Hyland (1999) examine doubt and certainty in two large corpora of native (NS) and non-native speaker (NNS) student essays. The findings indicate that Chinese NNS writers tend to inappropriately overuse directive and authoritative assertions in argumentative writing compared with NS writers. Milton and Hyland (1999) attribute the Chinese writers' inappropriate use of directive assertions in L2 writing to L1 influence and cultural difference. The fact that epistemic devices have multiple semantic meanings and pragmatic interpretations further adds another layer of difficulty for L2 learners. Over 350 lexical devices are found and used for expressing doubt and certainty in English. These not only include modal verbs such as *might* and *could*, but also epistemic verbs (e.g., *know*, *believe*), adjectives (e.g., *likely*, *possible*), adverbs (e.g., *probably*, *possibly*) and nouns (e.g., *doubt*, *possibility*) (Holmes, 1988, p.

27). In addition to the complicated use of epistemic modality, little emphasis and guidance on the correct use of epistemic devices in traditional writing classrooms and existing writing textbooks also leads to L2 learners' difficulty in acquiring this aspect of pragmatic competence in writing (Holmes, 1984, 1988; Hinkel, 1997; Hyland, 1994; Milton & Hyland, 1999).

To identify learners' difficulty and in response to the need for IL research on writing, the present study adopts a corpus-based approach examining data from both the native English speaker corpus (BNC baby) and the learner corpus, Chinese Learner English Corpus (CLEC), which contains over one million words from Chinese high school and college EFL learners' essays across five education/proficiency levels. The extended view of epistemic modality was adopted in the study, including modal auxiliaries (e.g., *might, may*); epistemic lexical verbs (e.g., *think, indicate*); epistemic adverbs (e.g., *probably, possibly*); epistemic adjectives (e.g., *probable, possible*) and epistemic nouns (e.g., *indication, suggestion*) (Rizomilioti, 2006, p. 68). Different from the previous studies on this research area (i.e., Milton and Hyland, 1999), the present study examines L2 learners' use of epistemic devices across five different language proficiency levels, in comparison with native writers.

For the purpose of this paper, I will report the preliminary findings of an examination of how the epistemic modal verbs (*may* and *might*), adjectives (*possible, likely, unlikely, certain, and sure*), and adverbs (*possibly* and *probably*) were used in both NS and NNS corpora. Through quantitative analysis, the frequency and use of epistemic devices were investigated to identify L2 learners' developmental pragmatic competence across different proficiency levels in academic written discourse. It is hoped that the findings of the study could shed some lights on L2 pragmatics and writing research in general and contribute to the writing curricula design.

In the next section, I review the relevant literature on the notion of L2 pragmatic competence in SLA, with a particular emphasis on interlanguage pragmatic competence. I then provide a brief literature review on epistemic modality and explain how it is realized in academic written discourse. The rationale for adopting a contrastive learner analysis in this study, examining both the native corpus and learner corpus, is also presented. The following section describes the two corpora used in this study. The final section summarizes the preliminary results and discussion. The paper will end with the suggestion that cultural-sensitive curricula and explicit pragmatic instructions are needed in writing classrooms to raise L2 learners' awareness of the role of cultural-specific knowledge in L2 pragmatic competence development.

REVIEW OF THE LITERATURE

Pragmatic Competence in SLA

Pragmatic competence, as Kasper (1996) defines it, refers to

“knowledge of communicative action and how to carry it out (illocutionary competence)” and as the “ability to use language appropriately according to context (sociolinguistic competence)” (p. 145). According to Koike (1989), pragmatic competence is “the speaker’s knowledge and use of rules of appropriateness and politeness which dictate the way the speaker will understand and formulate speech acts” (p. 279). The study of second language (L2) pragmatic development, due to its importance and close relationship with language learning and teaching, has been broadly studied in recent years, including topics such as the comprehension of indirectness, pragmatic awareness, the development of pragmatic and discourse competence from a cross-sectional and longitudinal perspective, pragmatic transfer and the influence of social-affective factors on the development of pragmatic ability, and the effect of instruction on the classroom learning of L2 pragmatics (Kasper, 2007, p. 1).

Interlanguage pragmatics (ILP) has thus emerged as an interdisciplinary field in SLA studies, which has consequently been defined as the study of nonnative speakers’ use and acquisition of linguistic action patterns in a second language (L2) (Kasper & Blum-Kulka, 1993, p. 3). Interlanguage is the term given to “an interim series of stages of language learning between the first (L1) and second language (L2) grammars through which all L2 learners must pass on their way to attaining fluency in the target language” (Koike, 1989, p. 280). Due to the nature of interlanguage development of L2 learners, it is evident that the learners’ native language and native culture could have an influence, positive or negative, on their ILP knowledge and performance (Kasper & Blum-Kulka, 1993). L1 transfer thus plays a role in one’s acquisition of an additional language. This language transfer builds not only at the linguistic level but also at the socio-cultural and sociopragmatic level (Kasper, 1992). For example, in Milton and Hyland’s study (1999), it is evident that Chinese NNS writers tended to inappropriately overuse directive and authoritative assertions in argumentative writing compared with NS writers. They attribute Chinese learners’ inappropriate usage of directiveness in English academic writing indicates a negative transfer from learners’ L1 (Chinese) pragmatic competence to ILP knowledge that differs from the L2 target. Another example can be found in McEnery and Kifle (2002)’s study of a comparison of Eritrean NNS learners and NS speakers in the use of epistemic devices in writing. The findings reveal that the Eritrean L2 learners use fewer strong modality devices compared with their NS peers. The discrepancy between the NNS and NS group in terms of epistemic modality usage indicates the Eritrean writers’ lower degree of confidence in writing, which may result from their native culture. The two studies both address the role of learners’ L1 and native culture in their interlanguage production. This negative transfer from L1 thus explains L2 learners’ difficulties in acquiring L2 pragmatic competence in language learning.

