

**A Metadiscursive Investigation of English and  
Persian Research Articles in the Field of  
Architecture**

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## ABSTRACT

This study investigated the employment of interactional metadiscourse markers in English and Persian research articles published in the field of architecture. Drawing on Hyland's (2005a) interpersonal model of metadiscourse markers, the present study explored the use of hedges, boosters, attitude markers, self-mentions, and engagement markers in a corpus composed of the post-method sections of 100 articles (50 English and 50 Persian) in the field of architecture. The compiled corpora were analyzed through Wordsmith (6<sup>th</sup> version) concordance program. The similarities and differences between the two sub-corpora were examined in light of the most frequently used metadiscursive linguistic items and the performed functions. Overall, statistically significant differences were found between the frequency of interactional metadiscourse markers used in the English and Persian architecture articles. From the grammatical and functional perspectives, the two groups of articles were shown to be different in the employment of attitude markers and self-mentions and similar in the employment of hedges, boosters, and some features of engagement markers. The results of the study also provided a list of interactional bundles frequently used in the English and Persian architecture articles. The rhetorical similarities and differences were further discussed in light of international and national contexts of publication and differences in the educational and cultural values of the English-speaking and Persian communities of academic writers. Finally, the research concluded with some pedagogical implications for English for Academic Purposes (EAP) teachers and material developers in this field.

**Keywords:** metadiscourse, interactional metadiscourse, genre, inter-cultural rhetoric.

## ÖZ

Bu çalışma, genel olarak, İngilizce ve Farsça araştırma makalelerinde etkileşimsel üstsöylem belirteçlerinin kullanımını araştırmaktadır. Mimarlık alanında yazılmış 50'si İngilizce dilinde, 50'si Farsça dilinde olmak üzere toplam 100 araştırma makalesinden bir derlem oluşturulmuş; bu derlem, Hyland (2005a) tarafından önerilen üstsöylem belirteçlerinin sınıflandırılması modeli temel alınarak ve Wordsmith (6. versiyon) tarama yazılımı kullanılarak analiz edilmiştir. İngilizce ve Farsça dillerinden oluşan iki alt derlemde kullanılan üstsöylem belirteçleri arasındaki benzerlikler ve farklılıklar, kullanım sıklıkları ve yerine getirdikleri işlevler açısından karşılaştırılmalı olarak incelenmiştir. Genel olarak, İngilizce ve Farsça mimarlık makalelerinde kullanılan etkileşimsel üstsöylem belirteçlerinin sıklığı arasında istatistiksel olarak anlamlı farklılıklar bulunmuştur. Dilbilgisi ve işlevsel açılarından, iki derlem grubunda, tutum belirteçleri ('attitude marker') ile ben/biz dilinin ('self-mentions') kullanımında farklılıklar olduğu; buna karşın, kaçınmaların ('hedges'), vurgulayıcıların ('boosters') ve tutum belirteçlerinin kimi özelliklerinin kullanımı açısından ise benzerlikler olduğu görülmüştür. Çalışmada ayrıca İngilizce ve Farsça dilinde yazılmış olan mimarlık makalelerinde sıkça kullanılan etkileşimsel sözcük öbeklerine de bakılmıştır. Tespit edilen retorik benzerlikler ve farklılıklar, uluslararası ve ulusal yayın bağlamları ile akademik araştırma yazılarını yazan yazarların ait oldukları İngilizce ve Farsça konuşan toplulukların eğitimsel ve kültürel değerlerindeki farklılıklar ışığında tartışılmıştır. Çalışmanın sonunda, Akademik Amaçlı İngilizce (EAP) dersi veren İngilizce öğretmenleri ile ders materyali geliştiren kişilere dönük olarak hazırlanmış olan ve etkileşimsel üstsöylem belirteçlerinin

kullanımına ilişkin bazı pedagojik uygulamaların yer aldığı modüler bir ders materyali önerisi sunulmuştur.

**Anahtar Kelimeler:** üstsöylem, etkileşimsel üstsöylem, tür, kültürlerarası retorik.

## **DEDICATION**

I dedicated this dissertation to my parents.

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## LIST OF ABBREVIATIONS

CR	Contrastive Rhetoric
EAP	English for Academic Purposes
ESP	English for Specific Purposes
ELT	English Language Teaching
FL	Foreign Language
IR	Inter-cultural Rhetoric
IMMs	Interactional Metadiscourse Markers
IMRD	Introduction, Method, Result, Discussion
L1	First Language
L2	Second Language
MDMs	Metadiscourse Markers

# Chapter 1

## INTRODUCTION

This chapter starts with the explanation of background of the study, which is followed by discussing the problems in the field. In the next section, the aim of the study and research questions are presented. Later, the significance of the study is explored, which is followed by the definition of key terms used throughout the research.

### 1.1 Background of the Study

What does it mean to learn a discipline? It is no exaggeration to say that finding an answer to this question would define what English for Academic Purposes (EAP) really is and what goals it follows. Recently many scholars have found the answer in social views towards learning a discipline (Ädel, 2006; Connor, 2011; Hyland, 2010; Swales, 1998). According to the social constructivist view, learning a discipline goes beyond acquiring the content knowledge and developing study skills; rather it implies developing an understanding of knowledge construction practices and discourse conventions that are valued in a discipline. Social constructivists argue that each discipline is distinguished by its specialized content areas, its specific views towards the world, and the methodologies it follows to find solutions for the problems (Hyland, 2009). Those who learn a discipline are required to use discipline-specific persuasion and argumentation methods and substantiation forms in their academic writings. In other words, knowledge construction in a discipline is to be committed to the conventions and agreements among the members of that community and to get induced to the disciplinary culture.



In order to clarify how social constructivism theory affected EAP scholars' views towards the real meaning of learning a discipline, it is better to first discuss what is perceived as knowledge construction in this theory. Social constructivists suggest that our perception about the world is not the true reflection of what really happens in the world; rather it is an interpretation of the existing truth and that our interpretation stems in the culture, society, and period we belong to. The academic knowledge and scientific arguments are no exception. Therefore, knowledge construction is always tied up with the assumptions scientists bring to the real world problems they are involving in (Hyland, 2009).

The academics' perception of the world is filtered by the theories they believe in, the language they use, and their social experiences with others in the academia (Kuhn, 1970). These academics correspond to the beliefs of their social groups and are committed to the principles and convention of their community. Those academics who belong to a community believe in the same theories, follow the same observational methods to examine real world phenomena, and take conventional steps to produce agreement. To meet the conventions of community members and to persuade the audience are at the heart of knowledge construction (Hyland, 2006, 2009).

The conventions are set by the expert members of each academic community and include linguistic features and rhetorical practices (Hyland, 2000, 2003). These rhetorical features determine the way writers express ideas and frame arguments which are most convincing to the readers and the way readers integrate linguistic and contextual features to reinterpret the intended meaning of the writer (Hyland, 2000, 2009). In other words, these conventions and norms connect the text, writer, and reader.

The notion of community also raises the issue of group membership and the insider's view in academic societies. Hyland (2009) suggests that academic discourses are used not only to construct knowledge within an academic society, but also to enhance the prestige and status of a discipline and the way it is recognized by the outsiders. Similarly, Swales (1990, 1998) puts emphasis on the centrifugal nature of academic communities, discussing that the community members pursue community-set goals, employ specific genres to share those goals, and employ acronyms, vocabulary items and rhetorical patterns which are specific to their community. Thus, familiarity with the socio-rhetorical and genre principles of the community is among the main conditions of being a 'member' of that community and producing texts which meet the expectations of the academics of the discipline.

The concept of 'discourse' is another key term used by social constructivists to address the real meaning of learning a discipline (Hyland, 2009b). Participating in a discourse, the members find the opportunity to build up their community and interact with others. In academic contexts, the academic discourse acts as a platform for the interaction between individuals with the purpose of illustrating academic reports and findings. It is directly influenced by the participants' academic beliefs, values and judgments, the methodological principles they tend to use and text organizational patterns they are willing to follow (Hyland, 2009a; Swales, 1990). It must be noted that academic discourse is not a set of formal regularities or a solid representor of mental processes of a writer whose main aim is to convey his/her intended message to the reader. The social constructivists value the interactional and social aspect of language use (Swales, 1990). For them, being accepted as a member of a community through being committed to the norms, values, and conventions is the key for being successful in the meaning construction process (Carter, 1990; Hyland, 2009b). Thus, it can be stated

that the notion of academic discourse gives identity to the academic culture. In this regard, Becher and Trowler (2001) argue that a discourse community should be viewed as an academic tribe with all its membership rules, conventions, and solidarity. In fact, each academic tribe has its own academic culture, also called the professional-academic culture (Atkinson, 2004; Holliday, 1994). To learn a discipline is to be accepted as a member in these academic tribes. Thus, the students and academics are required to develop specialized discourse competencies to be able to use appropriate persuasive and argumentative practices which sound convincing to the other members of the community.

However, the solidarity of academic discourse communities can be affected by differences in the linguistic backgrounds of their members. The issue of culture in the academic context is not limited to disciplinary cultures and the rhetorical similarities and differences between them. In fact, academic cultures in some cases overlap with national cultures of the community members (Atkinson, 2004; Holliday, 1999). People from different first language backgrounds may differ in their knowledge construction preferences and the experiences they gain and expectations they have from different academic contexts or genres (Hyland, 2006). Ballard and Clanchy (1991) argue that individuals from different linguistic backgrounds have different views towards knowledge construction process. They further exemplify that while in Western countries students are encouraged to challenge the traditional wisdom and express their own viewpoints, Eastern cultures adopt more conservative stance towards the existing body of knowledge and have more tendency towards imitation and memorization policies. In this regard, Hyland (2006) discusses that people from different ethnolinguistic cultures not only can take different stance towards knowledge construction, but can also be different in (1) linguistic proficiencies and intuitions

about language, (2) learning experiences and classroom expectations, or may have different (3) sense of audience and self as a text producer, (4) preferences of organizing texts, (5) writing and reading processes, and (6) understanding of text uses and the social values of different text types. Thus, gaining a deeper view regarding the influence of big cultures (Atkinson, 2004; Holliday, 1999) on the individual's expectations about academic communications is a crucial factor in understanding the problems non-native students and scholars may confront with in the process of learning their preferred discipline, being a part of academic communities, and sharing their knowledge with other members of those communities (Hyland, 2005a).

Scholars in the field of contrastive rhetoric seek to investigate the differences between the rhetorical patterns used by L1 and L2 writers across different academic genres and to study the influence of national cultures on the text organization pattern preferences (Hinds, 1980) and audience expectation issues (Connor, 2002; Matsuda, 1997). In recent years, the traditional, structuralist approach to contrastive rhetoric has been replaced by social constructivist views towards writing, and apparently discussions on the concepts of audience expectations, purposes and norms of discourse community have been extensively discussed in this field. Atkinson (2000) notes that the modern contrastive rhetoric, or what is called by Connor (1996, 2002) as inter-cultural rhetoric, has shifted its attention from dealing with native English speakers' views towards what is right or wrong to recognizing the sources of differences between the texts written by native speakers who are from different linguistic backgrounds. Under the influence of inter-cultural rhetoric studies, the meaning of learning a discipline has gone beyond learning the study skills and technical vocabulary items, and even beyond learning the disciplinary culture. In fact, the globalized world is pushing the students and academics, whether native or non-native speakers of English, to raise their awareness

about the building blocks of their own culture and the target language to be able to develop their ‘inter-cultural competence’ (Burwitz-Melzer, 2001; Byram, 1997; Byram & Fleming, 1998; Zarate, Gohard-Radenkovic, Lussier & Penz, 2004) and ‘to operate between languages’ (MLA, 2007).

A question which may raise here is how researchers in the field of inter-cultural rhetoric and academic discourse analysts identify the rhetorical patterns and linguistic features which are specific to each of the disciplines or each of the languages? What are the methods they follow to explore the cross-disciplinary and cross-cultural differences of the texts? The answer lies within the principles of genre analysis.

Genre analysis is considered one of the main methodologies used to investigate the influence of both disciplinary and ethnolinguistic cultures on the writers’ textual behaviors throughout the text (Hyland, 2012). The term ‘genre’ is used for grouping texts which share the same conventional forms and are guided by similar social rules and interactional principles. The notion of ‘genre’ is developed around the idea that understanding and producing specific kind of texts would be easier if the members of a community can recognize the similar features of those texts and if they can draw on their repeated experiences with these texts (Bhatia, 2002, 2004; Swales, 1990, 1998). Familiarity with the conventional and linguistic forms of a specific genre helps the writer to anticipate the expectations of the potential readers more easily. At the same time, it assists the reader to better find the writer’s clues in the text and reinterpret his/her intended meaning (Hyland, 2003, 2005a, 2006).

One of the fundamental theories in studies related to genre studies is Bakhtin’s (1986) idea of ‘dialogism’ which assumes that discourses, written or spoken, are dialogic.

Writing is dialogic since the writer not only needs to mentally interact with the potential readers of his/her product as well as other texts in the genre, but also is required to draw on other texts and involve the voice of other authors in the same genre. The notion of inter-textuality in genre analysis also arises from the same idea that a text is committed to articulate multiple perspectives; it contains fragments of prior texts and is itself a part of future texts (Hyland, 2007b; Kristeva, 1980). It can be stated that the emphasis of the concept of genre on similarities and inter-textual relations between the texts has changed this concept to a valuable tool to study the social and rhetorical aspects of the academic texts.

Needless to say, grouping texts into genres provides appropriate opportunities for analysts to study the generic language pattern constraints which are imposed by different contexts (Hyland, 2003). According to Swales (1990), genres vary along a number of different factors such as complexities in persuasion purposes, the degree of using prepared rhetorical patterns, and the characteristics of the addressed language community. Thus, they are spread along a continuum, with some texts close to core genre samples and some others located at more marginal districts. Genre theorists use these similarities and differences to classify countless number of texts into genres. In order to do so, these analysts first detect the repeated specific linguistic and rhetorical features of each genre and then use those features to classify the texts accordingly. In other words, genre analysts may focus on different linguistic devices to study and analyze genres (Flowerdew, 2012). In some studies, texts are analyzed based on the sequence of moves or stages taken by the writers (Bhatia, 2012; Lim, 2011; Loi, 2010; Swales, 1990; Tessuto, 2015). In other studies, analysts may focus on the employment of specific linguistic devices such as lexical priming (Hoey, 2004, 2005) and metadiscourse markers (Bogdanovič, 2014; Hyland, 2004, 2005a; Kawase, 2015;

Mauranen, 2001, 2003; Vande Kopple, 1985) to detect the preferred rhetorical features and conventions of discourse communities in different genres.

