A comparative study of mood and modality in academic writing: male vs. female authors of research articles in applied linguistics

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Abstract: Academic writing has always been the focus of many linguistic researchers, especially those who have been involved with English for Academic Purposes (EAP). Like conversation and other modes of communication, writing is a rich medium for gender performance. In fact, writing functions to construct the disciplines as well as the gender of its practitioners. Despite the significance of author’s gender as one constitutive dimension of any writing, it has relatively been under-researched. One way by means of which author’s gender is practiced and revealed in written discourse, is the incorporation and use of modal auxiliaries. Examining 40 Applied linguistics research articles (20 written by non-native Iranian male and 20 written by non-native Iranian female writers), the present study sought to examine whether male and female non-native Iranian writers differed in their use of such elements. To do this, Quirk, Greenbaum, Leech, and Svartvik (1985) model of mood and modality was employed as an analytical framework to identify the type of these elements. The significance of difference in their distribution in academic research articles written by non-native Iranian male and female authors was checked using the statistical analysis technique of chi-square. The results of the study did not show any significant difference in the categorical distribution of mood and modality, however, significant results were observed in the overall distributions of modal elements. The finding of the present study can provide a sound basis for the development of pedagogic materials.

Key Words: Academic writing, Discourse, Gender, Mood, Modality

1 Introduction

In reaction against writer-oriented approach to English as a second language (ESL) composition, English for specific purposes (ESP) has discovered its way into writing tradition over the past thirty years and has shifted the focus of attention from the writer to the reader (Silva & Matsuda, 2002). Academic writers need to present their claims cautiously, accurately and modestly in order to meet the expectations of the corresponding discourse community and to enter a dialogue with their audience. This reader-oriented approach to ESL composition, in turn, received much more attention with the emergence of English for academic purposes (EAP). More recently this EAP movement in L2 writing has brought genre analysis into focus. Academic discourse genres have received enough attention in EAP courses, whose main objectives are to assist learners in recognizing and learning patterns of language in various academic and professional contexts (Hyland & Hamp-Lyons, 2002).
interpersonal function, among which it is the interpersonal function which is represented by mood and modality. These are the components 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. Mood and modality are two important issues in the interpersonal function of language because they reflect speakers’ or writers’ opinion and intention about a proposition (Halliday, 1994). Since the expression of these elements, is an important aspect of persuasive and successful written discourse, most of the work on mood and modality has focused on the way that mood and modality are employed by writers from 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) or on the contrastive studies on the use of these devices by writers with different nationalities (Sujatna, 2013; Nabifar & Pooyafar, 2014).

As far as the researcher knows, there are few studies (Crismore, Markkanen, & Steffensen, 1993; Johnson & Roen, 1992; Tse & Hyland, 2008) which have examined the effect of gender on the way writers and speakers use language. These studies have popularized the importance of gender in the way language is used and confirmed that male and female writers did differ in the employment of some specific features of language.

Analysis of widely available publication titles in writing as well as in the larger field of research indicates that the issue of gender in which how male and female academic writers employ these resources in their research articles has not been given major or explicit attention. As a model of analysis, this study brought in Quirk et al.’s (1985) model of mood and modality as a tool of analysis or as a practical theoretical framework for the comparison of the theses where modality falls into epistemic modality and root modality. No single definition of mood and modality has been proposed since it has attracted the attention of text analysts. Mood is the "category of grammar that deals with the speaker's attitude toward the propositions and this is reflected in the form of the verb" (Greenbaum & Nelson, 2002, p. 62). According to Quirk et al. (1985), moods are a set of contrasts which are often shown by the form of the verb and which express the writer’s or speaker’s attitude to what is said or written. As Berry (1975, p. 166) and Strang (1969, p. 84) respectively suggest there are two terms in the system of mood namely indicative and imperative, although some grammarians recognize a third, the subjunctive mood (Greenbaum, 1976 & Quirk et al., 1985). However, there is no agreement about the definition of modality yet. Lyons (1977) pointed out that modality refers to people's opinions and attitudes towards propositions expressed with language or circumstances described by propositions. Palmer (1986) claimed that modality is the grammaticalization of the speaker's subjective attitudes and opinions. Quirk et al. (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 concentrate on the speaker or the writer and show 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. It is worth mentioning that, the present study was confined to analyzing interpersonal function and specifically epistemic and root modal auxiliaries.