Previous studies also provide evidence that the extent the negative transfer is applied to learners’ IL development depends on the learners’

proficiency levels (Bardovi-Harlig, 1999; Bardovi-Harlig & Dornyei, 1998; Maeshiba, Yoshinaga, Kasper & Ross, 1996; Troborg, 1987; Wishnoff, 2000). For instance, in her study, Trosborg (1987) compared the use of apologies between native speakers of English, native speakers of Danish, and three proficiency levels of Danish EFL learners. She found that the learners tended to use more modality markers (e.g., downtoners, hedges, boosters) with increasing proficiency levels approaching a level closer to that of NS speakers. The results indicate a clear developmental pattern of L2 pragmatic competence. Some subsequent studies, however, propose an opposite view regarding the developmental relationship between L2 pragmatic competence and L2 proficiency. With an examination of the speech acts produced by 137 university-level Japanese learners of English who participated in an 8-month academic exchange program in Canada in different advice-giving situations, Matsumura (2003) investigated the interrelationship between interlanguage pragmatic competence, L2 proficiency, and exposure to L2 by examining learners' use of politeness with the degree of approximation to native English speakers' language behaviors. Matsumura's study failed to find a clear interrelationship between learners' proficiency level and their ILP competence. Instead, he found that the amount of exposure to L2, rather than L2 proficiency, is the major indicator of learners' interlanguage pragmatic competence. Matsumura's findings (2003) thus showed that the issue of whether L2 proficiency has an impact on learners' ILP competence is still underexplored and needs further investigations in future ILP research.

Another point that is worth noting here is that there are relatively fewer and in fact, limited ILP studies on academic discourse, particularly academic written discourse. More attention has been paid to spoken communication in second language learning; however, it is evident that written communication is of the same importance as spoken communication in fully acquiring a second language, particularly for advanced learners. In recent years, as research in the field of English for Specific Purposes (ESP) and English for Academic Purposes (EAP) has bloomed in SLA studies, there are more and more longitudinal and developmental studies focused on discovering the role of pragmatic competence in specific and academic discourse, which thus became one of the foci in the present study.

Epistemic Modality in Writing

Coates (1995) defines epistemic modality as linguistic actions "concerned with the speaker's assumptions, or assessment of possibilities, and, in most cases, it indicates the speaker's confidence or lack of confidence in the truth of the proposition expressed" (p. 55). Epistemic modality is also defined as the expression of "the speaker's opinion or attitude toward a proposition that the sentence expresses or the situation that the proposition describes" (Lyons, 1977, p. 452), which indicates the degree of commitment by the speaker about the proposition he makes. Different forms of epistemic modality

thus contain different degrees of commitment and confidence of speakers and present a continuum between two ends—doubt and certainty (McEnery & Kifle, 2002). Although modal verbs are widely recognized as the representative epistemic modality, epistemic modality is also realized by various forms and types of linguistic features, including modal auxiliaries (e.g., *must, may*), epistemic lexical verbs (e.g., *think, indicate*), epistemic adverbs (e.g., *probably, perhaps*), epistemic adjectives (e.g., *probable, possible*) and epistemic nouns (e.g., *indication, suggestion*) (Rizomilioti, 2006).

These forms of modality can be placed into two categories—possibility and necessity—depending on the degree of confidence the epistemic device denotes. Hyland and Milton (1997) examined how NNS writers use epistemic modality differently compared with NS writers in argumentative essay writing, and they investigated the writers’ propositions in making arguments based on three degrees of epistemic commitment: “*certainty* (highest probability), *probability* (medial probability), and *possibility* (low probability)” (McEnery & Kifle, 2002, p. 187). Milton and Hyland (1999) extended their study by adding two more categories of epistemic modality, *usuality* (e.g., always, often, never) and *approximation* (e.g., about, almost, approximately) based on semantic meanings for a more precise investigation of their use in writing. “Downtoners”, adopting the term from Holmes (1982, p. 18), are also used to index lexical devices used to weaken their force and indicate the speaker’s lack of confidence, while “boosters” are used to express the speaker’s strong assertion and strengthen the suggested proposition.

Specifically in academic written discourse, epistemic modality may simultaneously convey a writer’s attitude both to propositions and to readers. A writer may use epistemic devices such as hedges or other discourse markers as persuasive and interpersonal strategies not only to express doubt and reduce personal accountability for a statement, but also to demonstrate sensitivity to the views of readers, involving them in a dialogue (Milton and Hyland, 1999). The use of epistemic modality in academic writing demonstrates the pragmatic aspects of academic written discourse (Hyland, 1994; Myers, 1989). More importantly, the ability to appropriately use epistemic modality contributes significantly to pragmatic aspect in English writing and may reflect an advanced level of both linguistic and pragmatic proficiency in the written mode. As a result, this expertise thus becomes an important indicator of learners’ language ability.

However, as pointed out earlier in the introduction, L2 learners have difficulty interpreting and appropriately using politeness devices such as hedges and consequently suffer pragmatic failure in L2 writing. One of the difficulties lies in how epistemic modality takes different forms, including modal verbs, adverbs, formulaic phrases, and so forth. More importantly, every epistemic device (e.g., deontic epistemic device v.s. dynamic epistemic device) has diverse semantic attributes containing different degrees of confidence and commitment in context (Palmer, 2001). The lack of practice in traditional writing classrooms and limited explanation of correct use of

epistemic modality in writing textbooks also contribute to the learners' difficulties and challenges for developing pragmatic competence or "pragmatic appropriacy" (Flowerdew, 2001, p. 372).

Corpus-based Approach and Learner Corpus

In recent years, corpus-based studies have been mushrooming in SLA research (Myles, 2005). As Gass and Selinker (2001) stated in the introductory chapter of their book, *Second Language Acquisition: An Introductory Course*, SLA theorists intend to answer fundamental questions: "Are the rules like those of the native language? Are they like the rules of the language being learned? Are there patterns that are common to all learners regardless of the native language and regardless of the language being learned? Do the rules created by second language learners vary according to the context of use?" (p. 1). A computer corpus enables SLA researchers to seek for answers to these questions and further extend the findings to pedagogical implications in language learning (Granger, 2003). A computer corpus, according to O'Keeffe, McCarthy and Carter (2007), is a principled collection of electronic texts usually stored on a computer. Due to its nature, a computer corpus can store a larger number of texts than traditional methods of text documentation, encouraging large scale studies and allowing more detailed investigation of language production.

