A Comparative Analysis of Epistemic and Root Modality in Two selected English Books in the Field of Applied Linguistics Written by English Native and Iranian Non-native Writers

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Abstract

Academic discourse has always been the focus of many linguists, especially those who have been involved with English for Academic Purposes (EAP) and discourse analysis. Persuasion, as part of rhetorical structure of academic writing, is partly achieved by employing modality markers. Adopting a descriptive design, the present study was carried out to compare the use of modality markers in terms of frequency and their categorical distribution in two academic books, written in English, in the field of Applied Linguistics by native English and non-native Iranian authors. Quirk, Greenbaum, Leech, and Svartvik’s (1985) model of modality was employed as an analytical framework to identify the type of modal verbs. The frequency of different types of modal verbs was calculated per 100000 words and the significance of difference in their distribution was checked through Chi-square nonparametric inferential statistics. The results of the statistical analyses did not show any significant difference in the overall distribution of modality (both epistemic and root) markers. However, significant differences were observed in the categorical distributions of modal verbs in two corpora. The results were attributed to the non-native writers’ lack of awareness of the conventional rules of English rhetoric, and the lack of explicit instruction in this field. The findings could offer pedagogical implications for those involved in syllabus design and materials development in general and English writing courses in particular.

Keywords: academic writing, discourse analysis, epistemic modality, root modality
Introduction

Writing is considered as an instrument through which people communicate with one another in time and space, transmitting their accumulated culture from one generation to another. "Writing in ones' mother tongue is a demanding task that calls upon several language abilities, as well as upon more general cognitive abilities" (Schoonen, et al., 2003, p. 171). When we view writing in this broad perspective, we can see how vitally our written language is related to the life of the individuals and to the total life of the community as well. Halliday (1973) refers to writing as learning how to mean. Candlin (1987) remarks that writing is a negotiative and explanatory act requiring great judgment. Writing is an act that takes place within a context, that accomplishes a particular purpose and that is appropriately shaped for its intended audience (Hamp-Lyons & Kroll, 1997). However, learning to write in both native and second language is more than just writing things down, and good writing is not restricted to practice exercises in grammar and vocabulary at the sentence level. Celce-Murcia (1991) argues about the fact that "the ability to express one's idea in written form in a second or foreign language and to do so with reasonable accuracy and coherence is a major achievement; many native speakers of English never truly master this skill"(p.233). Orta (2010) declares that, "academic writers make comments on the information they convey through their texts; they convey judgments, align themselves with readers and express solidarity by anticipating objections and responding to an imagined dialogue with others, thus constructing the text with their readers” (p. 81).

According to McCarthy (2001), processing a good written text entails paying attention to several factors one of which is discourse. In the study of discourse what is important is the relationship between text and the situation in which it occurs. Discourse analysis, in turn, received much more attention with the emergence of Halliday’s (1973) Systemic Functional Linguistics (SFL) which is a theory of language based on the notion of language function. According to SFL framework, language has three basic functions: the ideational, the textual, and the interpersonal function, among which it is the interpersonal function which is represented by modality. Modality is a language device through which the speaker intrudes him/herself into the context of situation, both expressing his/her own attitudes and judgments and seeking to influence the attitudes and behavior of readers or listeners. Modality as an
important issue in the interpersonal function of language reflects speakers' or writers' opinion and intention about a proposition (Halliday, 1994).

No single definition of modality has been proposed since it has attracted the attention of text analysts. Lyons (1977) suggested that modality refers to people's opinions and attitudes towards propositions expressed with language or circumstances described by propositions. Palmer (1986) pointed out that modality is the grammaticalization of the speaker's subjective attitudes and opinions. Quirk, Greenbaum, Leech, and Svartvik (1985) regarded modality as the speaker's judgment on the truth value of the propositions.

According to Quirk et al. (1985), two chief modality can be realized; *epistemic modality* and *root modality*. The former concentrates on the speaker or the writer and shows how much certainty the speaker or the writer has for his/her proposition; whereas the latter concentrates on the hearer or the reader. Both epistemic and root modalities can be textualized through different lexical verbs, adverbs, adjectives, nouns and modal auxiliaries. The present study was confined to analyzing interpersonal function and specifically epistemic and root modal auxiliaries. Root and epistemic meanings of modal verbs are defined and illustrated below:

I. *Root meanings of modal auxiliaries:* When we exchange goods and service as a proposal, we are arguing whether something DO or DO NOT do it, so the modality is concerned with the degrees of obligation and inclination (Quirk et al., 1985). These resources contain the following categories:

