

The Effect of English Proficiency on Korean Undergraduates' Expression of Epistemic Modality in English Argumentative Writing

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The present study investigated the effect of English proficiency on the expression of epistemic modality in English argumentative writing produced by Korean undergraduates. It compared three levels of learner corpora with each other and with a corpus of native speaker writing. The findings point to three aspects of L2 writing development with regard to epistemic modality. First, higher level writers utilized a broader range of types of epistemic devices than did the lower level writers. Second, concomitant with higher proficiency was a more even distribution of grammatical classes of epistemic items through greater reliance on modal verbs, nouns and adjectives and less dependence on lexical verbs and adverbs. The higher proficiency writer also exhibited a greater ability to use combinations of epistemic devices from different grammatical classes in diverse syntactic contexts. Third, relatively more skilled writers employed fewer epistemic devices from the semantic category of certainty and more from probability than less skilled ones. From a developmental viewpoint, these concurrent modifications in the use of epistemic devices indicate in the learners' progressive approximation to native-speaker-like expression of epistemic modality.

Keywords: epistemic modality, English proficiency, second language writing, argumentative writing, corpus

INTRODUCTION

In the past few decades there has been growing interest in interpersonal and evaluative features that can be found in written and spoken discourse. A number of studies have explored them under several different labels such as *stance* (Biber, 2006; Biber & Finegan, 1989; Hyland, 1999), *attitude* (Halliday, 1994), *voice* (Thompson, 1996), *evaluation* (Hunston & Thompson, 2000), *appraisal* (Martin, 2000), *evidentiality* (Chafe, 1986) and *metadiscourse* (Crismore, 1989; Hyland & Tse, 2004). These studies seem to share the common idea that writers/speakers usually take into consideration their actual, potential, or imagined readers/listeners when they attempt to embody their assertions in writing or speech. In so doing, they establish their authorial stance and convey it to the audience in various ways. One of the most prevalent ways to effectively interact with audience is to take advantage of a set of words and phrases that “boost” or “hedge” the certainty writers/speakers have in their propositions. These particular lexical items can be discussed under the concept of epistemic modality. By definition, epistemic modality is concerned with the expression of the writer’s (or speaker’s) degree of certainty, or commitment to the truth of a proposition (Coates, 1983). Devices expressing epistemic modality abound in contexts where the writers/speakers express an opinion, argue for or against social phenomena, and discuss contentious topics (Hermerén, 1978; Holmes, 1982). In such writing genres as argumentative or persuasive essays writers typically position themselves on a particular side and unfold their thoughts on “a continuum of commitment ranging from uncertain possibility to confident assurance” (Milton & Hyland, 1999, p.147). Consequently, using epistemic expressions appropriately is considered to be a very important pragmatic skill that writers need to be equipped with to produce successful and persuasive texts.

It has been demonstrated in a series of studies that non-native speakers (NNS) of English find it difficult to employ epistemic devices to express appropriate degrees of certainty or doubt in English (Allison, 1995; Gabrielatos & McEnery, 2005; Hinkel, 1999; Hu et al., 1982; Hyland & Milton, 1997; McEnery & Kifle, 2002; Milton & Hyland, 1999; Oh, 2007). This aspect of meaning presents fundamental problems for NNS learners, Holmes (1982) argues, due to at least three reasons; the difficulty of determining the precise degree of commitment signaled by particular linguistic devices, the wide variety of epistemic devices in English, and the possibility for such devices to concurrently express various types of meaning depending on the context (e.g., *appear*, *clear*). For these as well as other reasons, the empirical studies listed above have found that the epistemic expressions used by NNS tend to be limited in type and polarized semantically into two extremes (i.e., either much stronger or weaker assertions compared with native speakers'). What is currently lacking, however, is detailed information on whether and how nonnative learners' use of epistemic modality is affected by their English proficiency level. The observation that higher-level Hong Kong students performed more similarly to native English writers than did the lower-level students in their use of epistemic modality (Hyland & Milton, 1997) suggests that proficiency may interact with this particular pragmatic competence.

As identified by Cumming (2001), "three fundamental dimensions of second-language writing" include features of the L2 texts, composing processes, and the sociocultural contexts of writing (p. 2). The current study attempts to deal with the first of these three issues with respect to the expression of epistemic modality. In particular, by comparing the texts produced by writers from different English proficiency levels, the study intends to contribute to revealing the influence that proficiency exerts on writing, about which more needs to be uncovered (Hyland, 2002). For this purpose, the essays written by the nonnative students are categorized into three English proficiency levels, with the focus being placed upon the differences across the levels (as well as from the NS essays) in the density

and range of epistemic devices used, their grammatical distributions, and the extent of certainty or tentativeness. By identifying one of the characteristics (i.e., the use of epistemic modality) of NNS students' written texts that distinguish differing proficiency levels, the current study may provide some useful "indicators of achievement in second language writing" (Cumming & Riazi, 2000, p. 60). Hyland (2002) suggests that a sound understanding of L2 writing and of the divergence between L2 and comparable L1 writers is necessary for teachers to assist students effectively (p. 178). The results of this study can thus be used to enhance L2 writing instructional practices by revealing remedial work necessary at each proficiency level.

LITERATURE REVIEW

Epistemic Modality

Epistemic modality relates to "the speaker's [writer's] assumptions or assessment of possibilities" and "indicates confidence (or lack of confidence) in the truth of the proposition expressed" (Coates, 1983, p.18). The sentence "Mary must be at home by now," for instance, conveys the speaker's/writer's confidence in the proposition that Mary is currently at home while the substitution of the modal verb *must* with *may* results in considerably weakened confidence. Such modal verbs have been considered as the prototypical morphological realization of epistemic modality (Gabrielatos & McEnery, 2005), receiving exclusive focus in some traditional epistemic literature (Coates, 1983; Hermerén, 1978; Palmer, 1979). Various grammatical classes other than modal verbs, however, are commonly employed to convey epistemic meanings. Several studies have thus included in their full catalog of English epistemic devices lexical verbs, adverbs, nouns and adjectives along with modal verbs (Holmes, 1982, 1983, 1988; Hyland & Milton, 1997; McEnery & Kifle, 2002; Oh, 2007). In particular, Holmes (1988) provides the following grammatical patterns (excluding modal verbs)

which may be used to convey epistemic modality, where *p* is a proposition (pp. 43-4):