In addition to their advantages in terms of scale, different types of computer corpora also contribute to different aspects of SLA research. The use of bilingual corpora, for example, can help answer the first question as to whether the rules of L2 differ from those of L1 and examine different rule patterns in learners' L1 and L2 (Granger, 2003). Learner corpora are also widely used in interlanguage research, with the aim of investigating what learners' actual language productions are at different acquisition stages or in different processes of learning. Through learner corpus analysis, learners' language use can be documented and studied, which allows teachers to further apply pedagogical treatments to the learners' future learning based on the resulting output from the analysis. Corpora also "constitute resources which, placed in the hands of teachers and learners who are aware of their potential and limits, can significantly enrich the pedagogic environment" (Aston, 1995, p. 261).

As Granger (2003) suggests, "Interlanguage is a variety in its own right, which can be studied as such without comparing it to any other variety. However, for many purposes, both theoretical and applied, it is useful to compare it to other language varieties to bring out its specificities" (p. 127). Therefore, in addition to learner corpus analyses, many corpus-based studies adopt a contrastive approach which compares learner corpora with native corpora in terms of their language uses in specific discourses or genres (Flowerdew, 1998b; Granger, 1998, 2002, 2003; McEnery & Kifle, 2002; Milton & Hyland, 1999). Contrastive Interlanguage Analysis (CIA), first

proposed by Granger (1998), involves two types of comparison, a comparison of native language and learner language (L1 vs. L2) and a comparison of different varieties of interlanguage (L2 vs. L2).

Although Hunston (2002) points out that one of the major drawbacks of adopting the CIA approach in SLA research is that the CIA approach assumes that learners view native speakers' language use as the standard norm, it cannot be denied that CIA allows us to understand what learners do and "what native/expert speakers actually do rather than what reference books say they do" (p. 212). With large-scale comparative analyses of the interlanguage development of different learner populations and native speaker groups, distinguishing features between NNS and NS can be uncovered and identified (Altenberg and Granger, 2001). Knowing the distinguishing features of NS speakers, NNS learners, particularly advanced language learners, are able to increase their metacognitive awareness of how NS produce linguistic actions in specialized contexts and to further forward themselves to the next level which is closer to the NS norm. Within the continuum of language usage produced by NNS and NS, CIA also offers IL researchers a window to examine and identify learners' acquisition sequences throughout different stages of language learning or across different proficiency levels (Cobb, 2003). The identification of learners' acquisition sequences in learning not only contributes to the understanding of the nature of acquiring second languages, but the descriptive results of CIA also contribute to curriculum design, the production of reference tools and pedagogic materials, and classroom-based teaching in FL or SL settings (Meunier, 2002).

Based on the above literature review of interlanguage pragmatics, epistemic modality and contrastive interlanguage analysis, the present study adopts a corpus-based approach to examining both NS and NNS corpora in terms of the use of epistemic devices in academic writing. It is hoped that through a close examination of L1 and L2 writers' use of epistemic modality, not only can epistemic modality be used as an indicator of L2 learners' pragmatic competence, but corpus can also be used as a tool for teachers to uncover learners' developmental acquisitional pragmatics in academic writing classrooms.

METHODOLOGY

Research Questions

In order to explore the issue of interlanguage pragmatic competence in academic written discourse, the research questions that will be addressed here are:

- 1) What characteristics do L2 learners have in writing compared with native speakers in academic discourse?
- 2) Will learners show evidence of developing pragmatic knowledge and pragmatic competence in L2 writing with increasing language proficiency level?

Corpora and Methodology

This study adopted a contrastive learner corpus approach (Granger, 1998; 2003) to examining data from a native English speaker corpus (BNC baby) and a learner corpus, Chinese Learner English Corpus (CLEC) (see Table 1).

Native Speaker Corpus

BNC baby was used as a NS corpus for a contrastive learner corpus analysis with the learner corpus. With the aim to explore the use of epistemic modality in written texts, the academic prose section of BNC baby was selected for the contrastive analysis. A total of 30 texts, approximately 1,100,000 words, were randomly selected from a larger pool (501 texts) of written academic texts from British National Corpus (BNC). The texts were collected from published articles in periodicals or in books, including various topics and disciplines.

Learner Corpus

The Chinese Learner English Corpus (CLEC) is a collection of over one million words from Chinese high school and college EFL learners' argumentative essays across five education levels which are labeled as St2, St3, St4, St5 and St6 in the corpus text files (see Table 1). St2 texts were written by Chinese high school students; St3 texts were written by Chinese college non-English-major students who passed the National English Level 4 test; St4 contains essays written by Chinese college non-English-major students who passed the National English Level 6 test; St5 essays are written by Chinese college English-major students at the lower level, and St6 essays are written by Chinese college English-major students at a higher level. The sub-corpus for each level contains approximately 250,000 words. The L2 learners were given different writing prompts and had to compose argumentative writings in a 30-minute time span. Although no proficiency levels were indicated in the learner corpus, it was assumed that the five education levels also represented learners' proficiency levels (Trosborg, 1995).

Table 1: Total Number of Word Counts in NNS and NS Data

Corpora	Description	Word counts
St2	High school	240,149
St3	College English Level 4 (non-English major)	246,337
St4	College English Level 6 (non-English major)	252,251
St5	College English-major low	236,852
St6	College English-major high	242,929
NS corpus	BNC baby: academic prose	1,144,021

Procedure of Analysis

Nine epistemic devices were selected from the list of the most frequent epistemic devices in academic writing from McEnery and Kifle (2002), with two modal verbs (may, might), five adjectives (possible, likely, unlikely, certain, sure), and two adverbs (possibly and probably). The rationale for analyzing these two modal verbs (may and might) in this study is that may and might are more frequently used as epistemic modality in writing compared with other auxiliary words such as can and could. According to Palmer (2002), epistemic modality words such as can and could could be viewed as multi-functional modal verbs which can not only express epistemic attributes but also doentic semantics. Due to their multi-functional nature, an accurate analysis of these words requires detailed manual examinations to isolate true epistemic uses from other entries, which is beyond the scope of this project.