1. 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:

   **Ability:** can/could
   **Permission:** can/could/ may/might
   **Obligation:** must/ ought to/ shall/should
   **Volition:** will/would
   **Possibility:** may/might
   **Prediction:** will/shall
   **Habitual activity:** will/would

2. 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: According to Quirk et al. (1985), the modal verb must indicates that writer draws a conclusion on the basis of available evidence.

May/Might: As Quirk et al. (1985) believe, 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).

To find out whether non-native Iranian male and female writers differ in the employment of these resources, the present study addresses the following null hypotheses:

1. There are not any significant differences in the frequency of the use of modals (both epistemic and root) employed by non-native Iranian male and female authors in their research articles in the field of applied linguistics.
2. There are not any significant differences in the type of epistemic modality employed by non-native Iranian male and female authors in their research articles in the field of applied linguistics.
3. There are not any significant differences in the type of root modality employed by non-native Iranian male and female authors in their research articles in the field of applied linguistics.
4. There are not any significant differences in the frequency of the use of moods (both indicative and imperative) employed by non-native Iranian male and female authors in their research articles in the field of applied linguistics.

2 Method
2.1 Data Collection Procedure
Forty research articles (20 written by Iranian male academic writers and 20 written by Iranian female academic writers) constituted the corpus of this study. The articles were selected from the most leading international English journals. Both Iranian and foreign journals which publish the articles in the field of Applied Linguistics were used as the source of data for the present study. The publication period was limited to the dates between 2000 and 2013. To invoke Swales’ (1990) differentiation of data-based and theory-based articles, all articles were data-based since it makes the corpus comparability valid. Nwogu’s (1997) three criteria namely, representivity, accessibility, and reputation were met. This means that efforts were made to be sure that all articles were representative of the field of Applied Linguistics. Those articles which were easier to find were selected. In regard to representation, all journals in general, and articles in particular were popular all over the world. All articles were electronically stored and they were all searched for these elements in order not to run the risk of skipping some the elements (mood and modality). 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 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). All quotations, linguistic examples, footnotes, bibliographies, tables, and figures
were excluded. Result and Discussion sections were looked for the elements. Thus, all articles were checked to make sure that they all had the above mentioned rhetorical sections.

2.2 Categories of Analyses

As mentioned earlier, this study sought to investigate whether non-native Iranian male and female differed in the use of mood and modality elements or not. In other words, taking both quantitative and qualitative approaches, the researcher wanted to examine the similarities and differences between non-native Iranian male and female English writers in incorporation of these elements. For the purpose of obtaining the aforementioned objectives the researcher needed one powerful model to capture all requirements of academic written discourse. Quirk et al. (1985) model of mood and modality was employed to investigate the type and the frequency of such elements. Then, inferential statistics were used to find out whether the frequency of occurrences of the elements was significantly different in two sets of articles written by non-native Iranian English writers. Since the variables of the study are nominal, Chi-square, with a significance of P=0.05 was used to determine the significance of the differences among frequencies.

3 Data analyses and Discussions

3.1 Overall Distribution of Epistemic and Root Modals across two Corpora

In order to investigate whether non-native Iranian male and female authors differed in their use of epistemic and root modality representing the interpersonal function through different modal auxiliaries, the frequency of these categories per 1000 words was calculated Table 1 shows chi-square test which compared the distribution of overall epistemic and root modality in the research articles written by non-native Iranian male writers.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Epistemic and Root Modality per 1000</th>
<th>Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Female</td>
<td>Males</td>
</tr>
<tr>
<td>Total Epistemic</td>
<td>12.96</td>
<td>10.71</td>
<td>16887</td>
</tr>
<tr>
<td>Total Root</td>
<td>4.38</td>
<td>4.63</td>
<td>16887</td>
</tr>
</tbody>
</table>

As it is seen in Table 1, the frequency of epistemic modality per 1000 words in the research articles written by non-native Iranian male and female writers was 12.96, and 10.71 respectively. It also, displays the total frequency of root modality in the applied linguistics research articles written by non-native Iranian male and female authors. According to Table 1, the average frequency of root modality was 4.38 in the applied linguistics research articles written by non-native Iranian male and 4.63 in female research articles.

As it is shown, the value of observed chi-square was significant at a level (p = 0.046) indicating that there was a significant difference between these two groups in their use of both epistemic and root modality. Thus the research 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 non-native Iranian male and female authors was rejected.

The results of the present study was in line with that of Nabifar and Pouyafar (2014) who found that non-native writers use more tentative or weaker devices than their native counterparts. But the results of the study went
against of Karkkainen's (1992) study who found that non-native speakers use fewer epistemic modalities. This is best shown by a chart bar as displayed in Figure 1.