1. Lexical Verb

- (a) I _____ that *p* (e.g., *think, believe, guess, reckon, suppose, suspect*)
- (b) It _____ to me that *p* (e.g., *seems, appears*)
- (c) It _____ that *p* (e.g., *seems, appears*)
- (d) NP _____ that *p* [NP is +animate, +3rd person] (e.g., *argues, claims, contends, maintains*)
- (e) It is _____ ed that *p* (examples from both (a) and (d))

2. Adverbial¹

_____ *p* (e.g., *certainly, obviously, clearly, evidently, apparently, probably, possibly, perhaps, maybe*)

3. Noun

- (a) There is a _____ that *p* (e.g., *probability, likelihood, possibility, chance*)
- (b) It is my _____ that *p* (e.g., *opinion, view, assessment, guess*)
- (c) In my _____ *p* (e.g., *opinion, view, assessment*)

4. Adjective

- (a) That *p* is _____ (e.g., *certain, sure, clear, evident, apparent, likely, probable, possible*)
- (b) It is _____ that *p* (e.g., *certain, clear, evident, apparent, likely, probable, possible*)
- (c) NP is _____ to VP [NP is subject of *p*; VP is predicate of *p*] (e.g., *certain, sure, likely, unlikely*)
- (d) It is _____ to me that *p* (e.g., *clear, evident, apparent*)
- (e) I am _____ that *p* (e.g., *certain, sure, clear, convinced*)
- (f) NP is _____ that *p* [NP is +animate, +3rd person] (e.g., *certain, sure, clear, convinced*)

¹ As Holmes (1988) notes, adverbials are quite free in their position of occurrence, sometimes following *p* or occurring within it.

Additionally, epistemic modality is often expressed in the form of multi-word units (e.g., *it could also be argued that...*, *it would be difficult to...*, *despite the fact that...*) or epistemic clusters (e.g., *it might be possible to ...*) (Aijmer, 2002; Hyland & Milton, 1997; Milton & Hyland, 1999). Such diversity in means used for epistemic function may partly explain the challenge that this aspect of meaning presents for second/foreign language learners.

The various epistemic devices can also be categorized in terms of the strength of epistemic commitment that they signal (that is, the degree of the speaker/writer's certainty or doubt). Researchers have established separate semantic categories, for example the following three (Holmes, 1982, 1983, 1988; McEnery & Kifle, 2002), into which different epistemic items are classified:

1. Certainty: the speaker asserts with certainty that the proposition is true.
 - (a) Certainly we need to learn from the past.
 - (b) Michael will succeed in all his endeavors.
 - (c) The author argues that the world is coming to an end in 2020.
2. Probability: the speaker asserts that the proposition is probably true.
 - (a) It appears that the house is broken.
 - (b) We guessed that it would cost about \$100,000.
 - (c) The probability is that prices will rise rapidly.
3. Possibility: the speaker asserts that the proposition is possibly true.
 - (a) They might reveal the secret.
 - (b) There's a slight chance that he'll pass the exam.
 - (c) He can possibly finish the work by the deadline.

To the categories of certainty, probability, and possibility, Hyland and Milton (1997) have added two, "approximation" (e.g., *about*, *approximately*, *almost*) and "usuality" (e.g., *always*, *often*, *usually*) on the grounds that devices belonging to the former can adjust the epistemic strength of statements (Dubois, 1987) while expressions under the latter category, which

influence definiteness, also play a role in signaling epistemic assessments (Halliday, 1994). While the actual classification of the epistemic devices into these (or some similar) categories runs the risk of subjectivity and arbitrariness, it has still turned out to be useful for identifying, analyzing and/or comparing the epistemic representation of writers/speakers (Halliday, 1994; Holmes, 1982, 1983, 1988; McEnery & Kifle, 2002; Oh, 2007).

Previous Studies of Epistemic Modality in L2 Writing

An array of studies have steadily reported that second/foreign language learners are liable to lack the ability to express in their L2 writing the appropriate degree of assurance or uncertainty from the native speakers' point of view (Allison, 1995; Flowerdew, 2000; Gabrielatos & McEnery, 2005; Hu et al., 1982; Hyland & Milton, 1997; Kim, 2011; McEnery & Kifle, 2002; Milton & Hyland, 1999; Oh, 2007; Silva, 1993; Skelton, 1988). It was observed, for example, that Chinese and Hong Kong writers tend to make more direct and explicit arguments compared with native English writers by using strong modals (e.g., *will, should, must*) and adverbs (e.g., *totally, always, or never*) (Allison, 1995; Hu et al., 1982; Hyland & Milton, 1997). It was also found that Hong Kong writers rely on a limited range of epistemic words and fixed phrases and that some of the epistemic expressions they used are not appropriate for the given (i.e., academic) genre (Hyland & Milton, 1997; Milton & Hyland, 1999). These characteristics have been found to be shared by Korean learners of English as well (Kim, 2011; Oh, 2007). One group that apparently exhibited the opposite tendency is Eritrean learners, who made more tentative claims than did the native English writers presumably under the influence of the teaching materials (McEnery & Kifle, 2002). The reasons for the dissimilar characteristics between the learners and native speakers regarding their use of epistemic modality have been traced to various factors such as the effect of instruction or textbooks (Holmes, 1988; McEnery & Kifle, 2002), learners' transfer of spoken features to writing (Gilquin & Paquot, 2007, 2008; Kim, 2011; Oh, 2007), the effect of essay

topics (Hinkel, 2009), the L2 writer's socio-pragmatic violations (Hyland & Milton, 1997) and the different sense of audience across cultures (Oh, 2007).

While the studies mentioned above offer useful insights into the NNS learners' distinctive uses of epistemic modality in comparison with NS and their potential causes, they have paid little attention to the differences in learner behavior across proficiency levels. One notable exception to this general trend has been the study by Hyland and Milton (1997), which showed that higher-level students tend to be more skilled in controlling the degree of assurance or uncertainty in their writing. The major focus of this study, however, was still on the comparison between the NS and the NNS, and it did not identify in detail characteristics of epistemic modality that correspond to levels of proficiency in L2 writing. The current study attempts to throw new light on the relationship between nonnative learners' English proficiency and their use of epistemic modality by diversifying the writing proficiency levels and making comparisons among them. It will be shown that proficiency levels indeed make impressive, and sometimes unexpected differences in the realization of epistemic modality.