The five epistemic adjectives were selected here because these five adjectives (possible, likely, unlikely, certain, sure) were more commonly used by L2 learners, particularly beginning and intermediate learners, compared with other adjectives such as apparent and evident. Similarly, the two adverbs (possibly and probably) were chosen and analyzed as the target epistemic devices in this research due to their higher frequent use by L2 learners compared with other adverbs such as approximately and definitely.

AntConc, designed by Anthony (2007), specifically the concordance feature of the program, was used to capture all of the instances from the NS and NNS corpora of the nine epistemic devices: two modal verbs (may, might), five adjectives (possible, likely, unlikely, certain, sure), and two adverbs (possibly, probably). The concordance function was used to examine the frequency of usage of the nine epistemic devices in the five NNS sub-corpus (including St2, St3, St4, St5, St6) and NS corpus, using the NS corpus as a control baseline for a further contrastive learner corpus analysis. The word frequency of the epistemic devices in each corpus was recorded as well as the frequency per 10,000 words. A summary of results is shown in Table 2. A small number of concordance lines representative of epistemic modality used in the corpora are presented as below:

Might (from the NNS corpus, BNS baby-academic prose)

1. Further clarification ***might*** also be required as to how the Situationist negation of art (and cinema) related to the wider sphere of cultural-political struggle.
2. The revival of interest in its ideas ***might*** be explained by this, rather than by its standing as a political organisation.
3. It ***might*** also be argued that the mandatory life sentence makes a substantial contribution to public safety.

Possible (from the NNS corpus, BNS baby-academic prose)

1. It is ***possible*** that juries would prefer to convict of murder in such cases so as to register their abhorrence of the defendant's activities in

- general.
2. The approach of the police to the investigation of rape cases has been subject to much criticism — and then to considerable improvement — and it seems quite *possible* that these improvements, together with the advent of rape-crisis centres and victim-support facilities, have led more women to report rapes than did so formerly.

Prior to the results section, it is necessary to admit the limitation of the methodology. One limitation of this methodology is that the data in the control corpora are produced by native speakers of English in academic discourse but in different communicative environments and are thus not fully comparable to the data in the learner corpus. However, I would like to argue that the language practice of NS and L2 learners cannot be 100% comparable due to the nature of the different language learning environments of NS writers and NNS writers. As McEnery and Kifle (2002) claim in their study, comparing NS and NNS corpus data, there are many variables for NS and NNS groups that are unavoidable as the educational environments being compared are so different that simply matching age groups and educational levels is meaningless (p. 185). In addition to many variables across corpora, there are a limited number of NS corpora available to the public. Most existing NS corpora must be purchased. This factor thus adds another difficulty in finding a comparable NS corpus for a study.

RESULTS

The NNS and NS writers show a remarkable difference in the total frequency of the epistemic modality they use. Epistemic modality appeared in the NNS and NS corpora total 18.76 and 48.8 per 10,000 words respectively. The NS writers employ the epistemic devices approximately three times more than the NNS writers. The two groups also differ from each other in the frequency of the nine selected epistemic modality (see Figure 1).

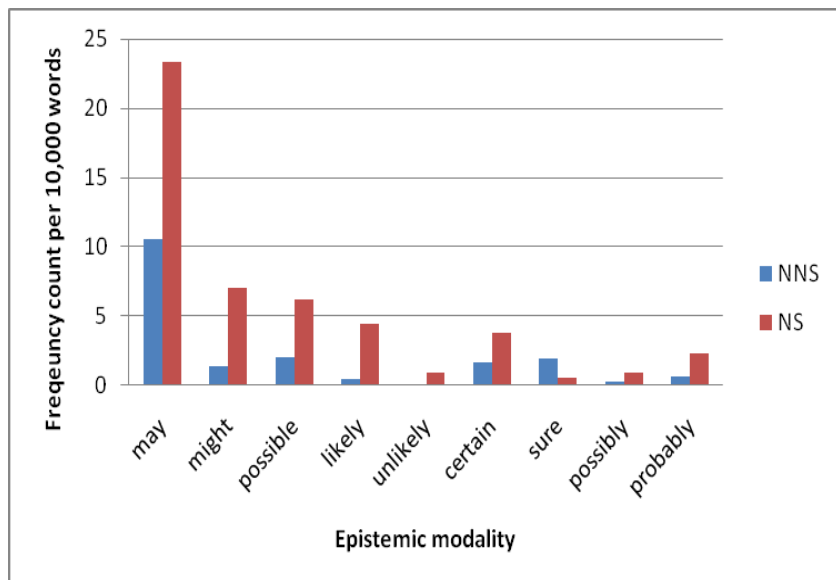


Figure 1: The Frequency Count (per 10,000 words) of all the Epistemic Modality in the NNS and NS Corpora

As some of these devices occur much more frequently than others, it seems necessary to have a closer look at the distribution of each device. Table 2 shows the frequency for each epistemic device following by the different forms of epistemic modality: two epistemic modal verbs (*may*, *might*), five epistemic adjectives (*possible*, *likely*, *unlikely*, *certain*, *sure*), and two epistemic adverbs (*possibly*, *probably*). In the case of epistemic modal verbs, as revealed in Table 2 and Figure 1, the NS writers use *may* and *might* more frequently than the NNS writers. The NNS writers tend to employ *may* with a frequency count of 10.56 per 10,000 words (average over the 5 proficiency levels, $St2+St3+St4+St5+St6/5$), whereas the NS writers use *may* 23.3 times per 10,000 words. Similarly, the NNS groups use *might* with a frequent count of 1.3 per 10,000 words, while the NS group uses *might* 7 times per 10,000 words. There is a significant difference between the frequency usage of *may* and *might* in the NNS and NS data.