Genre analysts such as Flowerdew (2012) and Hyland (2009) argue that studying the employment of linguistic devices such as metadiscourse markers have provided valuable information regarding the discursive characteristics of different genres (Flowerdew, 2012; Hyland, 2009). The findings of genre analysis research in the last three decades have also revealed the key role of metadiscourse studies in identifying the common rhetorical patterns and conventional forms in different academic genres (Cao & Hu, 2014; Estaji & Vafaeimehr, 2015; Hu & Cao, 2015; Khedri, Heng & Ebrahimi, 2013). Vande Kopple (1985) offers one of the earliest definitions of metadiscourse markers and introduces them as the key aspects of genre analysis since they show how the writer uses linguistic features to keep the coherence of the text, meet the expectations of the reader and guide the reader to reinterpret his/her intended message. Later, Hyland (2004, 2005a) defines metadiscourse markers as “the self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) to express a viewpoint and engage with readers as members of a particular community” (Hyland, 2005a, p. 37). He further asserts that working on metadiscursive elements clarifies the interpersonal aspect of academic writing according to which the writer deals with both ‘interactive’ and ‘interactional’ resources in the text. According to his interpersonal model, the interactive features including transition markers, frame markers, endophoric markers, evidentials, and code glosses signify the writer’s assumptions about the reader’s level of knowledge, and his or her rhetorical expectations and assist the writer to organize the text in a coherent way. The interactional devices including hedges, boosters, attitude markers, engagement markers and self-mentions, on the other hand, focus on the interactional and evaluative

aspect of the text and display the writer's persona and how s/he demonstrates his or her solidarity with the goals and conventions of the community and the extent to which the reader is involved in the text. In discussions on the theoretical bases of his model, Hyland (2005a) highlights three basic principles. He argues that metadiscourse markers are essential parts of communication process, not the secondary elements used to support propositional contents. Moreover, they are internal to the context and assist the writers to organize the discourse and to connect the external experiences as a series of events. Finally, all metadiscourse markers, even the textual markers, are interpersonal as they facilitate reader-writer interaction and guide the readers to understand the writer's stance and intentions.

In sum, the theoretically rich basis of the concept of genre, and the comprehensiveness of the notion of metadiscourse for investigating the social and interactional aspects of the text provide appropriate opportunities for the researchers in the fields of discourse analysis and inter-cultural rhetoric to shift their attention to relatively overlooked contexts of academic genres and to investigate the organizational patterns and persuasive ways the writers from different first language backgrounds follow. Genre analysis techniques and tools assist the researchers to identify differences and similarities between the preferred rhetorical patterns used by the writers who have different linguistic backgrounds.

Among the non-native discourse analysts who have recently been involved in genre analysis and discursive studies are the community of Iranian second language researchers and discourse analysts who have conducted different cross-cultural and cross-disciplinary studies to reveal the effects of Iranian culture and Persian language on the academic texts written by Iranian academic writers' in English (Abdollahzadeh,



2011; Attaran, 2014; Farzannia & Farnia, 2016; Pooresfahani, Khajavi & Vahidnia, 2012) and in Persian (Faghih & Rahimpour, 2009; Keshavarz & Kheirieh, 2011; Salar & Ghonsooly, 2016; Taki & Jafarpour, 2010; Zarei & Mansoori, 2011). A brief overview of the recent contrastive rhetoric studies reveals that the number of intercultural studies, with a focus on the comparison between the rhetorical patterns of Persian and English languages, has specifically increased in the last ten years. The reason lies in the fact that the Iranian academic society is a truly dynamic society whose members from different academic fields make great efforts to hold on with the most recent research and technologies all around the world and to be involved in conducting academic research and knowledge construction in different academic fields. Activities such as including different courses of 'technical English' to help the students improve their academic English skills in their own disciplines, as well as publishing around thirty Iranian leading academic journals and many other scientific local journals in English signify the willingness of the Iranian researchers and academic communities to be recognized as active participants in different international academic societies.

Furthermore, the presence of a great number of Iranian students in different international universities all around the world can be considered as the second driving force for the Iranian second language analysts to study the discursive features of academic genres. According to the official reports published by Iranian Ministry of Science, Technology, and Research (MSRT) in 2017, the population of more than 60,000 of Iranian students are studying in different international universities all around the world. However, the unofficial reports estimate that up to 120,000 Iranian students are studying far from their home country. According to the statistics, the main destinations of these students are countries like the US, the UK, and Germany. Yet,

according to the same report issued by the Ministry of Science, Technology, and Research (MSRT), thousands of Iranian students are currently studying in expanding circle (Kachru, 1985) countries, such as Malaysia, Turkey, and other countries such as Cyprus. It is worth noting that the Eastern Mediterranean University (EMU) in North Cyprus alone is hosting more than 1200 Iranian students who are studying in different fields of engineering, business and finance, pharmacy, tourism, and architecture.

The willingness of an enormous number of Iranian academics and university students, inside or outside the borders of the country, to be accepted as a member in their academic communities and be able to share their knowledge and academic experiences with the other members, has urged the Iranian researchers to consider the needs of this society. Thus, within the last fifteen years, Iranian applied linguists and discourse analysts, along with a group of second language teaching researchers, have conducted various inter-cultural rhetoric research and genre analysis to explore the discursive differences used in different academic genres written in two languages of Persian and English (Faghih & Rahimpour, 2009; Salar & Ghonsooly, 2016; Taki & Jafarpour, 2010; Zarei & Mansoori, 2011). Apparently, such studies can contribute enormously to the understanding of the social constructs of academic discourse communities and can reconstruct the meaning of learning and ‘doing a discipline’ (Hyland, 2009) for thousands of Iranian students and academics who intend to be successful members in their academic communities.

## **1.2 Statement of the Problem**

Within the last twenty years, academic discourse analysts have conducted various studies to explore the rhetorical conventions and characteristics of different disciplines in the field of social and humanistic sciences such as applied linguistics

(Abdollahzadeh, 2011; Bahrami, 2012; Başturkmen, 2009; Faghieh & Rahimpour, 2009; Lim, 2013; Sheldon, 2009), social sciences (Allami, 2013; Khedri, 2013; Salar & Ghonsooly, 2016), business (Hyland & Tse, 2004; Pooresfahani et al., 2012) or natural sciences such as chemistry (Taki & Jafarpour, 2012), biology, different engineering fields (Estaji & Vafaeimehr, 2015; Zarei & Mansoori, 2012), or even dentistry (Başturkmen, 2012). However, due to the diversity of disciplines, there are still many overlooked research areas in the literature, such as geography, history, geology, and meteorology.

One of the fields which is widely ignored in genre analysis studies is architecture and its sub-categories, including interior design, urban design, and landscape and urban planning. There are very few studies in the literature which have investigated the rhetorical patterns and discursal features of academic genres of textbooks, theses, and articles in the field of architecture. Considering the fact that many of the basic textbooks and leading journals and magazines in the field of architecture and its sub-categories are published in English, efforts must be taken to study the rhetorical features of such texts in English and to explore the expectations and conventions of the community of English architecture scholars.

The related literature does not provide enough information regarding the rhetorical conventions and socializations norms of English discourse community of architects nor does it provide information regarding the effects of the writers' first language and culture on their preferred rhetorical conventions and thought patterns in this specific field. In fact, to the best of the researcher's knowledge, architecture and its sub-fields have not been the focus of any inter-cultural rhetoric study in the literature. Since the national cultures of individuals determine the way they see the outside world and shape

the kind of knowledge and expectations they bring with themselves to the text (Hyland, 2006), the researcher expects to gain deeper perspectives towards the differences and similarities between English-speaking and Persian writers.

In addition, unawareness of the majority of non-native English-speaking university students and academics towards the differences in the preferred rhetorical patterns, sense of audience, organizational methods across different disciplines and languages has been known as one of the major sources of problem in academic writing in English. Iranian students are no exception. Their problems in academic writing in English have encouraged many Iranian researchers to focus on identifying the differences between the rhetorical patterns of English and Persian texts in different engineering or humanistic fields (Abdollahzadeh, 2011; Attaran, 2014; Zarei & Mansoori, 2011). Architecture is one of the disciplines which have not received enough attention in this regard.

Moreover, lack of knowledge about the rhetorical characteristics of academic genres which are used in the fields of architecture is a true disadvantage for the Iranian academic society. The prominent place of Iranian architecture in the world and the need to share the results of the Iranian architects' research with those who are interested in the 'art of architecture' in Iran necessitate the Iranian authors who write in English to explore the genre-specific, discursive, and rhetorical patterns of both English and Persian texts in architecture. This will also raise the awareness of the Iranian university students and academics of the characteristics of (1) Persian academic texts in architecture, (2) English academic texts in architecture, and (3) the similarities and differences between the two. There is no doubt that the findings of such research will equip the Iranian students and researchers with effective linguistic

and discursive tools to successfully present and share their academic experience and knowledge with the local and international members of the community of architects.

### **1.3 Aim of the Study**

Accordingly, in the present study, the researcher intends to explore the similarities and differences between the rhetorical features of English and Persian research papers published in the field of architecture through investigating the interactional metadiscourse markers used in the texts.

To this aim, the following research questions will be investigated:

1. Is there any statistically significant difference between English-speaking and Persian academic writers in their use of interactional metadiscourse elements in architecture articles?
2. How do English-speaking and Persian architecture articles differ in the use of interactional metadiscourse markers in the post-method sections?
3. What are the most frequent interactional lexical bundles identified in the post-method sections of English and Persian architecture articles?

### **1.4 Significance of the Study**

Adopting the theory of social constructivism and developing the concept of genre have led to significant developments in discourse and genre analysis studies in the last twenty years. Studies on the characteristics of academic discourses provide insights into the knowledge construction practices and discourse conventions that are valued in a discipline. Research has focused on exploring the discursive patterns, the interpersonal relationships and argumentation methods which are preferred by the community members in each specific discipline. However, there are still disciplines such as architecture whose rhetorical practices and inside-community norms and values have remained unknown. Therefore, the present study focuses on the analysis

of the rhetorical features of research papers of architecture. It is believed that such investigations will contribute to academic genre analysis literature since they raise the the researchers' awareness of the knowledge construction practices, rhetorical features, and persuasion methods which are conventionally used by the academic community of architects.

The inter-cultural investigation of architectural research articles written in English and Persian languages can contribute to the influential studies of Mauranen (1993b), Connor (1996, 2002, 2004) and others into cross-cultural discourse variations and differences between the metadiscursive features and interpersonal practices of the individuals from different first language backgrounds. Inter-cultural rhetoric studies can make significant contributions to second language teaching studies through clarifying the effects of first language on the students' academic writing performance. Moreover, such studies will provide deeper insights into the cross-cultural pragmatic failure of the non-native students or academics which in many cases radically affect the quality of their writing.

In practice and from a narrower point of view, the results of this study will raise the awareness of university students and academics in the field of architecture about the expectations of their local and international readers and the preferred methods of substantiation and persuasion, specifically in the genre of academic research articles. The findings of this study will show them how to become a successful member of the academic community of architects through producing a coherent and reader-friendly text which allows them to express their stance and affective attitudes to the arguments in an appropriate way.

The results of academic genre analysis studies will contribute significantly to EAP and ESP material developers, especially in teaching English writing, by clarifying the key role that interpersonal discourse markers play in the organizational, social, and cultural aspects of academic genres. In fact, explicit or implicit teaching of metadiscourse markers and highlighting the social aspects of writing and the rhetorical conventions dominant in different academic fields, rather than insisting on learning the grammatical structures and registers of a discipline, can help the non-native English-speaking writers to produce effective and appropriate writings which meet the expectations of their international readers (Hyland, 2005a). Moreover, the compiled corpus of a specific academic genre, such as research articles, in a discipline is a rich source of authentic material for EAP and ESP students and teachers. The corpus provides students with a variety of examples of the target genre and assist them to better understand the frequently used metadiscourse features, their contexts and functions. Teachers can also use different corpus-informed awareness-raising tasks, authentic reading tasks, and teaching vocabulary and writing exercises to underscore the key role metadiscourse markers play in creating writer-reader relationships in the text and developing the organization of the texts.

Contribution of inter-cultural rhetoric studies is not limited to English language students, teachers, and researchers. The language analysts and teachers of other languages, in this case Persian, can also benefit from the investigation of metadiscursive elements and rhetorical features of the texts written by the native speakers of those languages. Although the rhetorical preferences and conventions of Persian academic genres have been recently investigated in various studies (Faghieh & Rahimpour, 2009; Salar & Ghonsooly, 2016; Taki & Jafarpour, 2010; Zarei & Mansoori, 2011), there is still a clear need for a comprehensive exploration of the

structures of interpersonal relationships in the academic texts produced by the members of different academic communities.

### **1.5 Definition of Key Terms**

**Metadiscourse:** It is the cover term for “the self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) to express a viewpoint and engage with readers as members of a particular community”. (Hyland, 2005a, p. 37).

**Interactional Metadiscourse Markers:** They are those rhetorical elements which enable the writer “to control the level of personality in a text and establish a suitable relationship to his or her data, arguments and audience, marking the degree of intimacy, the expression of attitude, the communication of commitments, and the extent of reader involvement” (Hyland, 2010, p. 128).

**Hedges:** They are those textual elements which illustrate the subjectivity of the writer’s position towards an argument, thus signifying his/her commitment to the proposition (Hyland, 2005a)

**Boosters:** They are the linguistic features which signify the author’s certainty and confidence and his/her tendency to emphasize his single voice and narrow down the diversities (Hyland, 2005a).

