

# The different use of epistemic and root modalities in academic written discourse genres by Iranian authors , in accordance with the writers' identity (gender)

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**Abstract** : This research aimed at study the different use of epistemic and root modality between Iranian male and female authors , as the application of these modalities is different according to the identity (gender) of the authors. So the present study attempted to explore the issue of gender in academic written papers by analyzing the type and frequency of epistemic and root modality . To do this , this study applied Quirk (1985) model for analyzing and identifying these elements. 40 research papers in the field of applied linguistics were reviewed in this study. (20 written by non-native Iranian female and 20 written by non-native Iranian male authors ). This research examined whether there is a difference in the use of such modalities by male and female non-native Iranian authors. The significance of difference in the distribution of these elements in academic papers written by non-native Iranian female and male writers was assessed by statistical chi-square technique. The results of this study showed a significant difference in the overall distributions of these modalities but no significant difference was considered in the categorical distribution of epistemic and root modalities. Based on the findings of the current study , these elements of modality were useful for having effective writing and successful writer-reader interaction.

**Key words** : epistemic modality , root modality, writers' identity, academic papers

## 1 Introduction

Language is a dynamic and important tool for describing and transmitting knowledge and linguistic quality of academic papers is effective in improving writing skills of students (Halliday & Hasan, 1976, p.20). Writing is one of the principal responsibilities of academics and no one can overlook its importance in academic life, both EFL and ESL learners will especially find writing a significant, but a more task to master than oral skills (Marandi, 2003). Writing is definitely an important skill for many learners who want to further their education in order to be able to communicate and express themselves appropriately through written discourse ( Marandi, 2003). Since English, nowadays , is used as a academic lingua franca for international readership, thus conscious awareness of rules and conventions that govern written communication is central for effective academic written discourse ( Faghih & Rahimpour, 2009). One aspect of such language

awareness is the appropriate use of modalities that allow writers to establish the interaction with their readers. Expression of modality is an important aspect of persuasive and successful written discourse. Academic writing, as a demanding , undertaking ,becomes especially challenging when the text is to be written in a foreign language . according to Varttala (1999) , academic writing should be able to enhance the author's standing or credibility. Therefore the role of modality is critical in academic writing. Modality is a important technique for the expression of argument and opinion in academic writing. Academic papers include various genres such as summaries , research articles , theses and dissertations. Among these , research articles have been considered by analysts (Swales, 1990 ; Dahl, 2004 ; Martin, 2003 , Bhatia , 2006 , ). Also the study of discourse should be considered for processing developed written texts. In linguistics, discourse is used , mostly to refer to spoken dialogue and not to written discourse. But in common use,

this term refers to either spoken or written language which implies interaction and interdependency between speech and addressee or writer and reader, the context in which an utterance has occurred and interpretation of language in use which depends on the context of situation (Fairclough, 1992). Wodak (1996, as cited in Alaei, 2011) states that discourse refers to both written and oral texts interchangeably. For Mills (2004), discourse is defined according to the context in which a utterance is occurred such as education or religion. Therefore discourse is an extended piece of text, which has some form of internal organization, cohesion or coherence (Sinclair & Couthrald, 1975; Carter & Simpson, 1989, as cited in Mills, 2004). So what is critical in discourse is the relationship between text or utterance and the situation in which it occurs (McCarthy, 2001). From these definitions, it is evident that discourse analysis is a vast and ambiguous field for which a wide variety of definitions by different theorists exist. Stubbs (1983) believes that discourse analysis consists of attempts to study the organization of language above the sentence and to study larger linguistic units, such as conversational exchanges or written texts. Discourse analysis is also concerned with language in use in different social context. Therefore it should be mentioned that, discourse analysis is more concerned in the domain of Systematic Functional Linguistics (SFL). Systematic functional linguistics is a social semiotic approach to language. Within systematic functional linguistics (SFL), language is seen as being organized around three broad purposes or metafunctions (Hyland, 2005). According to Halliday (1985) language is metafunctionally organized and all languages have three kinds of semantic components. All languages have resources for constructing experience (the ideational component), resources for enacting human' diverse and complex social relations (the interpersonal component), and resources for enabling these two kinds of meanings to come together in coherent text (the textual function) (Halliday & Hasan, 1985). Among these components, the interpersonal function is represented by

modality. According to Halliday (1973), interpersonal function is the expression of speaker or writer's attitudes and judgments as well as his predictions (modality). Figueiredo (2010) further explains the interpersonal meaning and mentions that interpersonal meanings are realized by the systems of modality. Modality is the relationship established between the text's author and her/his representation.

### *1.1 Epistemic and root modality*

Quirk et al. (1985, p.219) claims that modality can be defined as "the manner in which the meaning of a clause is qualified so as to reflect the speaker's judgment of likelihood of the proposition it expresses being true." Epistemic modality is concerned with "the necessity or possibility of an inference drawn from available evidence" (Papafragou, 2000, p. 3). Root modality by focusing on hearer or reader, is concerned with the degrees of obligation and inclination, while exchanging goods and services as a proposal, we are arguing whether something DO or DO NOT do it (Quirk, 1985).