When we consider the epistemic modality used by the NNS writers with different proficiency levels, further differences become apparent. Table 3 summarizes the frequency count of the targeted epistemic modality per 10,000 words for each proficiency level—St2, St3, St4, St5, St6 and NS (native). Most noticeably, the results indicate an increasing use of *may* in the NNS corpus with increasing proficiency levels except at the St4 level. A similar though more consistent growth of the use of epistemic modality with increasing proficiency can be shown in NNS writers' use of *might* across different proficiency levels. As Figure 1 reveals, the frequency count of *may*

and *might* grows consistently throughout the increasing proficiency levels, from St2 to NS.

Table 2: Frequency Count of Epistemic Devices per 10,000 Words in NNS and NS Corpora (** $p < 0.05$)

Epistemic Modal Verbs	NNS	NS
may	10.56	23.3**
might	1.3	7**
Epistemic Adjectives		
possible	2.02	6.1**
likely	0.43	4.4**
unlikely	0.03	0.8**
certain	1.65	3.7**
sure	1.92	0.5**
Epistemic Adverbs		
possibly	0.24	0.8**
probably	0.61	2.2**
Total	18.76	48.8

Table 3: Frequency Count of Epistemic Modality (and per 10,000 words) across Proficiency Levels

Modal auxiliary	St2		St3		St4		St5		St6		NS	
	may	156a	6.5b	212	8.6	431	17.1	207	9	281	11.6	2649
might	9	0.4	13	0.5	39	1.5	33	1.4	66	2.7	800	7
Adjectives	St2		St3		St4		St5		St6		NS	
possible	20	0.83	44	1.87	63	2.5	45	1.9	72	3	693	6.1
likely	0	0	6	0.24	12	0.48	6	0.25	28	1.2	508	4.4
unlikely	0	0	0	0	0	0	1	0.04	3	0.12	89	0.8
certain	5	0.21	34	1.4	46	1.82	41	1.7	75	3.1	423	3.7
sure	48	2	39	1.6	43	1.71	66	2.8	36	1.5	54	0.5
Adverbs	St2		St3		St4		St5		St6		NS	
possibly	1	0.04	3	0.12	8	0.32	9	0.37	9	0.37	94	0.8
probably	4	0.17	13	0.54	14	0.55	16	0.68	27	1.1	255	2.2

a: Total frequency count of epistemic modality

b: The frequency count of epistemic modality per 10,000 words

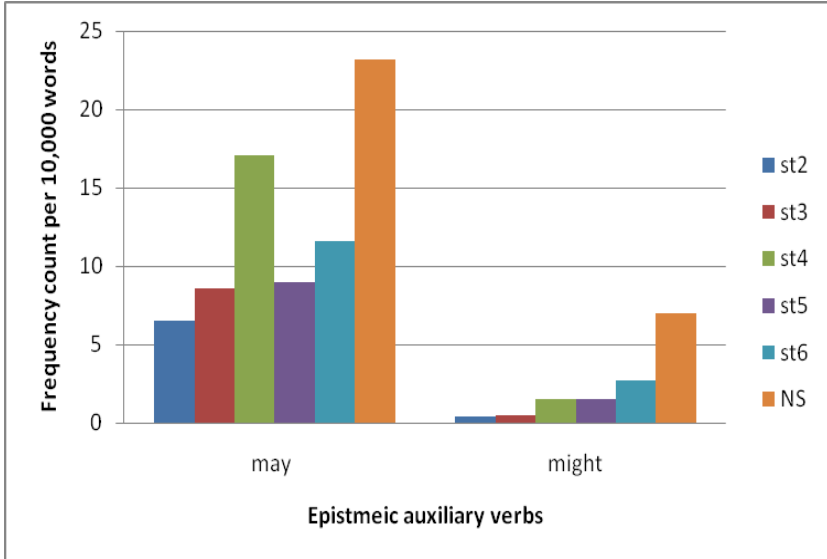


Figure 2: The Frequency Count (per 10,000 words) of Epistemic Modal Verbs ‘may’ and ‘might’ in the NNS and NS Corpora

The results also demonstrate that the NS writers use the four epistemic adjectives *possible*, *likely*, *unlikely*, and *certain* more frequently than the NNS writers. The NS writers, however, use the epistemic adjective *sure* less frequently than the NNS groups (see Table 2 for detail). Moreover, the two epistemic adverbs *possibly* and *probably* occur more frequently in the NS list compared with the NNS list. These differences between the two groups are statistically significant.

Close examination of the NNS corpus data divided by learners’ proficiency levels indicates that not only the epistemic modal verbs but also the epistemic adjectives and adverbs are used differently by the Chinese L2 writers, depending on their proficiency levels. Interestingly, the NNS writers at different learning stages tend to follow a systematic pattern of linguistic behaviors in terms of the use of epistemic modality in writing (see Figure 3 and Figure 4).

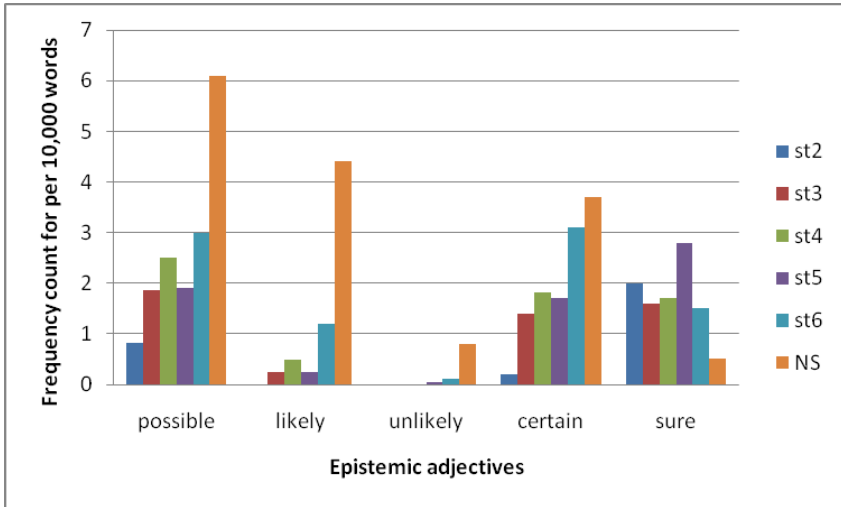


Figure 3: The Frequency Count (per 10,000 words) of Epistemic Adjectives ‘possible’, ‘likely’, ‘unlikely’, ‘certain’ and ‘sure’ in the NNS and NS Corpora