**Attitude Markers:** They are the linguistic sources which illustrate the writer’s affective values such as surprise, importance, and frustration for propositions (Hyland, 2005a).



**Self-mentions:** They are the linguistic devices which enable the author to show explicitly present himself/herself in the text (Hyland, 2005a).

**Engagement Markers:** They are the linguistic resources which explicitly address readers, whether through focusing their attention or including them as discourse participants (Hyland, 2005a).

**Discourse Communities:** It is a group of people who follow a wide set of agreed public objectives, communicate with each other and share their knowledge through using a set of agreed upon norms and conventions (Swales, 1990).

**Genre:** A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre (Swales, 1990, p. 58).

**Inter-cultural Rhetoric (IR):** It investigates the similarities and differences of written texts produced by writers from different cultural and linguistic backgrounds. IR aims at identifying the rhetorical patterns of texts and improving cross-cultural communications (Connor, 2011).

**Corpus-Informed Materials:** They are language teaching resources developed by the careful selection, modification, and manipulation of the texts compiled in an authentic compiled corpus (Reppen, 2011).

## **1.6 Summary**

The background of the study and the gaps in the literature were discussed in the first sections of this chapter. Later, the aim of the study and the research questions were presented. The significance of the study was explored in the next section. The key terms were defined in the final section of the chapter.

## **Chapter 2**

### **REVIEW OF LITERATURE**

In the first sections of this chapter, fundamental concepts in academic discourse analysis studies including academic discourse, discourse community, knowledge domains, genres, and the characteristic of genre studies are discussed in detail. In the second part of this chapter, the concept of metadiscourse, different metadiscourse models, specifically, Hyland's interpersonal model of metadiscourse and its principles and resources are reviewed. This section is then followed by a review on the intercultural studies on the employment of metadiscourse markers in different academic genres, particularly academic articles. Further, the concept of lexical bundles and its relationship with metadiscourse are discussed. Teaching metadiscourse in the classroom and the related studies in this field are presented in the last section of the chapter.

#### **2.1 Academic Discourse**

Academic discourse is the language used in the academy. The language which is used for a variety of social activities from teaching and discussing academic concepts to constructing disciplinary knowledge and writing academic research articles. It is through the appropriate use of this language in academic reports, assignments, theses and dissertations that a university student can show the competencies they have developed to progress to educational success and graduation. It is through the academic discourse that an academic constructs his or her knowledge and shares it

with the other academics in the discipline via writing academic articles or presenting in conferences in the local or international contexts.

An academic discourse is a means of constructing and evaluating knowledge in a specific discipline (Hyland, 2009). Social constructivist perspective views knowledge as the product of everyday interactions between the members of an academic discipline whose views towards the reality and the world around them, their beliefs, and their interpretations of events are filtered through the theories they believe in, methods they employ and the problems they deal with. As Wells (1992) stated, each discipline is an academic tribe (Becher & Trowler, 2001) which possesses its own instrumental procedures, judgement and validity criteria, and appropriate argumentation and persuasion methods.

Knowledge, then, is a conversation between individuals rather than a representation of the reality. To participate in this conversation, members are required to meet the conventions of the academic community through using a specific spoken or written discourse which is acceptable, anticipatable, and persuasive by others. These conventions tie texts to disciplines through a series of linguistic choices that are in line with the expectations and needs of the other members of the community. In other words, academics, for instance, who write in a discipline, not only attempt to create a balance between negotiating their claims and showing the originality and validity of their research to the potential readers but also take into account the rhetorical expectations, the probable objections, and the background knowledge of these readers (Hyland, 2004). An academic discourse, thus, associates writers, readers, and texts, and emphasizes conceptual frames that assist individuals to shape their experiences and accomplish their goals through using language.

An academic discourse preserves the prestige of the group with outsiders. The emerged culture of an academic community, on one hand, guarantees reliable knowledge construction and provides an unbiased and uncorrupted picture of truth for the members of the community. On the other hand, such discourses are the representors of an ever-lasting search to gain higher disciplinary prestige (Hyland, 2009). Academic disciplines are sites of competing members, theories, methodologies which are involved in an endless struggle to ascend and to be recognized. Academic discourses are at the heart of such efforts to get more institutional appreciation, recognition, as well as resources. Yet, they establish in-group solidarity and empower the stability of the disciplines through clarifying the ways individuals interact in their communities.

To put it in a nutshell, academic discourses not only are vital to constructing and sharing knowledge, but also are central to understanding the nature of a disciplinary knowledge, its shaping and reshaping process, and its recognition in the outside world. That is the reason why the investigation of academic discourse and the ways members of academic communities use the language for showing their competence, negotiating their notions with others and persuading them, and maintaining the boundaries of their communities are the key dimensions of a vast number of Today's discourse analysis and pragmatics studies.

## **2.2 Discourse Community**

The notion of community is one of the central issues in understanding the ways individuals develop their discourse competencies and enables them to establish their academic identities and to position themselves as effective members of their discourse community (Hyland & Hamp-Lyons, 2002). The way individuals communicate with each other, share their knowledge, and cooperate together is determined by the norms

and conventions set by the discourse community they belong to (Swales, 1988, 1990, 1998; Hyland, 2003, 2005a, 2009). Theoretically, the concept of discourse community arises from the Bakhtin's (1981) notion of 'dialogism' which argues that all utterances are influenced by, referred to, or derived from the previously written or spoken discourse while at the same time they presuppose and react to the expectations of a potential or active audience. Therefore, each utterance is unique since it is historically, culturally, and socially enriched with the beliefs, notions, and value judgements of many speakers or writers. Hence, every writer/speaker is a reader/listener and every reader/listener is networked with other audiences.

The basic role of the notion of 'discourse community' in the understanding and interpreting the communications have been one of the basic issues in discourse studies and scholars have offered different definitions for this crucial concept (Barton, 1994; Kent, 1991; Swales, 1990). Perhaps, the best attempt to define this notion has been offered by Swales (1990), who conceptualized the concept of discourse community offering six defining characteristics (p. 24-27):

1. A discourse community follows a wide set of agreed common public objectives.  
The discourse community sets some goals, formal or informal, on the basis of the shared values and beliefs of the community members.
2. The members use intercommunication mechanisms in their community. The messages of the members are conveyed through different mediums of communication, and across a number of milieus, such as newsletters, journals, meetings, phone calls and so forth.
3. A discourse community has specific participatory mechanisms which are primarily used to exchange knowledge and feedback. The survival of a community is

- guaranteed by the involvement of the community members in the information exchange channels.
4. A discourse community possesses and makes use of one or more genres to pursue its communicative aims. The discourse community is involved in a continuous process of developing “discoursal expectations involving appropriateness of topics, the form, function, and positioning of discoursal elements, and the roles texts play in the operation of the discourse community” (Swales, 1988, p. 212). Thus, the development of discoursal expectations leads to generating genres.
  5. A discourse community also possesses a list of specific lexis. The dynamic communication exchange between the expert members of the community leads to the development of specialized lexical items, acronyms, and technical abbreviations which are widely shared between the community members. Moreover, such lexical items act like a border-line which separates the insiders and those who understand the terminologies from the outsiders who find the items puzzling.
  6. There is a threshold level of having relevant content knowledge and discoursal expertise for the members of a discourse community. The community members are constantly changing. They enter the community as novices and leave it for a variety of reasons, “the most involuntary of which would be death” (Swales. 1990, p. 27).

Swales’ (1990) definition of discourse community implies that communities affect rhetorical practices, manner, and meanings of the messages conveyed within them. Also, the way people communicate and exchange their notions and information will vary from one community to another. Seemingly, discourse community conventions foster group solidarity and draw borders between group insiders and outsiders.

It is worth noting that the notion of community brings together some key features of ‘context’, fundamental in producing and interpreting the written and spoken discourse. Cutting (2002) defined them as (1) the *situational context*, (2) the *background knowledge context*, and (3) the *co-textual context*. The situational context is described as people’s knowledge about the setting, interlocutors, and a full range of deictic information around them. The background knowledge refers to the cultural background knowledge and interpersonal knowledge the community members possess about the world around them, different aspects of life, and each other. The co-textual or linguistic knowledge describes the language used in a specific discourse. Therefore, community not only determines the way meaning is created in interaction, but also sets a communication framework which defines the way people presume as ‘doing philosophy’ or ‘doing physics’. Philosophers do not talk like physicists nor architects write like lawyers. Each group has its own way of engaging with its members and goes through specific discourses and practices to interact. Undoubtedly, academic discourse communities are good examples of a discourse community.

### **2.2.1 Academic Disciplines**

‘Discipline’ is a common term which encompasses a number of inter-linked concepts such as field knowledge, academics, students, research, researchers, research funds, and institutional structures, to name but a few. Disciplines are institutions where personal, institutional and sociocultural characteristics of the members influence their actions and understanding. Hyland (2006) defined disciplines as “institutional conveniences, networks of communication, domains of values and modes of enquiry” (p.18). At first glance, the notion of discipline seems to be a distinct and unifying concept, widely accepted by the members of an academic community. Mathematics, physics, and history are considered as obvious examples of disciplines. However, there



are disciplines such as peace studies, applied linguistics, or oriental studies which mainly stands between the borders of two or more disciplines.

The fact is that in today's academia, disciplinary boundaries are not considered stable and monolithic lines. One of the reasons would be the interwoven association between the notions of discipline and scholarship. In fact, the complex process of conducting research and teaching within a social basis can redraw the edges of a discipline. Loosing or gaining international recognition, which is closely related to the problems disciplines deal with, might lead to the emergence or decline of disciplines. In a similar way, cultural and geographical factors such as the educational system of a country, the economic level, or dominant ideological beliefs can change the social insights to the frameworks and frontiers of a discipline (Podgorecki, 1997). 'International currency', i.e. being recognized by leading universities and academic institutes is another reason which can affect on what is perceived as a specific discipline, its knowledge specific domains, and its problem-solving methods (Hyland, 2009). Holding conferences, allocating research budgets and funds, establishing field-related societies, and specialist journals can gain academic credibility and significance for disciplines. The uncontrollable flow of information, accompanied by the above mentioned local and global struggles have faded the stable boundaries of disciplines. For instance, the established discipline of biology, today, is surrounded by some satellite newly-established disciplines of biomechanics, bio-chemistry, and bio-informatics. While a discipline such as industrial engineering stands in the overlap of engineering fields and business management.

However, it is the vulnerable notion of discipline, along with the notion of discourse community, which offers deeper insights to the way academics interact and understand

each other in academia. In sum, the idea of disciplinary communities conceptualizes the conventions, practices and patterns used in academic communications. It shows the ways academics encode and decode knowledge, use the academic literature, and show their stance towards the presented arguments in a specific discipline.

### 2.2.2 Knowledge Domains

Broader than the concept of discipline, is the notion of knowledge domains, which investigates the similarities between academic discourse communities. Traditionally, scientific studies have been divided into two contrasting areas of natural sciences and social sciences which are significantly different in their methodologies to evaluate and interpret data, the way arguments are presented, readership levels, and fluidity of genres (Figure 1). Empirical, experimental, and quantitative academic disciplines such as chemistry and mechanical engineering are considered as hard sciences, whereas more interpretive, argumentative, and qualitative disciplines such as philosophy and sociology are known as soft sciences. Basic differences in viewing the world and building knowledge between these two domains have resulted in obvious and tangible variations as well as rhetorical peculiarities in the discourses used among their community members (Hyland, 2009).

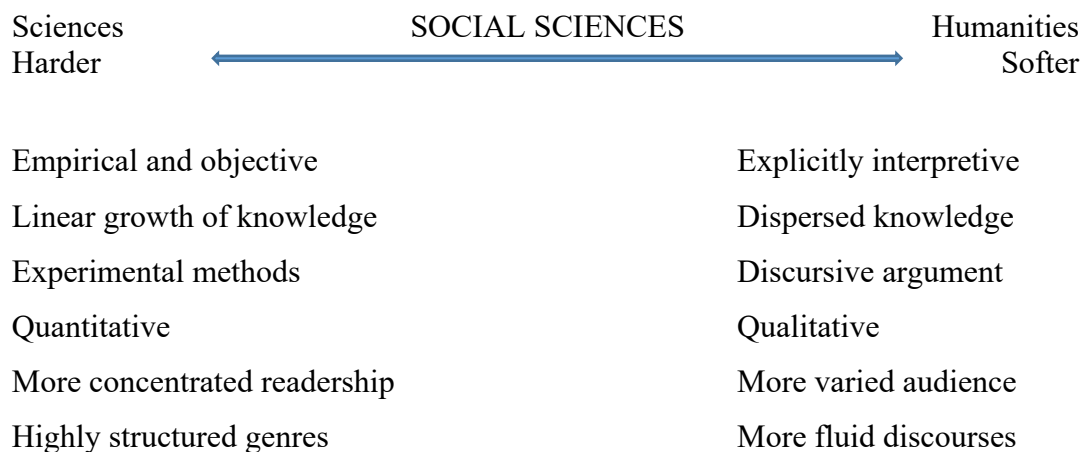


Figure 2.1: Continuum of Academic Knowledge (Hyland, 2009, p. 63)

It is important to remind that dividing the scientific fields into two domains of soft and hard and having a reductionist view towards scientific areas is not without problems and that there are a number of disciplines which do not fall within the presupposed characteristics of each group. Yet, some scholars believe that the hard-soft division actually illustrates the academic members' perceptions about their own field of study (Becher & Trowler, 2001; Kolb, 1982). As Kuhn (1970) stated natural scientists deal with the problems gradually emerged out of earlier problems and propose further questions which needs to be pursued in further research. In comparison to soft sciences, natural sciences are more model-based and more closely follow pre-defined criteria in terms of how to build, reproduce, and contribute to the field. Such an objective and cooperative approach in natural sciences has led to the employment of specific rhetorical features in their written discourse such as avoiding explicitly interacting with the readers and being reluctant to represent writer's authority in their research articles (Hyland, 2004, 2005).