RESEARCH QUESTIONS

The current study seeks to find answers to the following questions:

- (1) Is there any difference in the density and range of epistemic devices used in writing between learners of different proficiency levels?
- (2) Is there any difference in the grammatical distributions of epistemic devices between learners of different proficiency levels?
- (3) Is there any difference in the semantic distributions of epistemic devices between learners of different proficiency levels?

METHODS

Data

Two sets of corpora – a native speaker corpus and a learner corpus – were used as data in the current study. The Louvain Corpus of Native English Essays (LOCNESS) served as the native speaker corpus. The LOCNESS was compiled as a reference corpus to be used with the International Corpus of Learner English (ICLE), which is one of the earliest and the most famous learner corpora that was compiled in 1990s under the initiative of Sylviane Granger. The ICLE is composed of 500-word argumentative essays written by advanced learners of English from several mother tongue backgrounds, of which Korean is currently not one. The LOCNESS contains mostly argumentative (with some literary and expository) essays written by native English-speaking students. The present study made use only of the university students' essays for a valid comparison with the learner corpus described below. The topics covered in the essays are various and typically controversial, including euthanasia, capital punishment, surrogate motherhood, abortion, gun control, animal testing, to name a few.

Similar to the ICLE and the LOCNESS, the learner corpus was built by collecting English essays written by college students from several universities in Korea. The essays are all argumentative and deal with a variety of contentious topics in the area of education, technology, politics, economy, and so on. The diversity of topics was deemed necessary in order to make the learner corpus comparable to the native speaker corpus. A total of 877 essays thus collected were graded holistically by three raters including two native English speakers with an average of 12 years' experience teaching English as a second/foreign language at the college level. The evaluation of the essays was guided by a rubric of a 6-point scale, which was developed based upon the independent writing rubrics for the TOEFL iBT test. The scales include descriptors related to the range and appropriateness of vocabulary, the variety and complexity of syntactic structures, overall organization and topic

development. The essays were given a score ranging from 1 to 6 (with 1 the highest and 6, the lowest) based on the extent to which the essay exhibits the qualities identified on the scoring guide. Once the grading was completed, the value of Pearson Correlation was calculated to examine the inter-rater reliability. Finally, a total of 709 essays showing reasonable inter-rater reliability were selected to be included in the learner corpus ($r = .792, p < .001$). The essays with grading 1 or 2 were categorized into Advanced Level (AL), 3 or 4 into Intermediate Level (IL), and 5 or 6, Beginner Level (BL), thereby constituting three sub-corpora. The numbers of essays and words contained in the three learner corpora and the NS corpus are displayed in Table 1.

TABLE 1
The Four Corpora Being Compared in This Study

	BL	IL	AL	NS
Number of essays	122	492	95	322
Number of words	27,944	169,441	49,400	263,973

Procedures of Analysis

The present study essentially adopted the list of “100 items from the most frequent epistemic devices in academic writing” in McEnery and Kifle (2002, pp.194-95), which had been compiled from Holmes (1988) and Hyland and Milton (1997) and validated by the literature on modality (Coates, 1983; Leech & Svartvik, 1983; Quirk et al., 1985). This list was complemented by adding 10 additional items from Holmes (1988), which were not included in the list of McEnery and Kifle but the frequency of which was not minimal in the current database. Holmes (1988) identified over 350 lexical items available for expressing epistemic modality in English by analyzing her 50,000 word corpus and supplementing it with the research literature. Even though doubt or certainty can be conveyed through non-verbal (e.g., facial expression, head-shake) and prosodic devices as well (Holmes, 1982, 1983), only lexical ones are dealt with in the present study since they are the major means of conveying

epistemic modality in writing. The finalized list comprises a total of 110 epistemic devices across five grammatical classes: that is, 8 modal verbs (*will, would, may, might, must, should, could, can*'), 24 lexical verbs (e.g., *think, believe, suggest, assume, doubt*), 47 adverbs (e.g., *clearly, definitely, probably, maybe, never*), 19 nouns (e.g., *certainty, fact, view, chance, possibility*), and 12 adjectives (e.g., *certain, obvious, probable, unlikely*). The modal verb *can*, although its status as epistemic device is controversial (see Perkins (1983) for a discussion of the issue), was excluded in the present study in order to ensure comparability with the previous studies. None of the studies by Coates (1983), Holmes (1988), Hyland and Milton (1997), McEnery and Kifle (2002), or Oh (2007) included *can* in their list of epistemic modal verbs.

A series of steps were then taken to analyze the data. First, all the occurrences of the epistemic devices on the list were retrieved from each of the four corpora with the help of a concordancing program (WordSmith Tools, version 5.0). Tokens that did not express epistemic meanings (e.g., root modal verbs and non-epistemic uses of such items as *appear, chance*, etc.) were detected through careful examination and removed. Second, the epistemic devices finalized through the previous step were all categorized in terms of five grammatical classes (i.e., modal verbs, lexical verbs, adverbs, nouns and adjectives) on the one hand, and five semantic categories on the other (i.e., certainty, probability, possibility, usuality, and approximation) (Hyland & Milton, 1997). While the former categorization was relatively straightforward, the second turned out to be not. The classification of semantic categories was principally based upon the information available from Hyland and Milton (1997) and McEnery and Kifle (2002), who similarly categorized the 75 and 100 epistemic devices that they respectively examined. Since neither study provides a full inventory of all the devices thus classified, only discussing the representative or most frequent items in each category, however, part of the classification had to be made by the current researchers themselves. This particular system of semantic categorization is probably not universally accepted, nor without its limitations, but it was adopted in the present study due to the unavailability of a better scheme as well as for a valid comparison with

the previous studies that have employed it. Third, the overall frequencies and ranges of the epistemic devices, and their grammatical and semantic distributions were examined in each corpus, and then compared across the four corpora to spot any changes affiliated with the increase or decrease of proficiency level.

RESULTS AND DISCUSSION

Density and Range of Epistemic Devices

The results of analysis have revealed some interesting changes concomitant with increased proficiency in Korean learners' expression of epistemic modality in English argumentative essays. In this section, the relative frequencies and the varieties of epistemic devices are compared across the four corpora to elucidate the differences according to proficiency levels. The raw and normalized (per 10,000 words) frequencies of the epistemic devices in the four corpora are presented in Table 2.