1. *Ability:* can/could

2. *Permission:* can/could/ may/might

3. *Obligation:* must/ ought to/ shall/should

4. *Volition:* will/would

5. *Possibility:* may/might

6. *Prediction:* will/shall

7. *Habitual activity:* will/would
II. Epistemic meanings of modal auxiliaries: According to Palmer (1986), epistemic modality should apply not only to modal system that includes the notions of possibility and necessity, but also to any modal system that represents the degree of commitment by the speaker or the writer to what he/she says. According to Quirk et al. (1985), these resources contain the following:

**Must:** The modal verb *must* indicates that writer draws a conclusion on the basis of available evidence.

**May/Might:** The epistemic meaning of *may* involves a lower degree of belief in the truth of a proposition.

**Can/Could:** The epistemic meaning of *can/could* is typically found in question and in negated statements. With regard to the paraphrase of *can/could*, there is a subtle superficial difference with that of *may/might*, that is to say, *may/might* is paraphrased as it is possible which is followed by a that clause whereas *can/could* is paraphrased as it is possible followed by an infinitive clause.

**Should/ought to:** *Should* and *ought to* are often used to indicate what is regarded as probable or what may reasonably be expected.

**Have (got) to:** According to Quirk et al. (1985), the forms *have to* and *have got to* are generally necessity modals, but rarely used in an epistemic sense too.

**Will/Would:** The epistemic meaning of *will/would* indicates a reasonable conclusion, a high degree of confidence in the truth of the proposition. And *would* is clearly the tentative form of will. That is to say, they are used to express what we believe or guess to be true (Quirk et al., 1985).

A broad survey of research on modality shows that it has been examined from different perspectives in different disciplines (e.g., Vazquez & Giner, 2008; Ahangari & zafarani, 2010; Alaei, Agha Golzade, Dabir Moghadam, & Golfam, 2010; Rubin, 2010; Wang, 2010; Ye, 2010; Assadi Aidinlou & Mohammadpour, 2012; Assadi Aidinlou & Mohammadpour, 2013; Adejare, 2014) and little attention has been given to how writers from different cultures employ these elements. Prompted by the fact that modality can be used to convey a message, create solidarity between the writer and the reader, and can be related to the authors’ culture, the present research article is carried out to
investigate the similarities and differences between native (English) and non-native (Iranian) academic authors in their use of modality resources (both epistemic and root) in two Applied Linguistics books written in English. For this purpose the following five null hypotheses were formulated: The study specifically addressed the following research question:

Are there any significant differences between the overall and categorical frequency and type of epistemic and root modality used by native English authors and nonnative Iranian authors in two selected books in the field of applied linguistics?

1) This question was investigated by five related null hypotheses developed to examine the overall frequency and categorical frequency of epistemic as well as root modal auxiliaries in the target corpus.

**Method**

**Corpus**

The data for this study came from two English books in the field of Applied Linguistics: one written by native speakers of English and the other written by non-native Iranian authors. The books were entitled: *Approaches and Methods in Language Teaching* by Jack C. Richards and Theodore S. Rodgers (2001) and *An English Language Teaching Methodology Textbook for Iranian Undergraduate Students Majoring in English (ELT Quick 'n' Easy)* by Mojgan Rashtchi and Arshya Keyvanfar (1999). The choice of the textbooks was based on a number of criteria: the first criterion was the popularity of these books and their familiarity for all those in the field of EFL teaching and learning in the Iranian context of TEFL. The other criterion was their availability both in electronic form and in paper form so that their analysis would be more practical and more accurate.

**Instrumentation**

The methodology in this study followed Halliday’s Systemic Functional Linguistics (SFL) approach, in general, and its Interpersonal Function, in particular to describe the lexico-grammaticalization of modality. As a model of analysis, this study employed Quirk et al.’s (1985) model of modality as a
reference system for data collection and analysis. In this theoretical framework, modality falls into two categories of epistemic and root modality.

**Procedure**

All target texts were electronically stored and then searched for modality elements in order not to run the risk of skipping any example. In addition to electronic searches, manual analyses were also made to ensure validity. Also, meticulous attention was given to make sure that context-sensitive analyses had been carried out. Since the type and appearance of modality marker categories are extremely varied and multifunctional, a context-sensitive analysis of each marker had to be carried out before it was finally counted. Applied Linguistics was selected as the field of this study. Since this field deals mainly with humanities and their social behavior, it is argued that Applied Linguistics draws on more modal auxiliaries than other fields of studies (Duszak, 1997). To answer the research question, the overall and categorical distribution of each element was calculated in two sets of corpora. All quotations, linguistic examples, footnotes, bibliographies, tables, and figures were excluded.