It appears that male and female writers paid much more attention to how they project themselves into their texts by commenting on the possible accuracy or credibility of a claim, conveying an attitude towards both propositions and readers. That is to say, greater use of epistemic modality can be seen to "represent a very different style of argument, altogether more personal and intrusive, confronting and challenging the reader with a more explicitly committed and engaged stance and expecting more of the reader in working with the writer" (Tse & Hyland, 2008, p.1242).

3.2 Categorical Distribution of Epistemic Modality across two Corpora

Table 2 shows the results of chi-square test which compared the categorical distribution of epistemic modality across the research articles written by non-native Iranian male and female writers. Male writers employed 12.92 and female writers 10.64 instances of epistemic categories per 1000 words. As it is seen in Table 2, the difference between the mean of the distribution of these categories, across male and female authors was not statistically significant (p = 0.498 > .05).

According to the results, the research null hypothesis stating that there is not any significant difference in the type of epistemic modality between non-native Iranian male and female authors was not rejected. Regarding these subcategories, the result of the present study ran for Tse and Hyland’s (2008) study who found that men and woman academic writers did not differ in the use of interpersonal devices in order to project themselves into their texts by commenting on the possible accuracy or credibility of a claim, conveying an attitude towards both propositions and readers. But it went against Crismore et al. (1993) who found discrepancy in the use of these subcategories between their study groups. They attributed this overuse of interpersonal devices on the part of male writers to showing more interest in uncertainty and writer-reader interaction. This convergence in the frequency of the use of epistemic subcategories is shown in Figure 2.

As Figure 2 shows, non-native male Iranian authors tend to use more instances of epistemic modal subcategories than their female counterparts. The use of such subcategories makes it possible for the writer to both withhold from full commitment to a certain proposition and leave some opportunity for the reader to reject or accept or comment on the accuracy or inaccuracy of a particular argument raised by the writer. With this conception, writers prevented giving full commitments,
provided space for their readers to recognize alternative voices and viewpoints.

3.3 Categorical Distribution of Root Modality across two Corpora

As illustrated in Table 3, English articles written by non-native male writers contain 4.33 and English articles written by female writers had 4.57 instances root categories per 1000 words. The result of chi-square test was not significant at α level (p = 0.382 > .05) indicating that there was not any significant difference between these two groups in their use of root modal subcategories. Thus the research null hypothesis stating that there is not any significant difference in the type of root modality in the construction of persuasion between non-native Iranian male and female authors was not rejected.

Table 3

<table>
<thead>
<tr>
<th>Root Categories</th>
<th>Epistemic Modality per 1000 Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>Males/Females</td>
<td>0.382</td>
<td></td>
</tr>
<tr>
<td>4.33</td>
<td>4.57</td>
<td>16887</td>
</tr>
</tbody>
</table>

These mixed results in the use of root subcategories between native and non-native Iranian writers are best shown in Figure 3.

As Figure 3 shows, non-native Iranian male writers tended to use more instances of root modal verbs than their female counterparts. However, the employment of some root modal verbs namely would, can, may, couldn’t and could was more prevalent among non-native female authors.

3.4 Overall Distribution of Moods (Imperative and Indicative) across two Corpora

In order to find out whether non-native Iranian male and female authors differed in their use of both indicative and imperative moods in their research articles, in the field of applied linguistics, the total frequency of verb groups was counted in each corpus. As it is seen in Table 4 the rate of indicative mood in the research articles written by non-native Iranian male writers was 97.58 and in the research articles written by non-native Iranian female writers is 97.38.

Table 4

<table>
<thead>
<tr>
<th>Categories</th>
<th>Epistemic and Root Modality per 1000</th>
<th>Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Males/Females</td>
<td>0.704</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Indicative</td>
<td>97.58</td>
<td>97.38</td>
<td>16887</td>
</tr>
<tr>
<td>Total</td>
<td>2.41</td>
<td>2.61</td>
<td>16887</td>
</tr>
</tbody>
</table>
This table also shows the total frequency of imperative moods. As it is shown the rate of imperative mood in the research articles written by non-native Iranian male writers is 2.41 and in the research articles written by non-native Iranian female writers is 2.61.

The results of chi-square didn’t show any differences between these two groups in their use of both indicative and imperative moods. (P=0.704) Thus, the research null hypothesis stating that there is not any significant difference in the frequency of moods (both indicative and imperative) in the construction of persuasion between non-native Iranian male and female authors was not rejected. This is best shown by a chart bar as displayed in Figure 4.