TABLE 2²
Overall Frequency of Epistemic Devices in the Four Corpora

	NNS			NS	χ^2 value
	BL	IL	AL		
Total number	715	3863	1204	7463	127.97***
Tokens per 10,000 words	256	228	244	283	
Top 10 items	479 (67%)	2267 (59%)	622 (52%)	3953 (53%)	11439.95***
Top 20 items	602 (84%)	2993 (77%)	842 (70%)	5161 (69%)	39.6***

*** $p < .001$

² The normalized frequencies have been rounded up.

The overall frequencies of the epistemic devices in the four corpora were significantly different ($\chi^2=127.97$, $df=3$, $p<.001$). As shown in the table, fewer devices were found in the learner corpora (256 devices in BL, 228 in IL, and 244 in AL) than in the NS corpus (283). What is also noticeable is the observation that the increase of the proficiency level is accompanied by the decrease in the relative percentages of the top 10 and 20 items. The top 20 items, for example, account for 84%, 77%, 70%, and 69% of the total number of epistemic devices in the BL, IL, AL, and NS, respectively. This indicates that the lower level writers tend to convey epistemic meanings with a more limited number of epistemic items whereas the higher level writers employ a broader range of epistemic devices. This pattern is verified when the occurrences of epistemic devices in the different frequency bands are compared across the four corpora (See Table 3).

TABLE 3
Variety of Epistemic Devices

Frequency of occurrence of device (per 100,000 words)	BL	IL	AL	NS
600-700	1	0	0	0
500-599	0	0	0	0
400-499	0	1	0	0
300-399	1	1	1	2
200-299	0	0	1	0
100-199	2	0	2	6
50-99	9	6	9	6
10-49	26	30	40	43
5-9	8	15	9	18
3-4	13	8	10	18
1-2	0	29	14	10
0	50	18	24	7

The table shows that compared with the NS corpus, the learner corpora have a greater number of epistemic devices which are either highly frequently used or never used at all. At the beginner level, for instance, one epistemic device, *think*, belongs to the 600-700 frequency band whereas as many as 50 items out

of 110 (i.e., 45%) never occur (e.g., *can't*, *assume*, *apparently*, *doubt*, *obvious*). If viewed from a developmental perspective, the occurrence rate of the most frequent item becomes lower with the rise in the proficiency (i.e., 600-700 in BL, 400-499 in IL, and 300-399 in AL and NS). The number of items that are never employed is also smaller in the IL and AL corpora (i.e., 18 and 24, respectively), while still greater than in the NS (i.e., 7). The observed uneven use of epistemic devices by the learners, especially at the lower level, echoes the findings of previous studies not only in the area of epistemic modality (Hyland & Milton, 1997; Kim, 2011; McEnery & Kifle, 2002; Oh, 2007) but of vocabulary in general (Altenberg & Tapper, 1998; De Cock et al., 1998; Kim, 2002; Lee, 2004, 2007; Ringbom, 1998a; Shin, 2007). This may be attributed in part to the learners' tendency to prefer expressions that they feel confident in over some others that they are not sure of (Milton, 1998). The wider variety in epistemic devices for higher level learners may thus be seen to a large extent as the result of vocabulary growth (that is, of improved lexical competence). In any case, the fact that the polarized pattern becomes more balanced as the proficiency level rises suggests that the development in the ability to communicate epistemic modality involves widening of the range of epistemic devices.

Next, the top 10 most frequent items are examined with special focus on the differences across the four corpora. See Table 4 for the results.

As can be seen in the table, some items appear on the top 10 list of all four corpora and others only of a certain corpus. In the former category, there are four such epistemic devices (i.e., *think*, *will*, *know* and *may*). A closer look at the relative frequencies of each item discloses that the frequency of *will* remains relatively constant across the corpora but that of *think* displays significantly big differences ($\chi^2=720.682$, $df=3$, $p<.001$). In fact, a consistent pattern is observed in the use of *think* in that its occurrences progressively drop as the writers' proficiency level increases (i.e., 619 in BL, 411 in IL, 213 in AL and 122 occurrences in NS). Given that the overuse of *think* is considered to be one of the hallmarks of NNS writing (Hyland & Milton, 1997; Oh, 2007; Ringbom, 1998b), the present study further adds information on the effect of

proficiency, that is, that heavy reliance on this verb at the beginner level becomes gradually weaker with the increase of proficiency.

TABLE 4
Ten Most Frequent Items Expressing Epistemic Modality in Rank Order

Rank	Epistemic device & frequency (per 100,000 words)							
	BL		IL		AL		NS	
1	<i>think</i>	619	<i>think</i>	411	<i>will</i>	306	<i>would</i>	368
2	<i>will</i>	336	<i>will</i>	316	<i>think</i>	213	<i>will</i>	305
3	<i>know</i>	150	<i>know</i>	171	<i>may</i>	152	<i>think</i>	122
4	<i>feel</i>	125	<i>may</i>	81	<i>would</i>	113	<i>feel</i>	121
5	<i>almost</i>	89	<i>feel</i>	79	<i>seem</i>	93	<i>believe</i>	119
6	<i>always</i>	86	<i>of course</i>	67	<i>know</i>	81	<i>idea</i>	103
7	<i>maybe</i>	86	<i>might</i>	58	<i>believe</i>	81	<i>may</i>	102
8	<i>sometimes</i>	82	<i>always</i>	53	<i>might</i>	77	<i>know</i>	100
9	<i>may</i>	75	<i>opinion</i>	53	<i>consider</i>	75	<i>seem</i>	88
10	<i>seem</i>	64	<i>sometimes</i>	50	<i>always</i>	69	<i>fact</i>	70

Regarding the devices unique to certain corpora, two items on the list are worthy of notice: *would* is identified only in the AL and NS corpus and *always* only in the learner corpora. The conspicuous aspect of the use of *would* is that its frequency in the NS is as much as three times higher than that in the AL (i.e., 368 in NS and 113 in AL) ($\chi^2=69.363$, $df=1$, $p<.001$), implying that even advanced learners still have a long way to go before they reach the NS standard in the employment of this modal verb. It is also noteworthy that there are two nouns and a few adverbs which are distinctive to the top 10 list of the NS corpus and the learner corpora, respectively. The NS writers make frequent use of such nouns as *idea* and *fact* to convey epistemic senses whereas the learners favor adverbs (e.g., *almost*, *always*, *maybe*, *of course*). The disparate tendency

between the two groups in the choice of the epistemic devices from different grammatical classes will be discussed in the next section in a greater detail.