**Design**

The present study took a descriptive text-analytic design as the prime research design in the related fields to investigate whether native English writers and non-native Iranian authors differed in their use of modal auxiliaries. Since the variables of the study were in nominal scale, the Chi-square statistics, as a nonparametric inferential statistics was used to compare the frequencies.

**Results**

**Overall Distribution of Epistemic and Root Modals across two Corpora**

In order to find out whether native (English) and non-native (Iranian) authors differed in their overall use of epistemic and root modality representing the interpersonal function through different modal auxiliaries, the frequency of these categories per 100000 words was calculated. Table 1 shows chi-square test which compared the overall distribution of epistemic and root modality in two sets of corpora.
As it is seen in Table 1, the frequency of epistemic modality per 100000 words used by native English and non-native Iranian writers were 640.52 and 610.51, respectively. The frequency of root modality, in native writers, was 402.26 and 429.42 in non-native Iranians. As it is shown, the value of the observed chi-square was not significant at $\alpha$ level ($p = .948 > .05$) indicating that there was not a significant difference between these two groups in their use of both epistemic and root modality. Thus the null hypothesis stating that there is not any significant difference in the frequency of modals (both epistemic and root) in the construction of persuasion between native and non-native Iranian authors was not rejected.

Regarding the comparison between the uses of epistemic versus root modals, Table 1 shows that both groups of writers tended to use more instances of epistemic modality than root one. According to Hyland (2005), such devices reveal the unwillingness to present propositional information unconditionally and doubtlessly. Hyland (2005) stated that by the use of epistemic modality that indicate possibility, academic writers can easily avoid problems because of writing something unproven and can express such materials by caution and precision. Thus they emphasize the “subjectivity of a position by allowing information to be presented as an opinion rather than a fact and therefore open that position to negotiation” (Hyland, 2005, p. 52).

**Overall Distribution of Epistemic Modality across two Corpora**

Table 2 shows the use of epistemic modality markers by native English authors (640.52) and non-native writers (610.51) per 100000 words.
As it is shown in Table 2, the value of observed Chi-square was not significant at α level (p = 0.397) indicating that there was not a significant difference between these two groups in their use of epistemic modality (p-value > .05). It seems that both writers from different cultures used approximately the same number of instances of epistemic modality. Thus, the null hypothesis stating that there is not any significant difference in the frequency of epistemic modals in the construction of persuasion between native (English) and non-native (Iranian) authors was not rejected (p > 0.05).

**Overall Distribution of Root Modality across two Corpora**

According to Table 3, the book written by native writers contained 402.26 and the book written by non-naive writers 429.42 instances of root modality per 100000 words. Table 3 shows the summary of the results of chi-square test. As it is shown, the value of observed Chi-square was not significant at α level (p = .349> .05) indicating that there was not any significant difference between these two groups in their use of root modals.

### Table 2

*The chi-square test to compare the Overall Distribution of Epistemic Modality across two Corpora*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Epistemic and Root Modality per 100000</th>
<th>Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Native</td>
<td>Non-native</td>
<td>Native</td>
</tr>
<tr>
<td>Total Epistemic</td>
<td></td>
<td>640.52</td>
<td>610.51</td>
</tr>
</tbody>
</table>

### Table 3

*The chi-square test to compare the Overall Distribution of Root Modality across two Corpora*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Epistemic and Root Modality per 100000</th>
<th>Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Native</td>
<td>Non-native</td>
<td>Native</td>
</tr>
<tr>
<td>Total Epistemic</td>
<td></td>
<td>402.26</td>
<td>429.42</td>
</tr>
</tbody>
</table>
Thus, the research null hypothesis stating that there was not any significant difference in the type of root modality in the construction of persuasion between native and non-native Iranian authors was not rejected (p-value > 0.05).