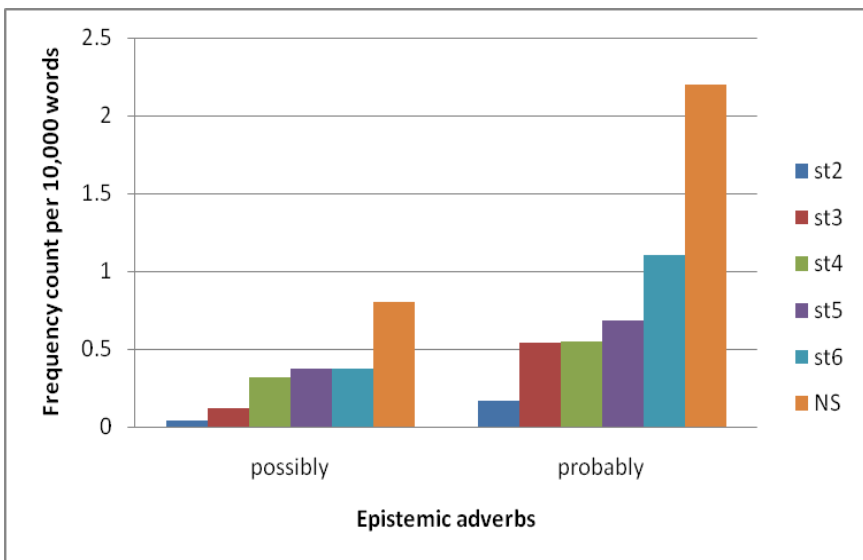


Figure 4: The Frequency Count (per 10,000 words) of Epistemic Adverbs ‘possibly’ and ‘probably’ in the NNS and NS Corpora

Taking the word *possible* (see Figure 3) as an example, the NNS learners at a higher proficiency level (e.g. St6) produced *possible*, an adjective that contains the semantic and pragmatic meaning of hedging, significantly more

than those who are at a lower level (e.g. St2). The NNS writers at a higher level also performed closer to the NS group. In the case of *possible*, the Chinese learners at St2 use this word in their writing at a frequency of 0.04 per 10,000 words, while the Chinese learners at St6 employ it 0.37 times per 10,000 words, which seems closer to the frequency of 0.8 per 10,000 words in the NS data. Similar patterns of the growing use of epistemic devices with increasing proficiency can be observed in the use of *may*, *might*, *possible*, *likely*, *unlikely*, *certain*, *possibly*, and *probably*.

The epistemic adjective *sure*, however, did not seem compatible with the above pattern. The word *sure* was used decreasingly with increasing levels from St2 to NS, showing a consistent pattern of how the L2 learners at different stages of learning use the word *sure* differently from the NS writers. The overall frequency of *sure* also differs between the NS and NNS groups in general. One possible explanation of this declining use of words with strong commitment (e.g. *sure*) is that the NS writers often hesitate to make a full commitment to propositions or to readers in writing, whereas the NNS writers, particularly Chinese learners of English, tend to overuse assertions in making arguments in writing to persuade and convince readers. This finding is in accordance with the results found in Milton and Hyland's (1999) study that the Chinese learner writers use firmer assertions and more authoritative tones in argumentative writing compared with native English writers. Further explanations are discussed in the next section.

Despite a discrepancy between different types of epistemic modality, the patterns of increasing or decreasing use of epistemic devices both suggest that the NNS writers develop their knowledge of how to use epistemic modality appropriately and become more native-like through the different stages of language acquisition. This acquisitional pattern thus supports the claim that L2 pragmatic competence is developmental in nature and that the NNS learners are inclined to follow certain acquisition sequences when developing and performing their L2 pragmatic competence (Bardovi-Harlig and Dörnyei, 1998).

To sum up, in answering the first research question, the findings indicate that the L2 writers, particularly Chinese learners, employ significantly fewer "downtoners" (i.e., *might*, *would*, *possible*) but more "boosters" (i.e., *sure*, *can*, *should*) when compared with the native speakers in academic writing. A closer examination on the L2 writers with different proficiency levels further suggests that with increasing proficiency, the NNS writers perform more like the NS writers in terms of their linguistic behaviors in applying epistemic devices such as *may*, *might*, and other epistemic devices, in writing. In other words, there is a developmental continuum of L2 pragmatic competence and performance in which novice L2 writers grow into intermediate writers and advanced writers and, eventually, more native-like L2 users. This observation helps address the second research question, providing positive evidence for learners' growing pragmatic awareness throughout proficiency levels. A more thorough qualitative analysis and analyses of single individuals are needed for

a better understanding of the acquisition sequences of pragmatic competence in L2 writing.

DISCUSSION

In this present study, the comparison of NS and NNS corpora demonstrates differences in the total frequencies of the epistemic devices they employ. It is interesting to speculate on the reasons for the differences between the NS and NNS writers. Two themes—intercultural pragmatic competence and acquisitional pragmatics—thus emerge, which become the main foci in the discussion.

Intercultural Pragmatic Competence

It is clear that the use of epistemic modality to explicitly signal the writer's attitude to propositions and to readers is important in writing in general (Hyland, 1998). Although differences in text type or discourse mode have been found to influence the frequency and use of epistemic modality used (Carretero, 2002), the findings here demonstrate the universality of epistemic modality in argumentative writing. Epistemic devices are used by both L1 writers and L2 writers as a rhetorical strategy to express their attitudes toward the propositional content and to take a stance on the given issue. This rhetorical strategy is important in that epistemic modality not only reveals the writers' "assumptions and assessment of possibilities", but it also indicates the writers' "confidence or lack of confidence in the truth of the proposition expressed" (Coates, 1995, p. 55). Through the use of epistemic modality, the writers are able to position themselves and project their perspective to the readers. As a result, epistemic devices are carefully selected and placed in combination with the writers' arguments with an aim to fulfill the rhetorical purpose and address to the intended audience.