Grammatical Distributions

TABLE 5
Distribution of Epistemic Devices across Grammatical Classes

Grammatical class	Raw frequency & percentage								χ^2 value
	BL		IL		AL		NS		
Modal verb	142	20%	929	24%	337	28%	2229	30%	65.183***
Lexical verb	312	43%	1513	39%	380	32%	2141	20%	167.177***
Adverb	213	30%	1038	27%	331	27%	1514	20%	93.91***
Noun	39	6%	300	8%	109	9%	1235	17%	232.7***
Adjective	9	1%	83	2%	47	4%	344	5%	65.183***
Total	715	100%	3863	100%	1204	100%	7463	100%	

*** $p < .001$

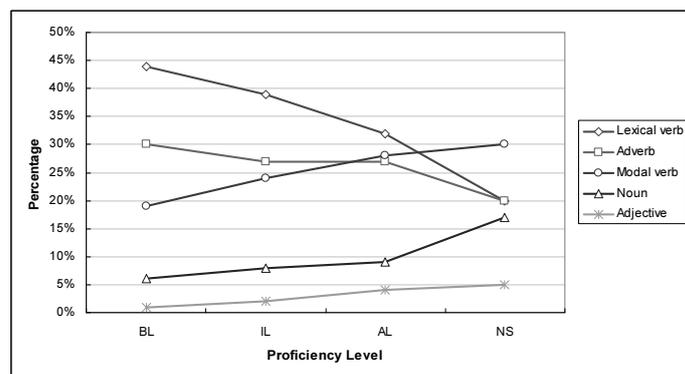


FIGURE 1
Grammatical Classes of Epistemic Devices across Proficiency Levels

This section is concerned with how epistemic devices are distributed across grammatical classes and what differences can be identified from the comparison between the corpora. A total of 110 epistemic devices were categorized into five grammatical classes (i.e., modal verbs, lexical verbs, adverbs, nouns and adjectives) and their frequencies in each corpus were calculated. The raw frequencies and the respective percentages are reported in Table 5 and graphically represented in Figure 1.

The most striking feature that can be noted in the figure is that the rise of proficiency results in more even distribution of the five grammatical classes. In other words, the gap between the most and the least frequent grammatical classes within a corpus gets narrower as the proficiency grows (i.e., 43%, 37%, 28%, 25% in BL, IL, AL, and NS, respectively). Specifically, all the grammatical classes follow either an increasing or a decreasing pattern in a consistent manner starting from the BL up to the NS. As the proficiency develops, the use of epistemic modal verbs, nouns and adjectives becomes more frequent and that of lexical verbs and adverbs less frequent. As a result, lexical verbs, adverbs and nouns converge on a similar percentage (i.e., around 20%) of occurrence in the NS corpus. This developmental trend demonstrates that the learner essays progressively become more like the NS texts through growing percentages of underused grammatical classes and declining proportions of overused ones at the same time.

The noted tendency of the Korean learners, compared with the NS writers, to overuse lexical verbs and adverbs while underusing modal verbs, nouns, and adjectives corroborates the finding of Oh (2007) who examined students with the same mother tongue. It partly contradicts, however, the studies of Hong Kong (Hyland & Milton, 1997) and Eritrean learners (McEnery & Kifle, 2002), who relied more heavily on modal verbs (and adverbs) than lexical verbs to convey epistemic meaning.³ In the field of interlanguage pragmatics, on the

³ These learners' preference for modal verbs has been attributed to the possible L1 transfer and/or the unbalanced attention on modal verbs found in the syllabus or pedagogic materials (Hyland & Milton, 1997; McEnery & Kifle, 2002). It then remains to be examined whether, and how, the teaching materials that Hong Kong and

other hand, Salsbury and Bardovi-Harlig (2000) observed a constant developmental pattern (i.e., *maybe* > *think* > *can* > *will* > *could*) in the oppositional talk of ESL learners from six different countries. In a similar vein, a study on the use of epistemic modality in Finnish learners' English oral interaction found that modal verbs and adverbs are more frequently used by the higher level learners whereas parentheticals such as *I think* or *I know* are favored by the lower level learners (Kärkkäinen, 1992). The later appearance of modal verbs on the developmental sequence in the spoken discourse is thus in line with the current finding based on the written genre.

The learners' infrequent use of epistemic modal verbs, especially at the lower level, may be accounted for in part by the difficulty that they experience in using modals. Modal verbs are known to be intrinsically complicated for their context-bound meanings and pragmatic implications as well as unshared cultural values (Hinkel, 1995; Holmes, 1982). Compared with modal verbs, epistemic adverbs, for example, are syntactically much more flexible and bring fewer grammatical and lexical complications (Hyland & Milton, 1997). The reason for the Korean learners' strongest preference for lexical verbs over all the other grammatical classes, on the other hand, is not completely clear at the moment. It may be related to Oh's (2007) observation that the range of lexical verbs actually used by Korean learners is severely restricted to such a degree that the three most frequent verbs (i.e., *think*, *know*, and *feel*) account for as much as 77% of the total number of lexical verbs. The researcher notes that these types of verbs reflect the characteristics of spoken instead of written registers, which she takes as the evidence that learners transfer informal conversational features to formal writing.

While epistemic nouns are significantly underused by the Korean learners compared with the NS,⁴ it is not just frequency but also the syntactic contexts

Eritrean learners are exposed to are different from those for the Korean learners in the introduction and/or focus of epistemic modality.

⁴ It has been pointed out that the NNS learners' use of nouns in general tends to be limited and redundant and to some extent characterizes their academic essays (Hinkel, 2003).

in which these nouns characteristically occur that differentiate the two groups. Below see some examples of epistemic nouns extracted from each corpus:

Learners:

- (a) From now on I'll tell the pro & con **opinion**. (BL)
- (b) I have different **opinion** on a teacher evaluation system in each school. (IL)
- (c) So now I am going to write my **opinion** about it, which can be either murder or mercy. (AL)

NS:

- (d) I suggest the alternative **opinion** that scientists must share the burden of moral responsibility for the consequences of their work.
- (e) It is my **belief** that Britain must be involved in the decision making which will eventually decide the new world order.
- (f) There is no **evidence** to support that the drop in religious interest was the reason for the development of social ills.