**Categorical Distribution of Epistemic Modality across two Corpora**

In order to examine whether native (English) and non-native (Iranian) authors differed in their use of epistemic modal subcategories, first the frequency of each category per 100000 words were calculated. Table 4 displays the summary of the results of chi-square test for each epistemic subcategory.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Category per 100000 (Native)</th>
<th>Category per 100000 (Non-Native)</th>
<th>observed N (Native)</th>
<th>observed N (Non-Native)</th>
<th>Expected N (Native)</th>
<th>Expected N (Non-Native)</th>
<th>Residual (Native)</th>
<th>Residual (Non-Native)</th>
<th>Chi-square</th>
<th>D.f</th>
<th>Asym. P</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>139.24</td>
<td>155.21</td>
<td>139</td>
<td>155</td>
<td>147.0</td>
<td>147.0</td>
<td>-8.5</td>
<td>8.5</td>
<td>87</td>
<td>1</td>
<td>.351</td>
<td></td>
</tr>
<tr>
<td>Will</td>
<td>123.77</td>
<td>31.04</td>
<td>124</td>
<td>31</td>
<td>77.5</td>
<td>77.5</td>
<td>46.5</td>
<td>46.5</td>
<td>2.922</td>
<td>1</td>
<td>.087</td>
<td></td>
</tr>
<tr>
<td>Can</td>
<td>123.77</td>
<td>206.95</td>
<td>124</td>
<td>207</td>
<td>165.5</td>
<td>165.5</td>
<td>-41.5</td>
<td>41.5</td>
<td>20.813</td>
<td>1</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Should</td>
<td>83.54</td>
<td>77.60</td>
<td>84</td>
<td>81</td>
<td>38.5</td>
<td>38.5</td>
<td>7.5</td>
<td>7.5</td>
<td>2.922</td>
<td>1</td>
<td>.087</td>
<td></td>
</tr>
<tr>
<td>Would</td>
<td>46.41</td>
<td>31.04</td>
<td>46</td>
<td>31</td>
<td>38.5</td>
<td>38.5</td>
<td>7.5</td>
<td>7.5</td>
<td>2.922</td>
<td>1</td>
<td>.087</td>
<td></td>
</tr>
<tr>
<td>Might</td>
<td>30.94</td>
<td>5.17</td>
<td>31</td>
<td>5</td>
<td>18</td>
<td>18</td>
<td>13.5</td>
<td>13.5</td>
<td>18.77</td>
<td>1</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Could</td>
<td>30.94</td>
<td>41.39</td>
<td>31</td>
<td>41</td>
<td>36.0</td>
<td>36.0</td>
<td>-5.0</td>
<td>5.0</td>
<td>1.389</td>
<td>1</td>
<td>.239</td>
<td></td>
</tr>
<tr>
<td>Cannot</td>
<td>6.18</td>
<td>5.17</td>
<td>6</td>
<td>5</td>
<td>5.5</td>
<td>5.5</td>
<td>.5</td>
<td>.5</td>
<td>0.914</td>
<td>1</td>
<td>.763</td>
<td></td>
</tr>
<tr>
<td>Couldn't</td>
<td>3.09</td>
<td>5.17</td>
<td>3</td>
<td>5</td>
<td>4.0</td>
<td>4.0</td>
<td>-1.5</td>
<td>1.5</td>
<td>.500</td>
<td>1</td>
<td>.480</td>
<td></td>
</tr>
<tr>
<td>Have to</td>
<td>3.09</td>
<td>15.52</td>
<td>3</td>
<td>16</td>
<td>9.5</td>
<td>9.5</td>
<td>-6.5</td>
<td>6.5</td>
<td>8.895</td>
<td>1</td>
<td>.003</td>
<td></td>
</tr>
<tr>
<td>Ought to</td>
<td>3.09</td>
<td>5.17</td>
<td>3</td>
<td>5</td>
<td>4.0</td>
<td>4.0</td>
<td>-1.5</td>
<td>1.5</td>
<td>.500</td>
<td>1</td>
<td>.480</td>
<td></td>
</tr>
</tbody>
</table>

As it is shown in Table 4, the difference between the frequency of epistemic modals *may* (sig=.351>0.05), *should* (sig=.637>0.05), *would* (sig=.087>0.05), *must* (sig=.087>0.05), could (sig=.239>0.05), *can't* (sig=.763>0.05), *couldn't* (sig=.480>0.05) and *ought to* (sig=.480>0.05) was not significant. However, the difference between the use of epistemic modals *will* (sig=.000<0.05), *can* (sig=.000<0.05), *might* (sig=.000<0.05) and *have to* (sig=.003<0.05) reached the significance level. It is worth mentioning that, the frequency of epistemic modal verbs *will* and *might*, used by native authors was significantly more than non-native one. On the other hand, the epistemic modals *can* and *have to*
occurred more frequently in the non-native author. These mixed results are best shown in Figur1.