### *1.2 Epistemic meaning of modal auxiliaries according to Quirk et al. (1985)*

Must : expresses a conclusion on the basis of available evidence.

May/Might : denotes the possibility of a given proposition being or becoming true, expresses the actual possibility.

Can/Could : expresses the potential possibility.

Should/Ought to : the epistemic meaning of should/ought to is prediction.

Have (got) to : this form is rarely used in an epistemic meaning but it is generally, one of the necessary modals.

Will/Would : denotes a high degree of confidence in what we guess to be true.

### 1.3 *Root meanings of modal auxiliaries according to Quirk et al. (1985)*

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

### 1.4 *significance of the study*

The relationship between language and gender will always remain an open area for discussion as it deals with social human beings which are complex. More complex is the matter of gender with two subgroups of male and female. Their production will be similar in some aspects and unique in others. However most of the previous studies on gender, as far as the researcher knows, have been done on oral communication, and academic written discourse has received little attention. Among academic written genres, research articles can be considered as a medium through which knowledge building and dissemination take place. To facilitate the reading and /or writing of scientific research articles, both native and non-native speakers of English need to be aware of the rhetorical organization conventionally used in their field of academic interest (Kanoksilapatham, 2005, p.270).

Research questions :

1. Are there any significant differences in the type of epistemic and root modalities according to the writer's gender by non-native Iranian male and female writers in their research articles?

2. Are there any significant differences in the frequency of the use of epistemic and root modalities according to the writer's gender by non-native Iranian male and female writers in their research articles?

Hypothesis :

1 . There are not any significant differences in the type and frequency of the use of epistemic and root modalities between non-native Iranian male and female authors?

2 . There are significant differences in the type and frequency of the use of epistemic and root modalities between non-native Iranian male and female authors?

## 2 Method

40 articles which were written by non- native Iranian authors (20 written by Iranian male authors and 20 were written by Iranian female authors) , were chosen to be investigated in this study. These academic research articles were in the field of applied linguistics. These articles were published between 2000 to 2013 and provided the necessary data for comparing the type and frequency of modalities which were used by non- native Iranian male and female authors. All these articles were stored in computer and reviewed for determining the type and frequencies of these elements , used by male and female authors. The articles were in the field of applied linguistics , and the reason for selecting applied linguistics field is that , as this field relates with humanities and social behavior of humans, so it can include more modalities than other fields (Duszak, 1997). All the articles were examined exactly about including the epistemic and root modalities. Also some manual and context-sensitive analyses had been implemented in this study. Both quantitative and qualitative techniques were carried out and the differences and similarities between non-native Iranian male and female authors in the use of epistemic and root

modalities were examined. The Quirk et al. (1985) model of epistemic and root modalities was used for investigating the type and frequency of these elements. Then the inferential statistics were used to determine the difference between two groups of articles written by non-native Iranian male and female authors. the variables of this study are nominal and chi-square with a significance of  $P=0.05$  was used to indicate the significant differences among the frequencies of these elements between male and female writers.

### 3 Discussions and Data analyses

#### *Overall Distribution of Epistemic and Root modalities*

For researching about the difference in the use of epistemic and root modalities between non-native Iranian male and female authors , the frequency of these elements per 1000 words was determined as it is shown in table 1. Table 1 shows chi-square test which was used for comparing the overall distribution of epistemic and root modalities in research articles written by non-native Iranian male and female authors.

*Table 1 : The chi-square test to compare the Overall Distribution of Epistemic and Root Modality across Academic research articles Written by non-native Iranian male and female authors*

Categories	Epistemic and Root Modality per 1000		Total Words		Sig (p-value)
	Males	Females	Males	Females	
Total Epistemic	12.96	10.71	16887	14467	Males/ Females = 0.046
Total Root	4.38	4.63	16887	14467	

According to this table , the frequency of epistemic modality per 1000 words was 12,96 for male authors and 10,71 for female authors. Also the frequency of root modality in the articles written by non-native Iranian male and female authors was respectively 4,38 and 4,63 . The value of chi-square was  $P= 0.046$  . This value shows a significant difference between these two groups in their use of epistemic and root modalities. So the research first hypothesis which stated that there is not any significant difference in the frequency of epistemic and root modalities between non-native Iranian male and female authors was rejected and the second hypothesis which stated that there is significant difference in the frequency of epistemic and root modalities between non-native Iranian male and female authors was accepted.

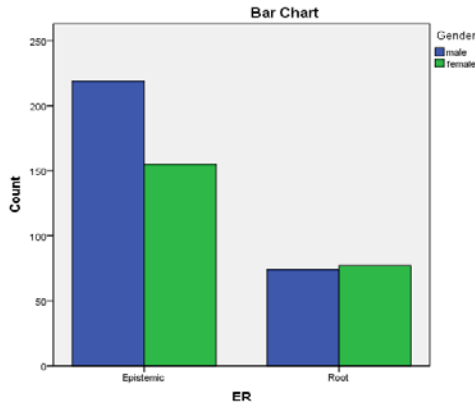


Figure 1. Overall distributions of epistemic and root modality.