It can be seen in examples (a) through (c) that the learners employ a limited kind of epistemic nouns in relatively simple syntactic structures. The surrounding structure by itself does not provide a clue to the referent of the nouns (that is, what the authors' opinions are). In contrast, epistemic nouns in the NS essays tend to take a post-modifying or complementing (*that* or *to*-infinitive) clause. As a result, the sentences in which the epistemic nouns occur convey richer and more concrete ideas in an elaborate way, and this practice also opens up the possibility for some other epistemic items to co-occur in the complement clause.

Epistemic Combinations

The appropriate use of combinations of epistemic devices from different grammatical classes, or epistemic clusters, has been mentioned in previous

studies as an obstacle for NNS learners (Aijmer, 2002; Hyland & Milton, 1997). By isolating and comparing combinations of epistemic devices used in the four corpora, the present study detected some disparities according to proficiency levels in the learners' ability to conjoin epistemic devices in a proper manner. Out of the four combination types that have been identified in the database, the first one, which consists of modal verbs plus adverbs, is found in all the learner corpora (e.g., *might probably* in BL, *may probably* in IL, *could possibly* in AL) as well as in the NS corpus. It seems easy for NNS writers to use this combination due to the grammatical flexibility of adverbs noted above.

The second type of epistemic combination is modal verbs followed by lexical verbs, for example *may seem* as shown in the examples below.

AL:

- (g) Therefore, his worldview **may seem** to have changed little even after his study in the field. However, ...
- (h) No matter how shocking and undesirable the new discoveries **may seem** at the first time to some people, history tells us that their descendants have gradually absorbed the new truths and are living in those truths.
- (i) Making double majoring mandatory for all SNU students **may seem** a grand idea in theory, but in effect it will only detract from the quality of education.

NS:

- (j) This **may seem** plausible, but under close scrutiny it ends up being completely false.
- (k) Four weeks **may seem** like a long time, but it is skill that could save their lives in the future.
- (l) Even though this suggestion **may seem** far-fetched, it is a possibility since Furhman was unaccounted for in the house for at least ten minutes
...

This combination type was not found in the lower level corpora but only identified in the AL and NS corpus. One interesting finding is that it typically occurs in a rhetorical pattern where the writer first acknowledges a possibility and then denies it through contrastive or concessive clauses introduced by *but*, *however*, *even though*, etc. (see the examples above).

The third combination of epistemic devices is the co-occurrence of lexical verbs and modal verbs in a single sentence, the former in the main clause and the latter, the embedded complement clause. This combination was found in all the corpora except the beginning level. Lexical verbs (i.e., *think* and *believe*) and modal verbs (i.e., *will* and *would*) in the examples below are properly linked with epistemic devices from the same semantic category (i.e., certainty and probability, respectively), which contributes to the coherence of the writer's stance.

- (m) I **think** double majoring in SNU **will** be beneficial to students by making them more competitive and developed. (IL)
- (n) I **believe** that this would be real help, so it **would** contribute to one part of peace all over the world. (AL)
- (o) I **think** that the most significant discovery or invention **will** depend on the individual. (NS)

The last type of epistemic combination includes cases where modal verbs are used in the post-modifying or complementing *that*-clause of epistemic nouns. This type is much more frequent in the NS corpus than in the learner corpora for the reasons stated earlier. See below for some examples:

- (p) If a person learns a new language after they become an adult, there is a good **possibility** that they **would** not be equally as good as a native speaker of certain language. (AL)
- (q) His deception shocked the sports world and caused the loss of his medal, but it also held out the **hope** that athletes tainted by steroid use **might** finally forsake the drugs that may believe stimulate muscle growth and enhance strength. (NS)

The findings above suggest that the development of the NNS writers' ability to express epistemic modality may eventually reach the level where they can manipulate a set of epistemic combinations both frequently and appropriately. To sum up this section, the impact of proficiency on the grammatical distributions of epistemic devices manifests itself in the more skilled writers' heavier reliance on modal verbs, nouns and adjectives and lesser dependence on lexical verbs and adverbs. It may also be concluded that the development of epistemic modality implicates the well-balanced use of epistemic devices from diverse grammatical classes in various syntactic contexts and combinations.

Semantic Distributions

The writer's commitment to what he or she is asserting can be placed on a scale which extends from maximum to minimum certainty. The current section examines how epistemic devices are distributed across semantic categories that represent discrete points along such a scale, with the continuing focus on the differences according to proficiency. Table 6 shows the raw frequencies and percentages of the epistemic devices categorized according to five types of epistemic commitments: certainty, probability, possibility, usuality, and approximation.⁵

The most outstanding aspect in the results is the substantial discrepancy in the categories of certainty and probability between the proficiency levels. As is easily seen in Figure 2, the gap between the two semantic categories steadily becomes narrower as the proficiency develops (i.e., 45% in BL, 40% in IL, 20% in AL, and 12% in NS). In other words, two significant developmental patterns concomitant with advanced proficiency are the decrease of certainty and the increase of probability in the expression of epistemic modality. This finding, on the one hand, supports the results of previous studies which reported NS writers' tendency to be more tentative and indirect than NNS

⁵ Due to their semantic nature, *always* and *never* were doubly categorized into certainty and usuality, which accounts for the increased total frequency of epistemic devices in Table 6.

writers (Allison, 1995; Hu et al., 1982; Hyland & Milton, 1997; Oh, 2007); on the other hand, it clearly demonstrates that the NNS learners' choice of epistemic devices along the epistemic commitment continuum becomes incrementally closer to the NS standard with the progression in proficiency.