Overall, it seems that there are good reasons for considering knowledge domain in the investigation of academic discourses since domains are to a great extent stable and possess "the most robust way of discussing communities" (Hyland, 2009; p. 65). Members of academic communities are involved in multi-layered interactions in their disciplines and the related sub-fields, which all take place in the broader ground of knowledge domains, recognizing some general and basic social and rhetorical conventions shared in the area.

### **2.3 Genre**

Swales (1988) considered genres as 'the properties of discourse communities' (p. 211), since they are the community members' typical ways of using language in similar

texts. Bhatia (2002) also acknowledged the close relationship between the two concepts of discourse community and genre through recognizing genres as the conventionalized and recognizable communicative events rooted in academic or professional communities they frequently used. In fact, the social aspect of genres is mainly foregrounded by the concept of discourse community (Martin, 2003). Yet, there are still discussions on the relationship between these two concepts. While some scholars (Berkenkotter & Huckin, 1995; Hyland, 2002; Paltridge, 1997) believe that it is the discourse community and the individuals who determine a genre and that the content and structures of genres are community-defined, others such as Mauranen (1993) argue that it is the genre that selects its users. Different genres are accessible for different social groups and it is the functions of linguistic features which determine the attributed social purposes (Mauranen, 1993).

However, broadly speaking, genre is a particular form of discourse which specific structural, stylistic, and contextual elements of language use which are frequently occur in similar texts (Hyland, 2003). The members of a discourse community follow the exemplars of a specific genre to express their ideas, develop relationships, and to perform actions through using language. In genre studies texts are considered as the representatives of wider rhetorical conventions which provide explanations about the communities that have produced and used them in their interactions. Thus, investigating the textual structure of genres is one of the main research strands in genre studies. Studying the lexico-grammatical and rhetorical patterns of a specific genre, also known as 'generic integrity' (Bhatia, 1999, p.2), is mainly influenced by Halliday's (1994) Systematic Functional Linguistics (SFL) and Swale's (1990) move analysis studies. Halliday views language as a system which creates a link between texts and their particular contexts by virtue of lexico-grammatical patterns and

rhetorical practices (Hyland, 2013). In other words, Systemicists argue that a text and its linguistic properties together serve a certain function determined by the discourse community. It can be said that Systemicists are mainly interested in exploring the formal qualities and specific functional, schematic, and lexico-grammatical features of genres. Practically, SFL acknowledges recognizing and teaching the social functions of texts and emphasizes the teaching of genre-specific features in language teaching programs.

Swalesians, however, define a genre as a set of communicative events which are shaped based on the shared communicative purposes of the expert members of a discourse community. In fact, the difference between Swalesian and systematic approaches lies on the emphasis of the former on the role of communicative goals (Martin, 2003). In Swales' definition, genres are further introduced as structured and conventionalized products. In other words, the communicative purposes are represented through internal schematic structures or 'moves'. The internal structure of the genres represents the way communicative aims are accomplished. The concept of move is used to show the generic norms and patterns with regard to the organization of the text. To identify the move structures, Swales (1990) employed both lexico-grammatical and rhetorical functions, although the latter seems to be preferred more. Apart from the discursive move structure, the communicative purposes also have impacts on the content and style of the text and constraint the writers' and/or speakers' choices (Nielsen & Askehave, 2005). There are specific rhetorical strategies for specific communicative intentions. In fact, the main aim of genre studies is to distinguish the common range of rhetorical strategies used in different schematic structures (move) and to identify the most common, genre-specific, expressions in

each specific genre. In the next part, some of the major research strands in genre analysis studies are discussed in details.

### **2.3.1 Academic Genres: Research Articles**

Academic discourse is what links the members of an academic community to each other and to the real-world. Different research genres are the means by which academic knowledge is shaped and shared and the ideas and stance of both expert and novice members towards different arguments are presented. Such capability has attracted many discourse and genre analysis researchers to explore the rhetorical patterns and conventions in research genres such as conference presentations (Rowley-Jolivet, 2002), text-books (Upton & Cohen, 2009), book reviews (Moreno & Suárez, 2008) and research articles (Bogdanovič, 2014; Mu et al., 2015; Mur-Dueñas, 2007, 2010).

Research articles, however, are considered a distinguished genre of the academy. This is because research articles are the legitimate means of converting beliefs and thoughts to scientific facts and knowledge (Hyland, 2009). A research article usually begins with an abstract through which the author tries to attract the readers' attention by emphasizing on the innovative and remarkable aspects of the study. Studies have shown that the rhetorical structure of abstracts might be affected by the disciplinary cultures (Dahl, 2004; Khedri et al., 2013). In each discipline, the writers use specific rhetorical features and moves to negotiate their claims with their readers, to convince them, and also highlight the novelty of their findings.

The writers, in the next step, write an 'introduction' for their research to engage the readers in the topic by describing what is known and what is new and justifying the significance of their study and emphasizing the areas which are incomplete. Forgrounding what the academic community members know and is worth knowing

accompanying with references to the existing studies in the literature is particularly explained in the 'literature review' section. In this section, the writers attempt to link their study to a coherent set of disciplinary research and activities. The 'method' section is usually inserted after discussions on the related literature and contains information related to the procedures of the research, data collection methods, materials, and participants. The amount of elaboration on these steps is highly associated with the writers' assumptions about the readers' familiarity with the processes and their expectations (Hyland, 2009).

The 'results' section which is usually followed by the method, contains the findings of the research. In this section, the writer adds to the persuasiveness of the article through using specific rhetorical moves and features to substantiate the methods and emphasize the validity of the results. It is in the 'discussion' section that writers create a link between the related studies mentioned in the literature and compare the findings of the current study with them in order to find support for the new claims and confine the counter-discussions. It is found that in comparison to other sections of the articles, the theme of discussion sections encompasses more interpersonal features such as hedges and attitude markers to assist the writers illustrate their stance towards the arguments (Gosden, 1993).

### **2.3.2 Genre Studies**

Nowadays, genres are widely used as fundamental analytical devices in various discourse analyses. One of the current, main research trends in today's discourse studies is to focus on genres as texts. These studies examine genres from three main perspectives, (1) their structural and textual features, (2), their intertextuality and (3) their dynamic characteristics.

Investigating the common textual structures used in different genres have been one of the main research areas in today's discourse and genre analysis studies. For instance, research in English for Special Purposes (ESP) has investigated the customer service chats in the web-sites (Lockwood, 2017), generic norms in job letters (Khan & Tin, 2012), and the linguistic characteristics of advertorials (Zhou, 2012). In addition, move analysis have been used in the investigation of different academic genres such as research articles, academic reports, thesis and dissertations, etc. Recently, EAP researchers have investigated the generic structures of the students' laboratory reports (Parkinson, 2017), the move patterns of book reviews (Junqueira, 2013), and the rhetorical moves in literary research article abstracts (Tanko, 2017).

Moreover, genre analysts have studied the distinguishing features of academic genres such as lexis, styles, metadiscourse markers, etc. One of the linguistic features, which have recently received attention, is the common lexical bundles in academic genres (Cortes, 2013; Esfandiary & Barbary, 2017; Jalili, 2017). Lexical bundles are considered as the building blocks of discourses whose appropriate employment improve the fluency of the linguistic productions. Studies, recently, have investigated the employment of *introductory it* among learners and expert users of English, the use of multi-word verbs in the presentations of English native-speaker college students and nominal stance construction among native and non-native university students (Larssen, 2016). In other areas, research has investigated the employment of linking adverbials categorizations in different EAP and ESP genres (Yin, 2016), as well as metadiscourse patterns and their changes in different disciplines (Hyland & Jiang, 2018).



Another research area in genre analysis investigates the interaction between genres. Genres are viewed as institutional social networks which never appear in isolation and work as interconnected networks (Tardy & Swales, 2008). In such research, Bakhtin's (1986) concept of 'intertextuality' is of great importance, as it refers to the fact that every written text is a reflection of previously written texts. Intertextuality, for instance, in academic genres might appear in direct or indirect citations of previous studies, obtaining previously used patterns of meanings, or appropriate rhetorical patterns. Samraj (2013) investigated the employment of intertextual links for different rhetorical functions through analyzing the two academic genres of master theses and academic articles. Closely related to the concept of intertextuality is interdiscursivity which refers to the attempt to appropriate the specific textual, semantic, pragmatic, social, or even institutional characteristics of a specific genre to create a neighboring, embedded, hybrid genre (Bhatia, 2010). Such a definition signifies that interdiscursivity usually occurs in professional practices (Bhatia, 2016). For instance, in his analysis of daily business emails, Alafnan (2017) identified instances of hybrid genres, such as 'discussion-inquiry' and 'discussion-informing' email genres.

There are also other group of genre analysts who have focused on dynamism of genres (Tardy & Swales, 2008). Differences and changes between discourse communities' ideologies, expectations of community members, and discursive features would lead to changes in the production of the genres they use. Cross-disciplinary genre analysis studies, for instance, find the differences between the rhetorical strategies and structures of genres written in different disciplines discussing that the variations stem in differences in adopted viewpoints to the real-world issues, knowledge construction practices, methodologies, and persuasion strategies preferred by the members of these

specific academic communities (Estaji & Vafaeimehr, 2015; Hu & Cao, 2015; Khedri et al., 2013; Lin & Evans, 2012; Omidian, Shahriari, & Siyanova-Chanturia, 2018).

Diachronic studies on different aspects of academic genres, for instance, show the gradual evolvement of academic genres such as research articles during decades which are stemmed in changes in the views and expectations of academic community members within those periods (Gross, Harmon & Reidy, 2003; Hyland & Jiang, 2016). Inter-Cultural Rhetoric (IR) (Connor, 1996, 2002) studies also investigate the dynamism of genres geographically and culturally. These studies usually compare the preferred rhetorical patterns of writers from different first language backgrounds. IR research suggests that speakers of different languages are different in their linguistic intuitions and schema, their preferred ways of establishing texts, and even their views towards the responsibilities of the audience and the text producer (Hyland, 2006). Using different linguistic and cultural system affect their preferred discursive practices, conventions, and community expectations. IR studies usually follow a pedagogical approach and aim to raise the awareness of learners and teachers of English as a second or foreign language of differences in preferred rhetorical features and patterns between their first language and English. For instance, Bychkovska and Lee (2017) investigated the employment of lexical bundles in English argumentative essays written by native English and native Chinese university students. The forms and functions of the common four-word bundles used by the two groups of writers were analyzed. The results revealed that non-native Chinese writers use significantly more lexical bundles than their native counterparts. Moreover, the structure and patterns of lexical bundles used by ESL Chinese students varied from the ones used by English-speaking writers. The results showed functional and grammatical bundle misuses among ESL Chinese writers which were mainly resulted from the effects of

the writers' L1 and the direct translation of some bundles from the students' L1 to their L2 texts.

In sum, the concept of genre has classified the texts based on their similar contextual, structural, and pragmatic features which are commonly used by the members of a specific discourse community. Exploring the similar features of genres have also been the main objective of studies which focused on exploring the intertextuality of genres and the rhetorical features of hybrid or neighboring genres. Classification of texts to various genres has also enabled researchers to discover the variations within texts written in each genre. Studying the textual and functional features of texts unravels the dynamism within genres which is caused by theoretical, historical, or geographical differences of discourse communities producing them. The similarities and differences between genres are explored through investigating the employment of a number of rhetorical features such as lexical bundles, move analysis, lexical priming, and metadiscourse markers (Flowerdew, 2012). Metadiscourse markers are one of the key rhetorical features which have been widely investigated in different genre analysis studies (Hyland, 2005a). Investigating the employment of metadiscourse markers shed light on the interpersonal aspects of writing by addressing the way writers establish their authorial stance to the propositions and the way they interact with their readers and involving them in the text. In the next section, the theoretical background of metadiscourse markers, their classifications and models are discussed in detail.

## **2.4 Metadiscourse Markers**

The term 'meta-discourse markers' was first used by Harris (1959, 1970), and later was developed by Vande Kopple (1985) and Crismore (1983) to describe explicitly used textual markers in the discourse. Vande Kopple (1985) defined metadiscourse

markers as non-propositional, linguistic features explicitly used in written or spoken discourse for the purpose of organizing the ideas and developing better interpersonal relationship between the write/speaker and the reader/listener. Crisemore (1983) considered metadiscourse markers as non-propositional discursive elements which assisted the receipiants of the discourse to understand, interpret, and evaluate what was intended to convey by the producers.

In fact, Vande Kopple (1985) and other metadiscourse analysts (Crismore, 1983; Hyland, 2000, 2005) drew on Halliday's (1994) systematic functional linguistics, according to which language was being simultaneously organized around three metafunctions, i.e. ideational, interpersonal, and textual functions. Ideational functions associate with using language to show the perceptions and world experiences of the producers of language and are mainly related to 'propositional' meaning. Interpersonal functions refer to using language in interactions, explicit expression of personal feelings and evaluations, and engagement with the interlocutors. Finally, textual functions refer to using language to create a coherent and organized texts which relates the texts to the ideational and interpersonal meanings. Drawing on Halliday's metafunctions, metadiscourse analysts distinguish metadiscourse resources from propositional elements, which are associated with real world experiences and ideas. Metadiscourse markers are non-propositional markers which are used by the writers to fulfill the expectations and needs of the community of readers to show their stance (Hyland & Tse, 2004). Textual metadiscourse assist writers to create a coherent text related to its reader as well as its context (Hyland, 2005a; Vande Kopple, 1985). Interpersonal metadiscourse, on the other hand, help "writers express their personalities, their evaluations of and attitudes towards ideational material, showed

what role in the communication situation they were choosing, and indicated how they hoped readers would respond to the ideational material” (Vande Kopple, 2002: 2-3). While some analysts such as Dahl (2004) and Mauranen (1993) argued that metadiscourse only dealt with textual functions, others such as Crismore et al. (1993), Hyland (2005a) proposed that metadiscourse dealt with both interpersonal and textual functions. Hyland (2004) further argued that even textual markers were oriented towards interpersonal functions. In other words, textual features, too, facilitated reader-writer communications and fostered the readers’ understanding of the writer’s interpretations.