Despite the universality of epistemic modality observed in the two corpora, noticeable differences between the NNS and NS groups can be identified in each category of epistemic modality. These discrepancies in its frequency indicate that the NNS and the NS writers position themselves differently in relation with the readers and the community, resulting in different degrees of assertion inserted in presenting their claims. The results that the NS writers use more hedges (i.e., *may*, *might*, *possible*, *probably*) indicates that in English written discourse, these 'downtoners' are viewed as conventionalized features and are often used as an interpersonal strategy by English writers to mitigate potential face-threatening acts. Indirectness in writing increases the degree of optionality and negotiability on the hearer and therefore reduces the imposition on the hearer, here the reader (Thomas, 1995). Hedges, often perceived as more polite and more deferential, thus enable writers to preserve positive face. The writers' 'face-saving' actions such as frequent use of epistemic modality and hedges, therefore, signal the central

pragmatic aspect of writing, viewing writing as a social and communicative engagement between writer and reader, which also highlights the social and pragmatic value in English written discourse.

Although the Chinese learners of English also demonstrate this linguistic knowledge by incorporating some of the epistemic devices into their writing, they tend to use fewer hedges than the native speakers. Instead, they employ epistemic devices (i.e. *sure*) with high commitment more than do the NS writers. Not only do these two groups differ in quantity, but they also differ from each other in terms of qualitative use, which might be an important feature worth exploring in future research.

It is interesting to speculate on the reasons for the linguistic differences between the NS and NNS writers. It is possible, for example, that preferred uses of epistemic modality or particular rhetorical strategies might reflect the fundamental linguistic differences between the learners' L1 (Chinese) and the L2 (English). These linguistic preferences and variations may further reflect its unique cultural orientations in one particular language. The interdependency between language and culture therefore poses great challenges to L2 learners in mastering a second language, which requires not only the linguistic competence of that language but also the cultural knowledge of the specialized context where the language is situated. That is so called 'pragmatic competence', or more precisely, 'intercultural pragmatic competence'. As specific L2 culture-bound knowledge has been discussed as "a deciding factor that underlies different aspects of pragmatic ability" this view on language acquisition places culture at the heart of L2 pragmatic competence (Jung, 2002, p. 7).

Many people in Chinese culture view certainty as a sign of strength and hedging as a sign of weakness, perhaps because certainty signals one's assertiveness and self-confidence when presenting propositions. This cultural ideology is not only reflected in the Chinese learners' L1 writing, but it is also transferred to their L2 writing and realized through the use of various rhetorical devices, such as epistemic modality. My recent work on metadiscourse in Chinese and English academic discourse suggests that fewer hedges and more emphatics are employed as interpersonal metadiscourse markers in the Chinese published research articles compared with the English published research articles. These findings support the Chinese belief that emphatics are favored in use in presenting argumentation, particularly in academic discourse, which is described as "an agonistic environment where a common framework for academic papers prescribes that authors position their work in opposition to someone else's, which they then prove wrong" (Tannen, 2002, p. 1658). This L1 pragmatic knowledge and experience thus can be transferred to one's second language learning, resulting in pragmatic transfer.

The results of the present study provide positive evidence that L2 learners' L1 pragmatic knowledge significantly influences their comprehension and production of pragmatic performance in the L2 (Kasper, 1992). The study shows that epistemic modality markers with higher degrees

of directness are preferred and frequently used by the Chinese learners in English writing in order to demonstrate their confidence in persuasions and build credibility to their readers. Such a strong directive, however, might be considered rude in English written discourse where possibility rather than certain and prudence rather than overconfidence is appreciated (Hyland, 2006). This is a teaching moment that should be addressed explicitly to L2 learners, especially those who are new to the target discourse community. This study also attests that not only learners' L1-bounded cultural knowledge but also the ability to choose the appropriate linguistic directness with reference to the L2 norm built upon L2-specific knowledge are crucial for L2 pragmatic competence, and particularly, intercultural pragmatic competence (Jung, 2002). As a result, it becomes essential for writing teachers to direct L2 writers' attention to the embedded social norms and cultural assumptions of particular linguistic features. This finding also suggests an explicit instruction on teaching pragmatics in L2. Only when L2 learners develop this awareness of the interconnectedness between form, use, and meaning of a second language can they enlarge the intercultural pragmatic competence and successfully socialize themselves into the new discourse community.

Acquisitional Pragmatics

Another important finding attests the claim that L2 pragmatic competence is developmental in nature. In the present study, the patterns of increasing and decreasing epistemic modality use in L2 writing indicate that the NNS writers steadily accumulate their pragmatic knowledge of how to use epistemic modality appropriately in the target language and become more native-like with the increasing language proficiency. This sequential pattern also stresses the acquirability of L2 pragmatic knowledge throughout different stages of learning. More importantly, this study also shows positive evidence that the NNS learners would follow certain acquisitional sequences when developing L2 sociocultural awareness as well as performing L2 pragmatic competence in acquiring a new language. This observation supports some of the previous studies. For example, Bardovi-Harlig and Dörnyei (1998) studied EFL students in Hungary and Italy and ESL students in the US in their pragmatic acquisition. The learners were presented with a series of 20 scenarios exhibiting four speech acts: requests, suggestions, apologies, and refusals. They were further asked to identify the appropriateness of the last utterance of each scenario. Their findings showed that L2 learners with higher proficiency scored significantly higher in both their pragmatics and grammar ratings than those with lower proficiency and the pragmatic scores increased with increasing grammatical knowledge and proficiency. The grammatical perception and production tasks in Bardovi-Harlig and Dörnyei's (1998) study also indicated that learners acquired modal verbs (e.g., could) with the present and past reflections first before they had acquired the pragmatic function of the modal verb as an epistemic marker. A similar notion can be found in

Bardovi-Harlig and Hartford's (1993) study in which they suggest that pragmatic extension of tense-mood-aspect forms to politeness markers is not acquired until basic deictic (temporal) meanings have been acquired in L2 language learning.