TABLE 6
Distribution of Epistemic Devices across Semantic Categories

Semantic categories	Raw frequency & percentage								χ^2 value
	BL		IL		AL		NS		
Certainty	443	59%	2297	57%	582	46%	3567	46%	157.408***
Probability	107	14%	697	17%	331	26%	2586	34%	4536.246***
Possibility	83	11%	458	11%	169	13%	877	11%	4.578
Usuality	93	12%	435	11%	156	12%	563	7%	70.287***
Approximation	28	4%	126	3%	27	2%	114	2%	43.952***
Total	755	100%	4013	100%	1265	100%	7707	100%	

*** $p < .001$

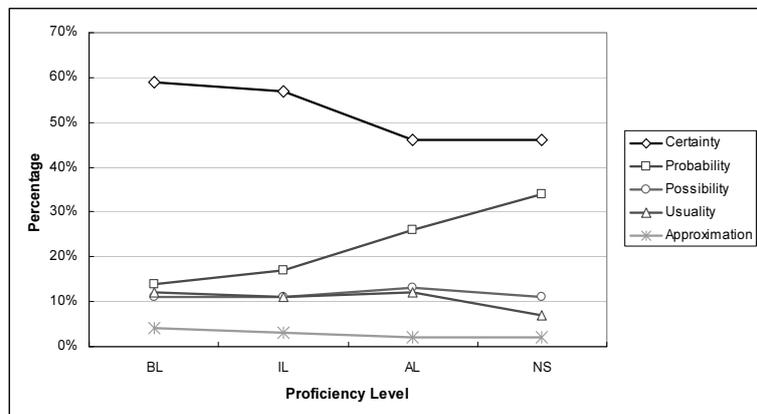


FIGURE 2
Semantic Categories of Epistemic Devices across Proficiency Levels

With regard to the sources of the different performance between the two groups in the area of epistemic modality, a variety of associated factors such as language input, classroom instruction, pedagogical materials, and different socio-cultural contexts have been traced in the bulk of previous studies (Hinkel, 1995, 2009; Holmes, 1988; Hyland & Milton, 1997; Kim, 2011; McEnery & Kifle, 2002; Oh, 2007). Another line of studies have interpreted the dissimilar products of the writers from different language/cultural backgrounds in terms of cross-cultural rhetoric. Specifically, it has been argued that Asian writers tend to deliver their arguments in a more indirect way compared with Anglo-American writers (Bloch & Chi, 1995; Harder, 1984; Hinds, 1983). Along the same line, Koreans were reported to articulate their personal opinions indirectly as a kind of face-saving strategy (Choi, 1988a, 1988b; Eggington, 1987; Ock, 1991, 1994; Wang, 2000). Considering that a number of studies have argued for the transferability of L1 pragmatic knowledge (Kim, 1998; Kim & Kwon, 2010; Koike, 1996; Schmidt, 1983; Takahashi, 1996; Takahashi & DuFon, 1989; Wannaruk, 2008), it may seem strange that Korean learners, especially at the lower level, exploit devices from the certainty category much more frequently than from the probability category, and not the other way around. One possible answer to this puzzle is that the different cross-cultural rhetorical patterns interact with the L2 writers' own perception of the discrepancy between L1 and L2 writing norms (Hyland & Milton, 1997). The result is that they become confused or uncertain about, and consequently fail to express, an appropriate degree of directness or assertiveness. A different – or perhaps compatible – scenario would be that without much respect to the L1 pragmatic knowledge, the acquisition of L2 pragmatic competence requires a threshold level of L2 proficiency such that learners only gradually become aware of L2 pragmatic standard on their long journey of L2 learning. Other potential accounts for the learners' (especially of lower proficiency) adoption of a relatively dogmatic stance may include the compensatory obligation that students who lack self-confidence might face, especially to mimic the received opinion of the teacher.

Last but not least, the data in the current study suggest that the writer's

preferred level of commitment to his/her assertion is influenced by the degree of his/her awareness of a potential audience and interaction with them, which seems to correlate positively with the proficiency level. Even when the lower-level writers show an awareness of the possible reader responses, they differ from advanced-level writers in the degrees of certainty with which to reassert their position. Compare examples below, which are taken from different levels but all present the writer's reassertion subsequent to the acknowledgement of the potential alternative views (as signaled by the concessive relationship conveyed by the conjunctives *but*, *though*, or *however*).

- (r) But I **think**, it is necessary for us. Everyone has a cellular phone and they give and take a message or contact by a cellular phone. And I **think** that we can get rid of disadvantages bit by bit. (BL)
- (s) Though there might be huge concerns about its side-effect and opposite opinions, it is **obvious** that this system **will** offer lots of suggestions regarding to current education. (IL)
- (t) However, I want to point to other aspect of unification problem. There **would** be nobody who can make objections to the premise that Korea is under extraordinary circumstances. (AL)
- (u) But I **feel** the British **would** resent the use of ECU - taking away the pound **would** be taking away part of Britain's own identity. (NS)

Notice that writers at the lower level tend to make strong arguments using devices expressing certainty (e.g., *think*, *will*, *obvious*) whereas those at the higher level prefer to use items signaling probability (e.g., *would*, *feel*). In other words, the higher level writers are likely to leave the audience more room for disagreement (or other opinions) by presenting their views in a less aggressive way. The skilled writers' frequent employment of probability markers instead of certainty expressions may thus be driven by "reader-oriented caution" (Kranich, 2011, p. 83). Certainty markers that are prevalent in beginner and intermediate level texts tend to close a dialogue with an

audience whereas probability markers may open it. This is because the choice of the former increases the interpersonal cost to readers who might support a contrary position whereas the use of the latter lowers it, thereby reducing and expanding, respectively, the dialogic space for alternative views in the interaction (White & Sano, 2006). It is in this sense that the expression of epistemic modality in a text may be said to be closely related with the degree and process of the writer's interaction with a potential audience. Whether and how writers build a relationship with the imagined readers and shape their texts to the anticipated response of the readers has been shown to significantly affect the success of a text (Hyland, 2001, 2005a, 2005b; Thompson, 2001). The ability to appropriately convey epistemic modality in an argumentative genre thus entails the effectiveness not only of presenting the writer's own claims but of taking control of the firmness of the commitment in consideration of the projected responses from the audience.