Metadiscourse, thus, is a pragmatic and rhetorical strategy which are presented through a variety of linguistic and even non-linguistic explicit signals. Explicitness is a key characteristics of metadiscourse since it is a manifestation of the writer’s overt effort to perform a particular pragmatic function. The realization of metadiscourse in discourse ranges from various non-verbal signals such as intonation and stress in the spoken discourse and different punctuation marks such as capitalization, font size, and bolding in the written discourse to individual words, clauses, and even the sequency of sentences which are used in complicated literary and academic texts (Crismore et al., 1993).

There are basic issues which must be taken into account in identification of metadiscourse markers in any text. First of all, the formal heterogeneity in the realization of metadiscourse markers indicates that a function might appear in different forms and that a specific form, such as a word, might also perform more than one function concurrently (Hyland, 2005a). For instance, the term *quite* may appear as a hedge in *quite acceptable* and be considered a booster in *quite incredible*. Or the word

*possible* in *it is possible that she was lying to me*, is used as a metadiscourse marker to show the attitude of the speaker or writer, while in the sentence *it is possible to find a taxi here*, the word *possible* is not considered as a metadiscourse marker since it refers to the real world.

The next issue in the realization of metadiscourse is related to the size of the metadiscourse units. In fact, metadiscourse markers can be realized by linguistic units ranging from individual words to three- or four-word lexical bundles, and complicated clauses. The size of the units is considered a crucial factor in analyzing the employment of metadiscourse markers since longer units may include smaller units (Hyland, 2017). For instance, *our conclusion* can be considered as a frame marker as it refers to a specific section of a text, or as two linguistic units in which the word *our* can be categorized as a self-mention metadiscourse. It is worth noting that some scholars such as Vande Kopple (1985), Crismore et al. (1993) and Hyland (2004) mainly followed a quantitative approach (Ädel & Mauranen, 2010) through relying on pre-determined list of lexical items. Following such an approach assists the discourse analysts to compare the employment of metadiscourse markers across different genres and languages based on the frequency and distribution patterns of metadiscourse markers. Other scholars such as Ädel (2006) and Mauranen (2003), on the other hand, followed a rather qualitative approach (Ädel & Mauranen, 2010). Although, similar to the quantitative approach, the analysis commences with counting the frequency of a small unit such as a personal pronoun, the metadiscourse unit is the larger lexicogrammatical pattern which encompasses the smaller unit.

Simply put, the functions of metadiscourse markers, the object of metadiscourse studies, approaches to the realization of metadiscourse units in the discourse have led

to the development of a number of metadiscourse classifications since 1980s (Ädel, 2009; Crismore et al., 1993; Hyland, 2004, 2005; Mauranen, 1993; Vande Kopple, 1985). In the next section, two of the most well-known metadiscourse models will be introduced and discussed in detail.

#### **2.4.1 Classifications of Metadiscourse Markers**

Metadiscourse in its broad sense deals with multifunctional linguistic features in the text which show the writer's acknowledgement of the reader (Dahl, 2004). Drawing on Halliday's metafunctions of language, scholars proposed various taxonomies to delimit and classified these explicit resources. However, Vande Kopple's (1985) and Crismore et al.'s (1993) classifications are the ones which have been widely used and adopted in different discourse and pragmatic studies (Hyland, 2005a).

In fact, the first systematic classification of metadiscourse markers was proposed by Vande Kopple (1985). This classification was developed based on Lautamatti's (1978) and Williams' (1981) studies on metadiscourse markers. In his model, as it is shown in Table 2.1, Vande Kopple (1985) divides metadiscourse markers to two types of textual and Interpersonal metadiscourse markers. Textual markers are classified as text connectives, code glasses, validity markers, and narratives. Interpersonal markers include illocution markers, attitude markers, and commentaries. It is worth noting that later Vande Kopple in 2002, made some modifications in his model. Accordingly, the term validity markers were replaced by epistemology markers. In the revised version, epistemology markers include hedges, boosters, and attributors, and narrators.

Table 2.1: Vande Kopple's (1985) Metadiscourse Categories

Category	Function	Subcategory	Example
<b>Textual metadiscourse</b>			
Text connectives	help readers recognize how texts are organized and how different parts of a text are connected	Sequencers	<i>first</i>
		Logical connectives	<i>however</i>
		Reminders	<i>as I noted in Chapter One</i>
		Announcements	<i>what I wish to do now is develop the idea that there are</i>
Code glosses	help readers grasp the appropriate meanings of items in texts		<i>i.e.</i>
Illocution markers	inform readers of the speech or discourse acts performed at certain points of texts		<i>to sum up</i>
Narrators	emphasize who said or wrote something		<i>according to X</i>
<b>Interpersonal metadiscourse</b>			
Validity markers	express the truth-value of the propositional content and the writer's degrees of commitment	Hedges	<i>perhaps</i>
		Emphatics	<i>clearly</i>
		Attributors	<i>according to</i>
Attitude markers	reveal the writer's attitudes toward the propositional content		<i>surprisingly</i>
Commentaries	directly address readers		<i>most of you will oppose the idea that</i>

Narrators, which are the fourth category of textual metadiscourse in Vande Kopple's first model, are classified as a sub-category of epistemology markers in the new model to emphasize the function of showing commitment and support to the propositions (Vande Kopple, 2002).

Later, Crismore, Markannen, and Steffenson (1993) modified Vande Kopple's (1985) model and revised the subcategories of textual and interpersonal metadiscourse. As it



is shown in Table 2.2, similar to Vande Kopple's model, in this model textual markers are defined as linguistic features which assist the writers to organize the text, while interpretive markers are the features which assist the readers to better understand the intended meaning of the writer and to read between the lines. However, Crismore et al. (1993) introduce new classifications and redefined the functions of each metadiscourse category. They divide textual metadiscourse to two main categories of textual markers and interpretive markers. Textual markers are divided to logical connectives, sequencers, reminders, and topicalizers. Interpretive markers include code glosses, illocution markers, and announcements. Interpersonal markers, on the other hand, include hedges, certainly markers, attributors, attitude markers, and

Table 2.2: Crismore et al.'s (1993) Metadiscourse Categories

Category	Function	Examples
Textual Metadiscourse		
1. Textual markers		
Logical connectives		
Sequencers	Show connections between ideas	in addition, therefore, so
Reminders	Sequence/ordering	first, next, finally
Topicalizers	References to previous information	as we saw previously
	Indicates shift in topic	now, I will discuss ...
2. Interpretive markers		
Code Glosses		
Illocution markers	Further explains text material	for example, that is
Announcements	Name the act performed	in sum, to conclude
	Announce upcoming information	in the next chapter.
Interpersonal Metadiscourse		
Hedges	Show uncertainty to truth of claim	might, possible, likely
Certainly markers	Express commitment to claim	certainly, shows, know
Attributors	Give source or support of claim	Scott claims
Attitude markers	Display writer values	surprisingly, I hope
Commentary	Relationship marker with reader	dear reader, please consider

commentaries. A closer look at Crismore et al.'s (1993) model reveals that they dropped Vande Kopple's (1985) narrators category and introduced two new categories

logical connectives and announcements to textual metadiscourse markers. Crismore et al.'s (1993) also modified the classification of epistemology metadiscourse markers e.g. hedges and emphatics in their model. Vande Kopple (1985) classified them as the examples of validity markers which were the sub-category of textual metadiscourse. While, Crismore et al. (1993) separated the two categories of hedges and certainty markers and classified them as the sub-categories of interpersonal markers. In addition, in Crismore et al.'s (1993) taxonomy illocution markers were classified as textual metadiscourse. According to Vande Kopple's model, however, illocution markers were one of the main categories of interpersonal metadiscourse.

Crismore et al.'s attempts to expand and modify Vande Kopple's model was considered an improvement in resolving the ambiguity surrounding the concept metadiscourse. Yet, there were some questions which remained unanswered in Crismore et al.'s classification. Hyland (2005a) argued that the justification behind dividing textual metadiscourse to two sub-categories of textual and interpretive markers in the taxonomy was unclear. He also raised issues concerning the classifications of textual markers in this model. Hyland (2005a) further discussed that logical connectives category was an ambiguous concept since on the contrary to other categories which were defined functionally, logical connectives were described syntactically as features which 'join two main clauses' (Crismore et al., 1993, p. 49). What was considered another pitfall in Crismore et al.'s taxonomy concerned the categories 'reminders' and 'announcement' (Hyland, 2005a). Both categories included metadiscourse resources which assisted writers to organize the text and increase its coherence. Reminders referred to what was mentioned earlier, while announcements were the resources which announced what came next in the text. The point of confusion was that despite relative similarities between the functions of the two

categories in referring to information presented in different parts of a text, Crismore et al. categorized reminders as textual markers while announcement was introduced as interpretive marker.

Following Vande Kopple (1985) and Crismore et al. (1933), Hyland (2005a) proposed his own classification of metadiscourse markers, which has been widely used in different genre and discourse analysis studies in the last fifteen years. In the next section, the principles and theoretical bases of the model and its classifications are introduced and discussed in detail.

#### **2.4.2 Hyland's (2005a) Interpersonal Model: Principles**

Hyland (2000) defined MDMs as “the self-reflective expressions used to negotiate interactional meanings in a text, assisting the writer (or speaker) to express a viewpoint and engage with readers as members of a particular community” (p. 109). In proposing his interpersonal model of metadiscourse markers, Hyland (2004, 2005a) adopted a functional perspective which authorized the writer to interact with the reader. In other words, the writer, the reader, and the text are believed to be joined in a rhetorical space where the writer has the authority to refer to himself/herself, the potential reader, and the text. The model is based on the following key principles:

1. Metadiscourse deals with non-propositional aspect of discourse;
2. Metadiscourse epitomize writer—reader interactions;
3. Metadiscourse deals with internal relations of the discourse.

In the next two sections, these principles will be discussed in detail. The discussions are then followed by a thorough description of Hyland's robust framework according to which metadiscourse is fundamental element in conceptualizing the interpersonal relationships in the texts (Hyland & Tse, 2004).

### **i. Metadiscourse deals with non-propositional aspect of discourse**

Definitions of metadiscourse (Crismore et al., 1993; Vande Kopple, 1985; Williams, 1981) have described metadiscourse as non-propositional features which deal with organization of the text and the representation of writer's personal attitudes and stance. Yet, the main question which arises is what is considered propositional and what is non-propositional. 'Proposition' in general concern with the world and the communicative and informative aspect of the text. 'Non-propositional' or 'metadiscoursal' elements, on the other hand, are the textual features which deal with organization, coherence, and the expectations of the readers. Drawing on Halliday's (1994) meta-functions, it can be said that propositional content is closely associated with the ideational function of language according to which language is used to share and discuss facts and perceptions of the world, while metadiscourse deal with the interpersonal and textual functions of the language. Metadiscoursal elements are those aspects of language which are used to form a coherent discourse and to encode interaction between the interlocutors, to share their stance and affections (Hyland, 2005a).

Discussing proposition-metadiscourse dichotomy, Hyland and Tse (2004a) further stated that early scholars such as Williams (1981) and Vande Kopple (1985) regarded propositional, communicative content as the primary aspect of a text. Following Malinowsky (1923), however, Hyland (2005a) argued that both elements were equally important to coherence and meaning and both appeared together in a text. Metadiscourse markers should not be viewed as the secondary elements used to glue the propositional content, he stated. According to this model, metadiscourse markers are the means which make the propositions intelligible and convincing for the

receivers. They are the integral parts of communication process which link a text to the context, make the text persuasive, intelligible, and engaging for a certain readers (Hyland, 2005a). Thus, they are the key elements in analyzing established reader-writer relationships which can be used in the exploration and comparison of strategies which are preferred and used in different discourse communities.

## **ii. Writer—reader interactions**

Hyland's interpersonal model of metadiscourse rejects the dichotomy of interpersonal and textual functions found in earlier classifications such as those of Vande Kopple (1985) and Crismore et al.'s (1993). He suggested that 'all metadiscourse is interpersonal' (Hyland & Tse, 2004) and found the textual-interpersonal distinction misleading. In other words, even textual markers are oriented towards interpersonal functions since they facilitate reader-writer communications and fostere the readers' understanding of the writer's interpretations and assist the writers to persuade the readers through meeting their expectations and following their norms and conventions. Through using textual metadiscourse, writer underscore certain relationships and features to guide the readers and help them understand the writer's intended meaning.

## **iii. Internal and external relations of the discourse**

Accepting that textual metadiscourse can perform interpersonal and propositional functions, then we need to identify which one is their primary function in the discourse (Hyland & Tse, 2004). The textual items, as it was mentioned earlier, functioned to connect things which happen in the real world and are thus experientially oriented (external), or they organize and connect different aspects of the discourse (internal). For instance, if sequencing devices are used to organize the text and to make the text more reader-friendly, the relationship is internal; however, in case they are used to describe the steps of a real-world event or process, the relations is considered external,

merely communicative and thus propositional. The external-internal dichotomy is closely related to propositional-metadiscoursal principles in that external relations are associated with propositional aspects of the discourse while the internal relations concern with the metadiscoursal features. Thus, if the aim of a discourse analysis is to recognize the metadiscoursal features in a text, then the distinction between external and internal relations between the sentences and identifying the real world and discourse matters are of crucial importance.

#### **2.4.3 Hyland's Interpersonal Model: Metadiscourse Resources**

Although the model adopted Thumpson and Thetla's (1995) interactive and interactional classification as a basis for identifying the organizational and evaluative components of interaction (Hyland, 2001a; Hyland & Tse, 2004), it is special for its emphasis on the interactional features, stance and engagement markers (Hyland, 2001a), and the reliance on the previous models, namely the classical taxonomies of Vande Kopple (1985) and Crismore et al. (1993) (Hyland, 1998a, 2000).

In his model, Hyland (2005a) identifies two dimensions of interaction, namely 'interactive' and 'interactional'. The interactive dimension represents the writer's awareness of a potential reader and his/her attempts to organize and construct the text so that it fulfills his argumentative goals and at the same time meet the needs of the reader. The interactional dimension of metadiscourse, on the other hand, concerns the writer's explicit expression of his/her feelings and stance towards an argument and the ways he/she takes to make his/her voice heard. The interactional resources signify that the writer is continuously involved in an imaginary dialogue with the reader and "works to jointly construct the text with the reader" (Hyland, 2005, p. 50).