It is evident that male and female authors paid attention to the possible accuracy of a claim and conveying the readers by using proper modalities. Using of modalities indicates a different style and it is more personal and intrusive. (Tse&Hyland, 2008, p.1242).

*Categorical Distribution of Epistemic Modality*

Table 2 shows the results of chi-square test for the categorical distribution of epistemic modality in the two groups of male and female authors. Male and female writers used respectively 12,92 and 10,64 elements of epistemic categories per 1000 words . It is clear that, the difference between the mean of the distribution of these categories was not statistically significant ( $P=0,498 > 0,05$ ).

Table 2

*The chi-square test to compare the Categorical distribution of Epistemic Modality across Academic research articles Written by non-native Iranian male and female authors*

Epistemic Categories	Epistemic Modality per 1000		Total Words		Sig (p-value)
	Males	Females	Males	Females	
	12.92	10.64	16887	14467	Males/Female s = 0.498

So the research first hypothesis which stated that there is not any significant difference in the type of epistemic modality between non-native Iranian male and female authors was accepted and second Hypothesis, in the part of the type of these modalities, which stated that there is significant difference in the type of epistemic modality between non-native Iranian male and female authors was rejected. The result in the frequency of the use of epistemic subcategories is shown in Figure 2.

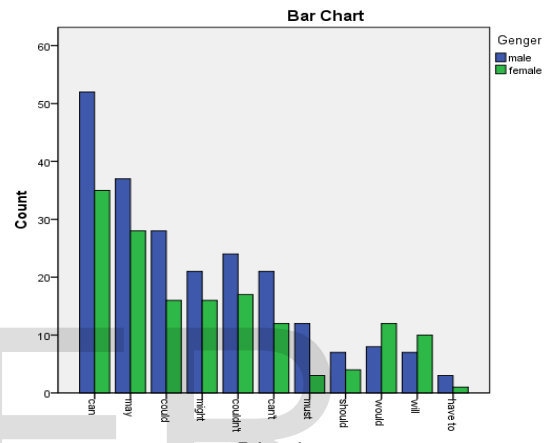


Figure 2. Categorical distribution of epistemic modality

Table 3

*The chi-square test to compare the Categorical distribution of Root Modality across Academic research articles Written by non-native Iranian male and female authors*

Root Categories	Epistemic Modality per 1000		Total Words		Sig (p-value)
	Males	Females	Males	Females	
	4.33	4.57	16887	14467	Males/Female s = 0.382

According to this table 4,33 elements of root categories were included in the articles written by non-native Iranian

male authors and 4,57 elements of root categories were selected by female authors in their articles. The result of chi-square test was not significant ( $P= 0,382 > 0,05$  ). This showed that there was not any significant difference between these two groups of male and female in their use of root subcategories. So the research first hypothesis which stated that there is not any significant difference in the type of root modality between non-native Iranian male and female authors was accepted and second the hypothesis which stated that there is significant difference in the type of root modality between non-native Iranian male and female authors was rejected. The result in the frequency of the use of root subcategories is shown in Figure 3.

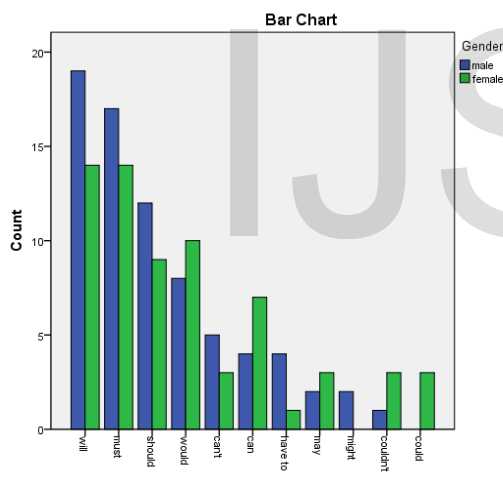


Figure 3. Categorical distribution of root modality

#### 4 Conclusion

As it is mentioned , one aspect of language use , is the application of epistemic and root modalities. This study was based on applied linguistics academic research articles which were written by two groups of non-native Iranian male and female authors. The purpose was to determine whether there are differences in the frequency and type of

these modalities between two groups of male and female authors. chi-square test was used to approve the results. According to the obtained results, statistical analysis indicated significant differences in the frequency of overall distribution of epistemic and root modalities across applied linguistics academic research articles written by non-native Iranian male and female authors. By analyzing the categorical distribution of epistemic and root modalities, it is revealed that, there were not significant differences in the use of epistemic and root modal subcategories between male and female authors. So using of these modalities is essential for having effective writing and a successful writer-reader interaction.

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