Figure 1. Categorical distribution of epistemic modality

Categorical Distribution of Root Modality across two Corpora

In order to examine whether native English and non-native Iranian authors differed in their use of root modals subcategories, first the frequency of each category per 100000 words and their percentages were calculated in two books, in the field of Applied Linguistics. Table 5 displays the summary of the results of chi-square test for each root subcategory.
According to Table 5, the difference between the root modals *may* (sig=.595>0.05), *should* (sig=.761>0.05), *must* (sig=.592>0.05), *would* (sig=.889>0.05), *can’t* (sig=.285>0.05), *couldn’t* (sig=.480>0.05) and *ought to* (sig=.480>0.05) and *have to* (sig=.052>0.05) was not significant. However, the difference between native and non-native authors in terms of the use of epistemic modals *will* (sig=.000<0.05), *can* (sig=.000<0.05), *might* (sig=.004<0.05) and *could* (sig=.000<0.05) reached the significance level. It is worth mentioning that, the frequency of root modal verbs *will* and *might*, used by native author was significantly more than non-native one. On the other hand, the root modals *can, could* and *have to* occurred more frequently in the academic book written by non-native author. This divergence in the use of these subcategories between native English and non-native Iranian writers is best shown in Figure 2.
The findings of the present study supported the results obtained by Nabifar and Pooyafar (2014) who had found no significant difference between the frequency of epistemic modality markers in the Conclusion sections of the MA theses written by native (English) and non-native (Iranian) TEFL students. However, the finding of the present study ran against those of Coates (1993), Hyland and Milton (1997), and Karkkainen (1992) who found that native speakers of English tended to use more instances of epistemic modality than their non-native counterparts.

Findings of the study regarding the equal use of root modals by both English native and non-native authors ran against those of AssadiAidinlou and Mohammadpour (2012) and Nabifar and Pooyafar (2014) who found that native authors of English employed more instances of root categories than their non-native (Iranian) counterparts in their writings.

One area of language use (whether written or spoken) that is likely to be influenced by the authors’ culture is the use of modality markers. Given this gap in the literature, this study built on two Applied Linguistics academic...
books written by native English and non-native Iranian authors as the corpus of the study to find out whether there were differences in the frequency of modality markers between these two groups.

It can be concluded that effective teaching and learning crucially depend on understanding how language works and using this understanding to help learners and writers to communicate appropriately and successfully in their communities. It is suggested that modality is a valuable tool for providing logic and reliance in the text and a useful means for writers to help their audiences organize their writings. Syllabus designers and material writers should take such resources into account and include them into the materials they compile to make them more reader-friendly. In sum, having knowledge and understanding of modality might be of considerable value for teachers, writers and syllabus designers, providing important insights into language use that can have pedagogical payoffs.

One specific target group which can benefit from the results of the present study is academic writers in the fields of social sciences (e.g., Applied Linguistics). Since they deal with humans and their social behavior, they have to establish strong interpersonal relationships with their authors in order to communicate well. One way by means of which they can do this successfully is the use and incorporation of appropriate modality markers into written discourse. Also, if those involved in the process of designing and programming composition courses for students and writers in these fields pay required attention to the teaching of these markers, along other writing skills, we can witness proficient writers who can publish scholarly books and articles in their related fields of study.

Like other studies, this study had its own limitations. The corpus of investigation was limited to one field of study namely Applied Linguistics. If two or three other fields of study were added, we would come up with more consolidated results. Second is the size of the corpora. If we would expand our size of the corpora and add far more academic books to our corpus, we would, it is ensured, come across a better generalized conclusion about rhetorical behavior of both native and non-native writers. Also Hyland (2005) advocates the use of large numbers of texts to gain insights into the core values and beliefs of the practices of the communities. He recommends using large corpora to
establish the common tendencies, and supplementing them with interviews of writers and readers to confirm findings and establish reasons for strategies and choices that writers make. Text-based interviews are especially recommended. Accordingly, the present study brought to our attention some key research topics that can warrant separate future studies.

Also, disciplines other than Applied Linguistics could be the focus of the study. Since no significant differences in the distribution of the frequency of the overall modality were observed, other disciplines in hard fields can be investigated for the use and frequency of these elements. Writers of both genders from different languages/cultures can be investigated in terms of the use and frequency of the modality markers in academic books. More specifically, a contrastive study could be the topic of a future research project to see whether male and female English academic writers differ from other non-native academic writers in practicing and revealing their authors’ identities regarding the use and frequency of modality markers in their writings.

References


**Biodata**

**Nasser Ghafoori** holds Ph.D. in Teaching English as a Foreign Language (TEFL). He is assistant professor at IAUT. He has published several articles in international journals and has presented in many local and international conferences. His fields of interest include applied linguistics, discourse analysis, language teaching and testing.

**Minoo Shahmohammadi** has got her MA in Teaching English as a foreign Language (TEFL) from IAUT. She has been teaching English in senior high school for more than ten years. She has also been teaching in several private English language institutes in Tabriz. She is interested in the field of discourse analysis and she has decided to continue her studies in this field.