The interactive and interactional dimensions are the main features of any discourse, written or spoken. They are presented through a number of rhetorical elements which themselves are allocated to specific functions (Table 2.3).

Table 2.3: Hyland's (2005a) Interpersonal Model of Metadiscourse

Category	Function	Examples / signals
<b>Interactive expressions</b>	help to guide reader through text	Resources
Transitions	express relations between main clauses	<i>in addition, but, thus, and finally, to conclude, my purpose is</i>
Frame markers	refer to discourse acts, sequences or stages	<i>noted above, see Fig., in section 2</i>
Endophoric markers	refer to information in other parts of the text	<i>according to X, Y 1990, Z states</i>
Evidentials	refer to information from other texts	<i>namely, e.g., such as, in other words</i>
Code glosses	elaborate propositional meanings	
<b>Interactional expressions</b>	involve the reader in the argument	Resources
Hedges	withhold commitment and open dialogue	<i>might, perhaps, possible, about</i>
Boosters	emphasize certainty or close dialogue	<i>in fact, definitely, it is clear that</i>
Attitude markers	express writer's attitude to proposition	<i>unfortunately, I agree, surprisingly</i>
Engagement markers	explicitly build relationship with reader	<i>consider, note that, you can see that</i>
Self mentions	explicit reference to author(s)	<i>I, we, my, our</i>

### A) Interactive Resources

Interactive resources are linguistic devices writers use to achieve coherence throughout the text. However, their presence is not limited to organizational functions. They signify the writer's assumptions about the reader's knowledge level, and his/her rhetorical expectations. Interactive resources consist of five sub-categories (Hyland, 2005a), namely transition markers, frame markers, endophoric markers, evidentials, and code glasses.

**Transition Markers:** Transition markers include the conjunctions and adverbial phrases which guide the reader between the steps of an argument. Some transition markers take “addition” roles in the discourse and add features to an argument (Martin & Rose, 2003). They are words or phrases such as *furthermore*, and *moreover*, *in addition to*, etc. Comparison markers show the similarity or differences between the arguments, such as *likewise*, *correspondingly*, *however*, *although*, *but*, etc. Finally, consequence markers such as *therefore*, *thus*, *hence* indicate that the argument reaches to a conclusion, or is being countered such as *nevertheless*, *of course*, and *in any case*.

**Frame Markers:** Frame markers are the indicators of text boundaries and structures. Some frame markers are ‘sequencers’ which put the internal units of an argument into order e.g. *first*, *then*, *next*. Or they explicitly mark discourse stages e.g. *in sum*, *in brief*, and *to summarize*. Some frame markers such as *I aim at*, *my purpose is*, and *seek to* signify discourse purposes. Topicalizers mark topic shift within the text such as *in regard to*, *let us return to*, and *resume*.

**Endophoric Markers:** Endophoric markers, also referred as ‘text references’ (Bunton, 1999) or locational meta-texts (Dahl, 2004), are signposts which assist the writer to refer to other parts of the text such as *Figure x*, *in this chapter*, and *x above*. In fact, they act as comprehension facilitators which help the reader to retrieve the intended meaning of the writer.

**Evidentials:** Evidential markers are the expressions which attribute to information from other sources. In academic writing, they usually appear as citations (Swales, 1990) or academic attributions (Hyland, 1999). Swales (1990) divides the evidential markers into integral and non-integral citations. In the integral citations, the cited



source is part of a sentence, whereas in non-integral citations, the cited source is mentioned in the parentheses, footnote, or bibliography sections.

**Code Glosses:** Code glosses are reader-friendly devices which add to the coherence of the text and help the writer explain and elaborate his/her intended meaning. Hyland (2007) identifies two sub-functions for code glosses, i.e. reformulation and exemplification. Reformulation markers are the functional devices used to explain and restate an already discussed argument from another viewpoint and clarify the message, such as *I mean*, *put another word*, and *as a matter of fact*. Exemplificatory markers are the elements such as *like*, *e.g.*, and *for example*, which support and elaborate an argument by citing examples.

## **B) Interactional Resources**

Interactional resources are linguistic devices which assist the writers to show their personal views towards the arguments. They reinforce the interaction between the reader and the writer and assist the writer to not only engage the readers in the discussion, but also establish persuasive negotiations with them. Interactional resources mainly emphasize evaluative aspects of a text and display the writer's persona and how s/he demonstrates his solidarity with the goals and conventions of the community (Hyland, 2005b). Addressing the level of personality in a text, interactional markers are associated with the tenor of the discourse. They acknowledge the writer's level of intimacy, and his/her commitment to the propositional meaning. In his interpersonal model of metadiscourse markers, Hyland identifies five sub-categories for the interactional resources, namely hedges, boosters, attitude markers, self-mentions, and engagement markers.

**Hedges:** They are those textual elements which illustrate the subjectivity of the writer's position towards an argument, thus signifying his/her commitment to the proposition. Using hedges, the author decreases the risk of making strong claims and leaves the space for the others to discuss their stance towards the argument. According to Abdollahzadeh (2011), hedges can appear in the form of adverbs (probably, approximately, plausibly), modal verbs (can, may, might, ought to), lexical verbs (seem, feel, appear), some parenthetical verbs such as *think, guess, suppose* which are followed by *that* and an indicative clause. In some cases, the author expresses his/her uncertainty by adding prefixes of not-, im-, or un- in words such as uncertainly, unclear, or not likely. Moreover, Hyland (2005a) introduces some phrases which represent the author's doubtfulness and cautiousness to the arguments, such as *from my perspective, in our view, in most instances*, and etc.

**Boosters:** On the contrary to hedges which signal the writer's recognition of other voices in the text, boosters or emphatics suppress counter-discussions and opposing views in the text. They signify the author's certainty and confidence and his/her tendency to emphasize his single voice and narrow down the diversities. In order to be committed to the content and to respect the readers, the writer should maintain a balance between the hedges and boosters used in the text (Hyland, 2005a). Emphatics are mainly presented as adjectives (*incontestable, clear, doubtless*, etc.), adverbs (*clearly, evidently, surely*, etc.), verbs (*realize, find, establish, demonstrate*, etc.), phrases (*without doubt, beyond doubt*), and modal auxiliaries (*must, should*) (Abdollahzadeh, 2011).

**Attitude Markers:** Attitude markers illustrate the writer's affective values for propositions. They are the devices which convey feelings of surprise, importance, agreement, frustration, and so on. Generally, there are different linguistic devices such as subordinations, comparisons, punctuations and many others which assist the writer to express his/her attitudes throughout the text. However, metadiscoursally, attitude markers are mainly signaled by verbs (*agree* and *prefer*), adverbs (*amazingly*, *unexpectedly*, *surprisingly*), and adjectives (*astonished*, *hopeful*, *unfortunate*) (Hyland, 2005a).

**Self-mention:** The author has the ability to explicitly present himself/herself in the text through using first person pronouns (*I*, *me*, exclusive *we*, *us*), possessive adjectives (*mine*, *ours*), and using expressions such as *the author*, *the writer*. Explicit use of self-mention items represents the conscious choice of the writer and signifies his authorial identity. Thus, self-mention is a significant rhetorical strategy which reinforces the author's contribution and his/her impression on the reader (Hyland, 2001).

**Engagement Markers:** Engagement markers are the explicit representations of the reader in the text. Hyland (2005b) discussed that by addressing the reader, the writer serves two purposes: (1) to share the disciplinary solidarity with the reader and to address him/her as participant in the argument by using the pronouns of *you*, *your*, and inclusive *we*; (2) to involve the reader in the critical discussions and to accompany him/her in particular interpretations by applying questions and directives (consisting of imperative sentences such as *consider*, *assume*, and *follow* and obligation modals such as *must*, *have to*, *need to*, etc.) and to refer to shared knowledge.

Put it in a nutshell, in social views towards writing process, the writer, as the authority of the text, has the responsibility to anticipate the reader's level of knowledge, his/her stance towards the arguments, and respond to potential doubts raised over their viewpoints. Moreover, in this approach, reader's re-construction of the propositional meaning and his/her rhetorical expectations are of great importance (Hyland, 2004, 2005; Swales, 1990). Metadiscourse markers are devices which support and present the rhetorical conventions of the discourse community, while at the same time provide enough space for the community members to adopt and defend their stance towards the argument, thus avoid potential disputes in the discourse. In fact, interactive markers meet the expectations of the readers in terms of the endorsed organization, coherence, and sequence establish within the text and guide the readers to reconstruct the intended meaning of the writer. Whereas, interactional markers illustrate the writer's willingness to hold a dialogue with the reader; to make the reader involved in the arguments, to attract his/her attention, and recognize his/her potential uncertainties towards the argument.

## **2.5 Culture and Metadiscourse**

There is an inextricable bound between language and culture. Cultural factors influence the way we organize our perceptions and shape the way we interact with our audience and engage them in discourse. This influence can clearly be seen in the way people organize, develop, and share their perceptions in their writings. In fact, research has shown that people from different first language cultures are different in the rhetorical and organizational preferences in their writing practices (Connor, 2002; Hinkle, 2002; Leki, 1991). Robert Kaplan (1966) is considered the first scholar who conducted 'contrastive rhetoric' (CR) studies to explore the differences between what he called the 'cultural thought patterns' of speakers of different languages. He

followed a pedagogical approach in the analysis of the texts written by English native and non-native writers arguing that problems of the non-native students and academics in producing texts were not limited to mastering the lexico-grammatical features of the target language. Rather the inability stemmed in differences in the discursive patterns preferred in their L1 and L2. However, comparing English texts written by native and non-native writers and attributing the differences between the rhetorical patterns only to L1 transfer seemed to be a reductionist approach to rhetorical studies.

Thus, later some scholars expanded the methods of CR studies. Hinds (1980), for instance, argued that different audiences of the texts written in different genres as well as developmental errors of non-native students are other possible sources which might affect the rhetorical patterns used in the texts. To find out the cultural thought patterns of Japanese writers, Hinds (1980) investigated the issue of responsibility between readers and writers in Japanese newspaper columns. He found that Japanese writing style is reader-responsible in that it is the reader who is responsible to interpret the content and to make relationships between different parts of the text. In comparison, English is a writer-responsible language, i.e. it is the writer who is responsible to involve the reader in the content and guide him or her throughout the text. Hinds (1980) introduced 'reader expectations' as one of the influential factors in differences between the writing styles of writers from different first language backgrounds. In a similar way, Clyne (1987) asserted that on the contrary to English writing style which urges the writers to produce a clear and organized, German writing style expects the reader to find out the intended meaning of the writer.

Other scholars attributed the differences between the rhetorical patterns and features not only to L1 transfer but also to other factors such as educational background of the

writers. In their study of Chinese students' L2 writing problems, Mohan and Lo (1985) argued that these problems were mainly due to the emphasis of the educational system on the accuracy of the sentences and to the developmental problems rather than resulting from the negative interference of their L1. They further pointed to other factors which might affect the rhetoric of texts written by non-native Chinese students such as knowledge of the topic, language proficiency level, and their educational experience.

All these studies usually adopt a 'received' view of culture (Connor & Traversa, 2013) in that they view culture as a national and static concept. However, in early and mid-2000s, scholars such as Connor (2002, 2004) and Atkinson (2004) suggested alternative views in these cross-cultural studies through adopting modern views towards the concept of culture and expanding the scope of CR studies through focusing on contexts and texts at the same time. Connor (2004) proposed the term Inter-cultural Rhetoric (IR) to broaden the scope of contrastive rhetoric and encompass small cultures (Holliday, 1999), academic culture and classroom culture (Atkinson, 2004) and their interactions with the national cultures. IR studies underscore the social situation of writing and the reader-writer interactions in the texts and aim to explore the expectations and conventions of different cultural and/or disciplinary discourse communities which embody the rhetorical practices and strategies adopted by the writers to meet the needs of their readers. Today, IR studies include cross-cultural studies on different genres such as academic articles, text-books, business letters, editorials, to name but a few. IR researchers have expanded the borders of these studies from merely focusing on organizational patterns of the essays written by native and non-native ESL and EFL students to the employment of complicated corpus linguistic analyses methods to understand the similarities and differences in the

employment of different linguistic features such as modal verbs, lexical bundles, and metadiscourse markers across a broad range of academic or professional genres (Connor, Nagelout, & Rozicky, 2008).

### **2.5.1 Inter-cultural Metadiscourse Studies**

Metadiscourse has been one of the key linguistic features being widely used in different cross-cultural studies to explore the rhetorical preferences of writers from different language backgrounds. Studying the employment of metadiscourse not only illustrates the organization and inter-textuality of the texts, but also shows the conventions and norms the writers rely on to interact with their potential readers. Thus, a growing body of cross-cultural research aim to compare the way metadiscourse is used in texts written in English and in other languages in specific genres.

Crismore et al.'s (1993) analysis of the employment of metadiscourse in American and Finnish students' persuasive essays is one of the most important comparative cross-cultural studies. This research investigated the universality of metadiscourse and the validity of its sub-categories. The results showed that both groups of students used all the sub-categories of metadiscourse and interactional metadiscourse were used more frequently than interactive metadiscourse. The results suggested that the Finnish writers used significantly more attitude markers and hedges, most probably under the influence of the rhetorical preferences of their first language. The findings were also attributed to less emphasis of the Finnish educational system on writing academic English in the university level. The frequency of text markers and interpretives were found to be roughly the same, although the American writers were shown to use slightly more text markers and the Finnish writers used slightly more interpretive markers in their texts. Such similarities between both groups of writers were discussed to be associated with the generic features of essays and the common persuasive

strategies which are expected to be used in this genre. These conventions might be set by the educational systems and the teaching writing materials.