CONCLUSIONS

The present study has attempted to uncover differences that proficiency level makes in the use of epistemic modality in L2 writing. For this purpose the Korean college students' argumentative essays written in English were collected and divided into three levels to be compared among them as well as with the corresponding native English speakers' essays. The findings clearly demonstrate that epistemic modality is a feature of written text that varies with the proficiency of the writer. First of all, the range and types of epistemic items employed by the writers become increasingly broader as their proficiency increases. The heavy reliance on a small number of devices, for example, *think*, thus noticeably decreases at higher levels. Secondly, the development of proficiency involves more even distribution of grammatical classes of epistemic devices. Specifically, more advanced writers show heavier reliance on modal verbs, nouns and adjectives and less dependence on lexical verbs and adverbs. Thirdly, the higher level writers employ fewer epistemic devices from

the semantic category of certainty and more from the category of probability. It seems that the lower level NNS writers stay focused narrowly on their own arguments that they express with certainty, and as a result, epistemic devices signaling probability or possibility do not often occur in their texts. In contrast, the advanced NNS and NS writers who are better skilled at constructing a dialogue with an audience appear to build more convincing arguments through making repeated use of a wide range of epistemic items conveying probability as well as certainty. In other words, the higher level writers' frequent use of probability markers tends to lend the text a more dialogic voice while the lower level writers' heavy reliance on certainty expressions produces a more uncompromising text. These two types of texts are expected to have markedly different effects on readers (Crismore & Vande Kopple, 1997).

Not surprisingly yet still interestingly, the present study shows that the higher the proficiency level is, the more closely the NNS writers approximate the native English writers in all the measures noted above. If it can be assumed that rising proficiency roughly corresponds to learners' development over time, as a result of the concurrent progressive modifications in various aspects, the learners may be said to gradually approach the native speakers in expressing epistemic modality in their essays. Specifically, the NNS learners' acquisition of this aspect of L2 pragmatic competence may be argued to entail the improvement in their ability to exploit a wide array of epistemic devices from various grammatical classes (and their combinations) in diverse syntactic contexts on the one hand, and to balance assertions and doubts in their arguments to the degree appropriate by the NS norm, on the other. Whether a NS norm is indeed the final destination of the development or its approximation is always desirable is a debatable issue, especially with the current status of English as a lingua franca. Still, the results of the current study evidenced that the higher the NNS writers' proficiency gets, the closer their texts approach the NS writers', at least in the domain of epistemic modality.

It is not crystal clear how much of the differences that the present study

has identified can be attributed to cultural norms rather than to levels of competence. As noted earlier, a number of studies have attempted to approach the subject of epistemic modality from the perspective of cultural differences. Asian languages such as Korean, Japanese, and Chinese have been noted for their preference for indirectness, compared with Indo-European languages (Bloch & Chi, 1995; Choi, 1988a, 1988b; Eggington, 1987; Harder, 1984; Hinds, 1983; Ock, 1991, 1994; Wang, 2000). The Korean learners of English in this study, however, opted for a greater degree of certainty instead of probability or possibility in their L2 texts, especially when they were at the lower level of proficiency. This seemingly incoherent result may have been contributed to by a variety of associated factors that were previously discussed, perhaps in tandem. One issue that has not been raised yet is the possibility of a changed (or changing) preference in writing style among Asian writers: recent contrastive studies have reported that the L1 texts of Asian L2 writers begin to resemble native English writers' texts in rhetorical pattern (e.g., by using a deductive style) presumably due to bidirectional transfer (Hirose, 2003; Kang & Oh, 2011; Liu, 2007). While there are no doubt some cultural divergences in writing style (Kaplan, 1966), it should also be remembered that "individuals from the same country cannot be lumped together as an undifferentiated group nor cultural norms be regarded as decisive" (Hyland, 2005c, p. 115).

From a pedagogical point of view, it is encouraging that a number of studies have shown that instruction does help to raise students' pragmatic awareness and lead to the development of pragmatic competence (Bardovi-Harlig, 2003; House, 1996; Wishnoff, 2000). Specifically, there is evidence that writing actually improves as a result of explicit instruction in metadiscourse features including hedges and boosters (Cheng & Steffensen, 1996; Shaw & Liu, 1998). The aim of instruction in epistemic modality should at least be to help the learners recognize the function of this concept and become familiar with a wide range of epistemic devices that can realize it. Manipulative tasks such as adding certain epistemic devices to or removing them from a text or replacing given devices with different expressions,

perhaps from a different semantic category, have been suggested as useful exercises that can make learners conscious of the forms and functions of epistemic modality (Hyland & Milton, 1997; Oh, 2007). Given the findings of the present study, Korean learners of English would greatly benefit from a drill that targets the promotion of epistemic probability particularly by employing the modal verb *would*. For this and other related instructional purposes, texts written by the learners themselves may be utilized, sometimes along with the corresponding native writers' texts for comparison (c.f., Data-Driven Learning, Johns, 1991). The learners are driven by these materials to notice that the inappropriate choices of epistemic devices and/or extreme reliance on too restricted a type of items could sound awkward and even unacceptable in the target language. When it comes to presenting comparable L1 texts to the learners, the culture- and context-dependent nature of epistemic modality, particularly modal verbs, should be taken into account because the more authentic and culture-bound the given contexts are, the more understandable the full range of epistemic meanings and cultural differences may become (Hinkel, 1995).

It seems, on the other hand, necessary to acknowledge that L2 writing instruction may not lead the NNS learners to the full acquisition of epistemic modality (or the perfect approximation to NS norms) because some L2 writing conventions might remain inaccessible to them due to the ideological differences which have long been constructed in different cultures (Hinkel, 1999). It is also advisable to keep in mind that putting an emphasis on the differences between the two languages in L2 writing instruction may implant false beliefs or stereotypes in L2 learners' mind (e.g., the writing style of English is better than that of their L1). Therefore, teachers and students should be cautious about the uniqueness of each culture and different writing conventions, which need to be sufficiently reflected in the L2 writing instruction (Kubota, 1998), not to the exclusion of the consideration of "small cultures" (Atkinson, 2004).

The current study has departed methodologically from the prevalent simple comparison between the NS and NNS writers (Hyland & Milton, 1997;

McEnery & Kifle, 2002; Oh, 2007) by incorporating proficiency factor into the data compilation and analysis. It is limited, however, in that it examined cross-sectional instead of longitudinal data that was collected from learners of one native language background due to temporal and financial constraints. It thus remains to be investigated in the future whether the changes across proficiency levels identified in the present study are borne out when an individual or a group of learners with different as well as the same mother tongues are traced over an extended period of time.

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