In line with the previous studies mentioned above, the research also demonstrates the acquisitional processes of L2 pragmatics in L2 writing. The epistemic modality most commonly used by L2 writers in the corpus data is the modal verb *may* and followed by *possible*, *sure*, *certain*, *might*, *probably*, *likely* and *unlikely*, suggesting a potential sequence of learning. The nine selected epistemic devices are produced by the beginning L2 learners, except the adjective *likely* and *unlikely*. Interestingly, the epistemic adjective *likely* was absent in the learner subcorpora, St2 (High School level) and St3 (College English Level 4, non-English major), and it did not appear in L2 learners' written production until the St4 level (College English Level 6, non-English major). Similarly, the epistemic adjective *unlikely* did not appear in L2 writers' production until the St5 level (College English-major low), while other epistemic devices such as *probably* and *possibly* were used by the L2 learners from the St2 level, although its frequency and use differs from the L2 learners at higher levels or the NS writers. These findings suggest that some of the politeness markers are not acquired until certain language proficiency is achieved. One of the possible explanations could be that some of the epistemic modality or pragmatic markers are inherently more difficult for L2 learners to acquire due to their complex semantic attributes or multifunctionality (Palmer, 2001). Therefore, the awareness of L2 learners' acquisitional processes cannot be overlooked and should be explicitly stressed by language teachers in real language classrooms. The knowledge and identification of L2 learners' acquisitional pragmatic patterns not only provides language teachers valuable insights on learners' development of L2 pragmatic competence, but it also allows teachers to provide timely and appropriate feedback to learners who may need assistance.

The two major findings of the study—intercultural pragmatic competence and acquisitional pragmatics—thus point to a need for cultural-sensitive curricula and explicit pragmatic instructions in writing classrooms, with an aim to emphasize the importance of developmental process of intercultural pragmatic competence. The pedagogical implication is that as pragmatic competence is developed in noticeable acquisitional orders, epistemic modality with high frequency and less complex semantic meaning could be first introduced to L2 learners, particularly those at beginning levels, in classroom settings or in language materials. Through explicit explanations on the social meanings beyond the epistemic forms, language teachers can direct learners' attention to not only the linguistic forms but also the underlying sociocultural norms in establishing appropriate tone and voice in the new discourse. With this awareness of the interdependency between language and culture, the learners are able to further apply this knowledge to a more complex context and rhetorical situation in order to achieve their purpose of

writing and to successfully address their intended audience.

CONCLUSION

With a contrastive learner corpus analysis, the comparison of the NNS and NS writers reveals that the latter group uses the particular epistemic devices of modal verbs (may, might), adjectives (possible, likely, unlikely, certain), and adverbs (possibly, probably) more frequently than the former group. In the case of the epistemic adjective *sure* use in the NNS groups decreased with increasing levels from St2 to NS, which also shows a consistent pattern of how learners at different stages of learning use the word *sure* differently as compared to the NS writers. More importantly, the examination of the NNS writers from five different proficiency levels indicates that the NNS writers increase their awareness of using epistemic modality in writing and perform more native-like with increasing proficiency, resulting in L2 pragmatic achievement in L2 writing. The quantitative findings also confirm that there is a developmental acquisition stage in developing L2 learners' L2 pragmatic competence. In other words, L2 learners have a tendency to follow certain patterns of learning behaviors throughout different stages of acquisition in building their interlanguage pragmatic competence. A detailed qualitative analysis, however, is needed for further examination of how the epistemic devices are used and developed by L2 writers in context throughout different proficiency levels. The issue of whether there are certain acquisition sequences or orders in terms of developing pragmatic competence in writing in second or foreign language learning is worth exploring in ILP and SLA studies. The major purpose of such a literature review would be to shed light on the developmental processes underlying the acquisition of L2 pragmatic competence.

This preliminary study contributes to ILP and SLA studies in two major ways. First, using a NS corpus as a baseline for comparison with a NNS corpus provides both writing practitioners and researchers a better understanding of how NNS writers perform and use language differently compared with NS writers. As Hunston (2002) claims, contrastive interlanguage analysis allows us to understand what learners do and "what native/expert speakers actually do rather than what reference books say they do" (p. 212). With large-scale comparative analyses of the interlanguage development of different learner populations and native speaker groups, distinguishing features between NNS and NS can be uncovered and identified (Altenberg & Granger, 2001). The identification of the differences of epistemic modality use in the two groups contributes to pedagogical materials and curriculum design. As Hyland (1994) addressed the inappropriate design of current textbooks in EAP/ESP classrooms, the finding that NNS writers significantly underused some of the epistemic devices in writing needs to be considered and could be specifically stressed in academic writing classrooms.

The findings of the study also shed some light on future materials development and suggest more explicit instructions on L2 pragmatic knowledge and competence in academic writing classrooms. This study also points to the emergence of the notion of intercultural competence and proposes a new cultural-language view of L2 pragmatic development, stressing the importance of L2 learners' L1 and L2 cultural-bounded knowledge in acquiring L2 pragmatic competence.

Second, the investigation of the NNS writers' developing performance in L2 pragmatic competence at different proficiency/education stages in this study contributes to ILP studies in several ways. Through systematic quantitative analyses, the frequency and use of epistemic devices were examined to identify L2 learners' developmental pragmatic competence across different levels in academic discourse. This study allows us to closely analyze how epistemic devices were used by Chinese learners of English at different levels and to examine the developmental process of L2 writers' pragmatic competence in academic discourse. Although this study examines limited scope of epistemic modality, this research has provided both ESL and EFL teachers and researchers with valuable insights on how epistemic devices can be used effectively as indices of learners' pragmatic competence and how this knowledge of L2 learners' acquisitional processes of L2 pragmatic competence could shed lights on IL writing research as well as help in the revision and teaching of epistemic modality as pragmatic competence in language learning course textbooks and syllabi.

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