Milne's (2003) investigation on the use of metadiscourse in the British and Spanish editorials is another key study whose findings should be included in this section. Milne (2003) found that overall Spanish writers used textual metadiscourse, specifically code glasses and sequencing devices more than their British counterparts who used comparatively more interpersonal metadiscourse. The British writers were shown to have tendency to use longer sentences linked by additive makers such as *and*, *moreover*, and *furthermore*. While the British writers tended to use comparatively more adversative markers such as *however* and *in contrast* in their arguments. The results indicated that the Spanish writing style prefers to build the arguments by adding to the original line of discussion, while the British writing style prefers to mention the positive and negative features of a presented idea. Milne (2003) argued that besides such differences which stemmed from the cultural thought patterns of the speakers of these two languages, some textual features of the two groups of editorials were genre-specific. She found that there were similarities between the British and Spanish editorials in the employment of hedges and attitude markers. Accordingly, it is plausible to say that the professional community of journalists use the same generic conventions to mitigate their arguments for their readers and express their personal feelings towards the arguments.

In addition, Hyland (2004) and Hyland and Tse (2004) gave a detailed examination on the employment of metadiscourse through analyzing a four million words corpus of 240 master theses and PhD dissertations written by EFL advanced students in Hong Kong. The corpus contained theses and dissertations from six disciplines of electronic



engineering, computer sciences, business studies, biology, applied linguistics, and public administration. These two studies are significant in that they explored the rhetorical features of the post-graduate genres of theses and dissertations and the differences between the rhetorical preferences of disciplinary communities, rather than focusing on the effects of the national culture of the writers. The analyses of the two corpora revealed that the writers used slightly more interactive markers than the interactional ones. Hedges were found to be the most frequently used metadiscourse. It was argued that high inclusion of hedges illustrated the writers' willingness to distinguish the facts from the personal opinions and to recognize other's voices in the argument.

The comparison between the employment of metadiscourse in the two-degree corpora of master theses and PhD dissertations showed that not only the PhD students were better users of interactive markers, but also totally they used significantly more metadiscourse markers in their texts. The reason could lie behind the fact that the PhD dissertations are usually longer than the Master theses, thus the writers should use more interactive features to write a coherent text and use more complex sentences in their arguments. Using more metadiscourse markers in the PhD dissertations corpus was discussed to be attributed to the attempts of the writers to remain committed to the ideologies and rhetorical norms and conventions of their disciplinary community in order to meet the expectations of their expert readers, to gain approval for their arguments, and to show their competent academic identity.

In discussing the differences across discourse communities in using metadiscourse markers, Hyland (2004) divided the fields into the natural and social sciences in which applied linguistics, public administration, and business studies were considered as the

soft sciences, while computer science, electronic engineering, and biology were among the hard fields. The results revealed that overall social science disciplines used more metadiscourse markers and employed more interactional devices in comparison to the hard sciences. The main differences were observed in the use of hedges, attitude markers, and self-mentions, illustrating the importance of explicit personal interpretations in soft sciences (Hyland, 2000, 2004). He argued that reliance of social sciences on interpretations and the tendency towards interpretive and qualitative methods derives from the fact that in such sciences the writer or researcher deals with humanistic and social issues which are more subjective by nature. Thus, it is the writer's persuasion and language skills and of course crafts of using textual features like discourse markers which guarantee his/her success in establishing the relationship with the reader and negotiating others' voices and opinions within the argument.

In this section, we discussed the employment of metadiscourse across different national, discourse communities, and genres. In the next part, the scope will be narrowed down to only focus on comparative cross-cultural studies which investigated the use of metadiscourse in research articles across different disciplines.

### **2.5.2 Inter-cultural Metadiscourse Studies on Academic Articles**

Research articles are known to be one of the key academic genres, if not the most important one, where writers construct the disciplinary knowledge on the basis of the rhetorical conventions and norms determined by the members of their disciplinary community. Metadiscourse markers, on the other hand, are influential linguistic devices which help the writers to meet these objectives. Studying the use of metadiscourse markers in research articles written by writers from different language backgrounds and in different disciplines provide valuable information regarding the strategies used by the writers of specific disciplinary communities to interact with their

audience and to introduce themselves as competent members of their communities. Thus, there is a growing body of inter-cultural analysis research which investigates the employment of metadiscourse markers between the English-speaking writers and writers from other language backgrounds.

For instance, Mur-Dueñas (2010) investigated the rhetorical features of English and Spanish business management research articles drawing on Hyland's (2005) model. It was found that Spanish writers used fewer metadiscourse, both interactive and interactional, in their academic texts. She argued that the reason might lie in the fact that the English-speaking writers address a wide group of international audience in comparison to the Spanish writers who write for the national readers. The English-speaking writers should leave enough space for the alternative views of the heterogeneous group of international readers and be tentative in expressing their ideas and interpreting their results. Besides the publication contexts, Mur-Dueñas found the reader-responsibility (Hinds, 1980) of the Spanish language an influential feature in the lower frequency of metadiscourse markers in the Spanish articles, arguing that within the same disciplinary community, the two groups of American and Spanish writers meet the expectations of their readers in different ways. While the English-speaking writers follow a writer-responsible (Hinds, 1980) style and explicitly guide the reader throughout the text, the Spanish writers leave it to the reader to interpret the intended meaning of the writer.

Mu, Zhang, Enrich and Hong (2015) investigated the employment of metadiscourse markers in the English and Chinese applied linguistic research articles drawing on Hyland's (2005) model. It was found that the English-speaking writers used more metadiscourse markers in comparison to the Chinese writers and that both groups of

writers used interactive metadiscourse were used more than the interactional ones. Mu et al. (2015) is in line with Mur-Dueñas (2010) in considering the context of publication as one of the influential factors which may result in the less employment of metadiscourse markers in the Chinese research articles written for the local community of Chinese applied linguists. Mu et al. (2015) argued that diversity in the expectations of international readers urges the English-speaking writers to use metadiscourse to explain their ideas and findings in a coherent and explicit way. Mu et al. (2015) also found to some similar features in the English and Chinese applied linguistic research articles. Both groups of articles were similar in the employment of interactive markers transition to guide their readers and evidentials to validate their arguments. Also, in interactional markers, hedges were found to be the most common while attitude markers and engagement markers were the least commonly used features in the analyzed applied linguistic articles. This might indicate the applied linguists' tendency to leave space for the alternative voices and to stay neutral and objective in their arguments.

In another study, Cao and Hu (2011) limited the scope of their study to investigate the employment of hedges and boosters in the abstract sections of applied linguistic articles published in English and Chinese journals. They compared the metadiscursive strategies used in the Chinese abstracts written by the Chinese writers, the English abstracts written by the Chinese writers, and the English abstracts written by the English-speaking writers. The differences between the Chinese and English abstracts were discussed to be associated to the rhetorical conventions of the English and Chinese writing styles. While in the Aristotelian principles of English academic writing mitigating the claims and addressing opposing views through using hedges is

advised, in the Confucian and Taoist traditions of Chinese writing style, writers are expected to emphasize their certainty of what they claim and convey their credibility through using boosters. Moreover, Cao and Hu (2011) attributed the rhetorical differences between the English abstracts written by the Chinese writers and those written by the English-speaking writers to the relatively lower proficiency level of the Chinese writers in English, in comparison to their native counterparts. According to the results, the Chinese writers did not seem to be highly competent in using the appropriate hedging and boosting strategies in their English abstracts.

Jalilifar (2011) investigated the employment of hedges and boosters in the discussion sections of psychiatry and English Language Teaching research articles. The compiled corpus consisted of English articles written in English, Persian articles written by Persian writers, and English articles written by Persian writers. Major similarities were found in the employment of hedges and boosters between the English articles written by the English-speaking and Persian writers. It was argued that the similarities were associated with the awareness of the Persian writers of the norms and conventions of the international readers. The differences found between the English and Persian articles, on the other hand, were discussed to be in part related to the structural differences between English and Persian languages and to the publication contexts of the articles where the English-speaking writers publish in international journals while the Persian writers write and publish their articles for the local community of readers.

In another study, Abdollahzadeh (2011) investigated the employment of hedges, boosters, and attitude markers in the conclusion sections of English applied linguistic articles written by the Anglo-American and the Persian academic writers. Both groups of writers were found to have tendency to hedge their claims and adopt a tentative

language to convince their readers. The major differences were in the lower employment of boosters and attitude markers by the Persian writers. Awareness of the expectations of the audience, the contexts of publication, inter-cultural backgrounds of the writers, and the generic features of applied linguistic articles were suggested to be the possible factors which might affect the rhetorical preferences of the two groups of writers in the study.

### **2.5.3 Interactional Metadiscourse in Persian Academic Articles**

Having a glance at the literature of metadiscourse studies reveals the recent willingness of some Iranian researchers to conduct comparative cross-cultural studies to explore the metadiscursive and rhetorical features of academic texts in English and Persian languages drawing on Hyland's (2005) interpersonal model of metadiscourse. In this section, we will take a look at the findings of some of these studies. It is worth mentioning that since the focus of this study is on the employment of interactional metadiscourse markers, our main focus is on the results which are related to the employment of interactional metadiscourse markers in the English and Persian research articles.

In one of the most recent studies, Salar and Ghonsooly (2016) conducted a cross-cultural study on rhetorical patterns of Persian and English articles drawing on Hyland's (2005) model to investigate the differences between the use of both interactive and interactional discourse markers by English-speaking and Persian writers in the introduction section of articles in the field of knowledge management. The results revealed that there was no significant difference between the writers of both languages in using interactive metadiscourse markers. However, considering the use of interactional metadiscourse markers, the researchers argued that the Persian writers used less interactional features in the texts. The English-speaking writers were

found to use considerably more hedges and boosters in the introduction sections of their articles. However, there was no significant difference in the employment of attitude markers, engagement markers and self-mentions between the two groups. Salar and Ghonsooly (2016) discussed that more frequent use of interactional metadiscourse markers in the English articles illustrated that writer-reader relationship in the English texts is stronger than the Persian texts. Moreover, Salar and Ghonsooly (2016) acknowledged Mur-Dueñas' (2010) discussion that English-speaking writers address heterogeneous community of international audiences and are therefore required to follow a more cautious and recognize alternative voices. While, Persian writers who write in Persian are required to convince local audiences with possibly different, usually local-culture bound rhetorical and persuasive strategies.

Taki and Jafarpour (2012) limited the scope of their study and only studied the similarities and differences between the employments of interactional metadiscourse markers in 120 English and Persian research articles in the fields of chemistry and sociology. According to the results, in total the Persian writers used more interactional metadiscourse markers in both chemistry and sociology articles. The major findings of this research showed that in sociology articles the English-speaking writers used hedges twice more than the Persian writers do. The Persian writers used significantly more attitude markers in both chemistry and sociology articles in comparison to the English-speaking ones. It was also found that the two groups differed in the self-mention features they preferred to use in their academic discussions. While the English-speaking writers used first-person subjective, objective, and possessive pronouns to show their authorial self, the Persian writers most probably intentionally avoid using first person pronouns and in some few cases only referred to their authorial identity through using some words which were the equivalences of 'researcher'.

Regarding the implementation of engagement markers, the researchers discuss that Persian and English languages differ in ‘reader pronouns’, in that the linguistic structure of English relies on subject and object pronouns and possessive adjectives to connect to the reader, whereas in Persian language the writer mainly uses verb inflections to interact with the reader.

Furthermore, Zarei and Mansouri (2011) investigated the interactive and interactional metadiscourse elements used across the disciplines of applied linguistics and computer engineering research articles written by Persian and English-speaking writers. The analysis of the relatively small corpora which consisted of a total number of 19 articles, revealed a higher inclusion of interactive features in Persian articles in both disciplines. The analysis of interactional metadiscourse showed that the English-speaking writers used more hedges, self-mentions and engagement markers, while their Persian counterparts used more attitude markers, boosters. Differences in the socio-cultural systems of communication across languages and reader-reliability of Persian and writer-reliability of English were discussed to be the main sources of different rhetorical preferences between the two groups of writers.

In the investigation of metadiscourse resources used in 90 discussion sections of applied linguistics research articles written by three groups of English texts written by native English writers, English texts written by Persian writers and Persian texts of Iranian writers, Faghih and Rahimpour (2009) argued that the English-speaking writers used more hedges, boosters, and attitude markers while the Persian writers used more engagement markers and self-mentions. There were also significant increase in the frequency of hedges and boosters and decreases in the frequency of attitude



markers, engagement markers, and self-mentions in the English texts written by the Iranian writers.

## **2.6 Lexical Bundles**

Lexical bundles are defined as multi-word expressions which are frequently used in a specific register (Biber et al., 1999) and are known as the components of a fluent writing (Hyland, 2008). Hyland (2008) defined them as formulaic patterns such as *in accordance with*, *on the other hand*, *should be noted that*, and *as you can see* whose appropriate and frequent use increases the ‘naturalness’ and fluency of a text. He stated that the investigation of lexical bundles is not only useful for the discourse analyzers but also for ESL and EFL students and that learning the common lexical bundles in each register will increase the communicative competence of the students in a specific field of study, make them aware of the rhetorical practices of specific registers and assist them to increase the fluency of their writings.

Biber et al. (1999) stated that the frequency of lexical bundles is one of their distinguished features since they need to occur 20 times in a-million-word corpus in a specific register to be considered as a bundle. These frequent word combinations, which are identified by computer programs, do not necessarily need to follow a specific structural unit and are usually fragmented phrases or clauses with embedded fragments (Cortes, 2004). Biber et al. (1999) found a number of common structures for 4-word bundles such as noun phrase + of such as *the meaning of the*, *the end of the*, anticipatory it followed by adjectives or verbs such as *it is vital to*, *it is important that*, and passive+ prepositional phrases such as *will be discussed in*, *were found in the*, and *is given by equation*.

In bundle studies, the structural analysis is usually followed by investigating the functions of the identified bundles. Biber, Conrad, and Cortes (2003) identified three primary functions for lexical bundles, namely referential bundles, discourse organizers, and stance bundles. More recently, Hyland (2008) classified lexical bundles on the basis of their functions. In his model, lexical bundles are divided into research-oriented bundles, text-oriented bundles, and participant-oriented functions. Like Hyland's (2005a) metadiscourse model, his classification of lexical bundles is based on Halliday's (1994) systematic functional linguistics. While Biber et al.'s (2003) model is mainly based on spoken discourse, Hyland's categorization is based on the analysis of written academic discourses.