The results of the present study supported the results obtained in Adejare (2014) who found that writers incorporated more instances of indicative moods in their writing. He justified his claim by declaring that in every day life activity, far more information is given than sought and fewer orders are issued than the information given or sought.

### 3.5 Categorical Distribution of Indicative Moods across two Corpora

Indicative mood examined in this study was of two main categories: declarative and interrogative. In order to find out whether non-native Iranian male and female authors differed in their use of declarative and interrogative in their research articles in the field of applied linguistics, the total frequency of verb groups was counted in each corpus.

As it is seen in Table 5, the rate of declarative mood in the research articles written by non-native Iranian male writers was 96.71 and in the research articles written by non-native Iranian female writers, it was 96.91.

Table 5

<table>
<thead>
<tr>
<th>Categories</th>
<th>Epistemic and Root Modality per 1000</th>
<th>Total Words</th>
<th>Sig (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males / Females</td>
<td>Males / Females</td>
<td>Males / Females = 0.149</td>
</tr>
<tr>
<td>Total</td>
<td>96.71 / 96.91</td>
<td>16887 / 14467</td>
<td></td>
</tr>
<tr>
<td>Declarative</td>
<td>0.87 / 0.47</td>
<td>16887 / 14467</td>
<td>0.149</td>
</tr>
</tbody>
</table>

Also the table shows the average frequency of interrogative moods that equals 0.87 in the research articles written by male and 0.47 in the articles written by female. The results of q-square test didn’t show any significant differences between two sets of corpora. (p>0.05). Thus the research null hypothesis stating that there is not any significant difference in the types both declarative and question in the construction of persuasion between non-native Iranian male and female authors was not rejected. This convergence is shown in Figure 5.

As Figure displays, both male and female academic writers tended to use more instances of declarative moods than interrogative ones. The results of the present study ran for the results obtained in Adejare (2014) who found that in academic written discourse far more information is given than sought.
4 Conclusion and Pedagogical Implications

As previously discussed one area of language use (whether written or spoken) that is likely to be influenced by the authors’ culture is the use of modal auxiliaries. Given this gap in the literature, this study built on two applied linguistics academic research articles written by non-native Iranian authors as the corpus of the study to find out whether there are differences in the frequency of these elements between these two groups. Chi-square tests confirmed mixed results. Statistical analysis showed significant differences in the frequency of overall modality (both epistemic and root) between the applied linguistics academic research articles written by non-native Iranian male and female authors. However, analyzing subcategories of epistemic and root modal subcategories didn’t reveal significant differences in the frequency of the use of these elements between two selected sets of data. Regarding mood subcategories (both indicative and imperative), investigated in the present study, significant differences in the distributions of these subcategories were not observed. Similarly, analyzing the indicative subcategories (declarative and interrogative) didn’t reveal significant differences between two sets of corpora. Thus, appropriate use of mood and modality was inevitable in any effective writing whether the writer was male or female. In fact, if an academic writer intends to establish a successful reader-writer interaction, he or she should draw on mood and modality elements appropriately in their texts. Thus, one principal implication of the present study for both native and non-native English prospective writers who entertain the idea of getting their English articles published in scholarly journals is to make effective uses of these elements in their articles regardless their gender. It is suggested that appropriate use of modals 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 the functions of these elements 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 modal auxiliaries 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 elements, along other writing skills, we can witness proficient writers who can publish scholarly books and articles in their related fields of study.

5 Suggestions for Further Research

Like other studies, this study has its own limitations. We limited our corpus of investigation to one field of study only. If we did have the ability to go beyond this limit and add two or three other fields of study, 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 articles to our corpus, we would, it is ensured, come across a better generalized conclusion about rhetorical behavior of both English male and female writers. Although this study investigated the effect of the author’s gender on the use of mood and modality in such soft disciplines as applied linguistics written by non-native Iranian male and female academic writers and came to a conclusion that the issue of gender is not that much influential in the incorporation of mood and modal categories, it brought to our attention some key research topics that can warrant separate future studies. Though the present study set 40 applied linguistics articles (20 written by non-native Iranian male writers and 20 written by non-native Iranian female writers) as its corpus, more articles could be added to the stock of the study to come up with amore generalisable conclusions. In future research projects, effort should be made to enlarge the corpus of the present study to consolidate the results obtained here. Also, disciplines other than applied linguistics could be the focus of the study. Since no significant differences in the distribution of the frequency of use of the mood and modal verbs elements were observed, other disciplines in hard fields

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(e.g., computing, and engineering) 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 mood and modal verbs in research articles. 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 these elements in their articles.

6 References

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