In Hyland's (2008) functional model of lexical bundles, research-oriented bundles deal with real-world activities and experiences such as location (time and place), procedures, quantification, description, and topic. In this model, text-oriented bundles serve a textual and organizational functions. This category includes transition signals, resultative signals, structuring signals, and framing signals. Finally, participant-oriented bundles fulfill interactional functions and deal with the writer-reader relationships in the text using stance and engagement features. Stance features deal with the textual voice of the writer and the way writers express their authorial self, their commitments and personal attitudes towards the propositions. Engagement features enables the writers to establish direct relationships with their readers through considering their uncertainties, involving them into cognitive acts, and guiding them throughout the text to understand the interpretations and intended meanings of the writers. Participant-oriented bundles contains The epistemic and affective features of participant-oriented bundles are realized by hedges, boosters, attitude markers, and

self-mention elements and engagement bundles include directives and reader pronouns.

The presence of hedges, boosters, and other metadiscourse resources in Hyland's (2008) participant-oriented bundle category clearly shows the intertwined relationship between the concepts of lexical bundles and metadiscourse, specifically, interactional metadiscourse markers, from structural and functional perspectives. As it was discussed earlier, there are also strong relationships between Biber et al.'s (1999) and Hyland's (2008) functional taxonomies of lexical bundles with Crismore et al.'s (1993) and Hyland's (2005a) interpersonal models of metadiscourse. Similarities and relationships between these two concepts is not limited to the proposed structural and functional models. In a discussion on similarities between the two concepts Li (2016) stated that both are non-propositional features of the texts which deal with the stance of the writer and the referential and textual aspect of the text.

Furthermore, research on lexical bundles shows that, similar to metadiscourse markers, the employment of bundles in the academic texts varies across genres and disciplines (Jalali, 2017). For instance, Biber (2006) found that there are significant differences in the frequency and functions of lexical bundles between the two genres of classroom talks and textbooks. The number of lexical bundles in a teacher's classroom talk was four times more than that textbooks. Biber attributed the differences to the fact that classroom talk largely relies on both written and spoken genres. In another study, Chen and Baker (2010) investigated the employment of lexical bundles in three genres of published academic texts, as well as native and non-native student academic writings. Results revealed structural similarities between native and non-native university

students in the use of lexical bundles, yet showed a gap between the bundles used in the published writings and student writings.

In a cross-disciplinary study, Cortes (2004) compared the employment of lexical bundles in published writings and student writings across two fields of history and biology. The results showed that the students in these two disciplines did not use the lexical bundles frequently used in the published writings. The analysis showed significant differences between the structures and functions of lexical bundles in history and biology published writings. In the same line, Hyland (2008) investigated the realization of lexical bundles and their structural and functional characteristics in research articles, PhD dissertations, and Master theses in the fields of electrical engineering, biology, business studies, and applied linguistics. The results of this study supported the findings of Cortes (2004) and Biber (2006) which demonstrated notable structural and functional variations in different academic genres and across the disciplines. The discipline-based differences were discussed to be attributed to differences in the argumentation and persuasion methods preferred in different academic communities. Hyland (2008) further underscored the key roles that corpus-driven lists and concordancing programs could have on teaching the frequently used lexical bundles in academic genres and developing EAP materials accordingly. He stated that making students familiar with varieties of consciousness-raising and controlled productive tasks regarding the appropriate employment of lexical bundles can assist them to increase the naturalness of their writings.

## **2.7 Teaching Metadiscourse**

Metadiscourse markers are key features in communication since they have a significant influence on coherence, persuasiveness and affectiveness of the discourse.

In fact, raising the awareness of ESL and EFL and also first language writers of the functions and structures of metadiscourse provides them with valuable advantages. The knowledge of metadiscourse assists the writers to understand how they can guide and involve their readers in the texts. It provides them with the devices to show their stance and share their personal feelings about the propositions.

However, as textlinguistic features, metadiscourse had not attracted much attention in language teaching in general and academic writing in particular, until recent years (Dastjerdi & Shirzad, 2010). Even today, the central roles that metadiscourse strategies and rhetorical functions play in different types of discourse, whether spoken or written, are widely overlooked (Hyland, 2005a). It is only in recent years that studying the effects of explicit teaching of metadiscourse and their functions on non-native learners' second language skills, especially in academic skills of reading (Al-Qahtani, 2015; Jalilifar & Alipour, 2007) and writing (Farhadi, Aidinloo, & Talebi, 2016; Sarani & Talati-Baghsiahi, 2017) have gained some attentions in English for Academic Purposes (EAP) and English Language Teaching (ELT) studies.

Steffenson and Cheng's (1996) study is considered one of the early investigations on the impacts of explicit instruction of metadiscourse on the writing skills of the college students and their views towards their readers. Based on the results, not only the students started to use metadiscourse markers appropriately, but also raised their awareness of the expectations of their potential readers. In another study, Dastjerdi and Shirzad (2010) examined the investigation of explicit instruction of metadiscourse on Iranian learners' writing performance at three levels elementary, intermediate, and advanced levels. Metadiscourse instruction was found to be the most effective in the writings of the intermediate level students and the least on the advanced level.

Yaghoubi and Ardestani (2014) found that explicit and implicit strategies to teach metadiscourse are both effective in improving the writing skills of the advanced level students.

Amiryousefi and Eslami Rasekh (2010) in their discussions on the implications of metadiscourse argued that EFL and ESL teachers must be aware that explicit instruction of metadiscourse markers and their functions encourages the students to revise their knowledge of grammar and vocabulary and gain a new perspective towards language use. Highlighting the functions of metadiscourse in different contexts raises the awareness of the students of the systematic structure of the language, and the way grammar and vocabulary interact to construct meaning. They further added that teaching metadiscourse showed the students how they could interact with their readers successfully through appropriate employment of grammar and vocabulary.

In addition, Hyland (2005a) discussed that rhetorical consciousness-raising tasks used to teach metadiscourse open up discussions on issues such as mitigation, self-presentation, stance, and voice which are often neglected in other teaching writing approaches. In discussing the teaching principles of metadiscourse instruction, Hyland (2005a) referred to Swales' (1990) 'rhetorical consciousness raising' approach which makes the students aware of the genre- and discipline-specific rhetorical features and conventions and their effects on the writer-reader interactions and coherence of the texts. This approach aims to encourage the students to be actively engaged in analyzing the discourse and explore the rhetorical practices of their academic disciplinary communities. Thus, the teachers are expected to consider some basic elements. Firstly, they are required to select the writing tasks and samples which are similar to the target genres that the students usually deal with them in their target situations. For instance,

for university students extracts of academic articles, theses, and academic reports are considered the most appropriate. The students, then, should become familiar with the characteristics of writer-reader relationships and the common rhetorical features in those genres. This may include enabling the students to explore the way writers use metadiscourse for different functional purposes.

Hyland (2005a) further stated the educational, national, and social backgrounds of the students might also directly affect the rhetorical strategies and practices they use in their writings. The designed tasks should provide appropriate models of the rhetorical conventions of the target genres while at the same time allow the students to use appropriate alternative practices, they bring with themselves to their writings. In fact, using authentic texts which are relevant to the target genre or situation of the students in writing classes can provide them with the real samples of employment of rhetorical features such as metadiscourse markers and their functions. Through using authentic texts, students would be able to see the way metadiscourse markers create the coherence of the texts, establish relationships between the writers and the readers and assist the writers to meet the norms and expectations of the target discourse community (Hyland, 2005a).

## **2.8 Summary**

The first sections of this chapter included detailed discussions on the main concepts in metadiscourse studies in academic contexts including academic discourse, discourse community, knowledge domains, genres, academic genres, and the characteristics of genre studies. Later, the concept of metadiscourse, different models of metadiscourse, namely VandKopple's (1985) and Crismore et al. (1993), were presented. Then, Hyland's (2005a) interpersonal model of metadiscourse and its principles and

resources were explained in detail. In the next part, a number of inter-cultural studies on the employment of metadiscourse in different academic genres, particularly academic articles, were reviewed. Later, the concept of lexical bundles and its relationship with metadiscourse studies were discussed. In the final section of this chapter, the pedagogical implications of studies on metadiscourse markers for ESL and EFL students and the related studies in this area were explicated.



## Chapter 3

### METHODOLOGY

This chapter presents the details and steps of the methodology used in the present study. Accordingly, the design of the study is presented and then data collection procedures are explained. Data analysis details are discussed in the final section. The final section explains the issues regarding the validity and reliability of the research results.

#### 3.1 Design of the Study

The present study aims at exploring the similarities and differences between English and Persian architectural articles through investigating the interactional metadiscourse markers. To this end, the implementation of interactional metadiscourse markers by the two groups of English-speaking and Persian academic writers is investigated through analyzing the academic articles written by Persian and English native speakers in the field of architecture. In other words, the researcher intends to offer an intercultural description of the rhetorical patterns used in this academic genre. To this end, this study follows an ‘exploratory-descriptive’ approach in research methodology.

The present study adopts an ‘exploratory’ paradigm as its primary purpose is exploring the rhetorical patterns used in the academic genres. This is because, in general, the primary goal of exploratory studies is to understand the individual characteristics, motivations, and the cultural factors which have caused human behaviors or social phenomena (Reither, 2017). In other words, as Reither (2017) states an exploratory

researcher believes that the social behaviours are constructed by individual and or social groups over time and the objective of this type of research is to analytically deconstruct those behaviours to unveil the purpose and functions behind them. Exploratory research design begins with a robust theory and a clear hypothesis formulation. However, unlike confirmatory research, Exploratory research does not intend to accept or reject the hypothesis. Rather, it shows how well a theory or hypothesis can offer an explanation about the connection between the social phenomenon and the deriving factors. Grotjhan (1987) argues that the main objective of exploratory research is to offer an unbiased exploration of the reality. Thus, text or content analysis are the main sources of data in such research. The analysis of these sources enables the researchers to broaden their understanding of how the participants of the research view themselves, and the worlds around them, and how they construct their knowledge of these worlds.

Moreover, the present study follows a ‘descriptive’ approach. Descriptive research is also known as ‘interpretive’ (McDonough & McDonough, 1997), or ‘naturalistic’ (Nunan & Bailey, 2009) research. Descriptive research is naturalistic since the researcher investigates real-world events which have already happened. In such studies, the researcher relies on his/her subjective interpretations and personal understanding and adopts an emic perspective through which s/he can gain a deeper social and cultural view towards real world’s phenomena (Ellis, 2012). The data is usually non-manipulated and sampling is purposeful. Samples are selected and are expected to be rich sources of data. This is because the aim of descriptive research is to describe the data rather than generalization of the results (Best & Kahn, 2006). In such research, qualitative strategies such as observations and interviews, which are generally followed by discourse analysis techniques, help the researcher to form

hypotheses. In some sub-categories of descriptive research, the researcher collects the data from the natural environment and works with direct sources such as interviews gathered from the participants or direct observation of the phenomenon (Ellis, 2012).

In other categories such as ‘text analysis’ studies, also known as ‘written discourse analysis’ (Hoey, 2001; Kaplan & Grabe, 2002), data come from somehow indirect sources such as magazine articles, essays, and periodicals to study human behaviours and the cultural issues behind them (Ellis, 2012). According to Frankle and Wallen (2008), working on textual data enables the researcher to overcome the limitations imposed by time and space and to explore the social behaviors across communities within various time intervals. They further argue that the textuality of data in these studies allows the researcher to avoid one of the common problems of researchers in social sciences studies, known as the observer’s paradox which takes place in situations where the presence of the investigator in the research setting unwittingly affects the authenticity of the data. In other words, since in text analysis studies the author is unaware of being examined by the researcher, he acts naturally; thus, it can be said that the data remain intact.

As it was discussed, the present study adopts an exploratory-descriptive approach to deeply explore the textual features and the patterns used in the academic articles, and to offer logical interpretations about the cultural issues which seems to affect different rhetorical features used by English-speaking and Persian writers in this genre. According to the above-mentioned discussions, text analysis studies are an integral part of both exploratory and descriptive research, it is required to identify the characteristics of textual studies in more details.

Kaplan and Grabe (2002) defined 'text analysis' studies, or as they called 'written-discourse analysis', as "the systematic analyses of the linguistic features and patterns occurring in written text" (p. 192). In such a definition the term 'text' is a purposeful interaction between writers and readers, in which the writer(s) is the controller and producer of the whole interaction (Hoey, 2001). However, these general definitions are narrowed down when it comes to different perspectives of text analysis. The analysis of texts can be examined in different areas of text-linguistics, cognitive models, discourse analysis, and contrastive rhetoric (Kaplan & Grabe, 2002). Since the primary purpose of this study is to compare the academic texts written by writers from two different languages, its adopted texts analysis perspectives are discourse analysis and contrastive rhetoric which is also known as 'contrastive discourse analysis' (Hellinger & Ammon, 1996) and 'inter-cultural rhetoric' (Connor, 2004).

Furthermore, written discourse analysis enables the researcher to use a consistent framework to explore the structures of the text (Kaplan & Grabe, 2002). These frameworks fall within the three main fields of 'linguistic discourse analysis', 'English studies', and 'applied linguistics'. In their discussion on linguistic approaches to written discourse analysis, Kaplan and Grabe (2002) argue that the linguistic discourse analysis has little to do with the classical linguistics, or better to say Chomskian linguistics. In other words, in the linguistic approach the discourse analyst makes theories and observations about the naturally occurring language and does not deal with ideal sentences out of context and in isolation. Further, they discuss that the association of the concept of discourse with that of 'language use within the context' has led to the development of various discourse analysis approaches in more practical areas of linguistics such as descriptive linguistics, functional linguistics, and systematic linguistics.

Besides practical linguistics, text analysis has had significant contribution to academic English studies and has been widely applied in different fields of literacy criticism and semiotics, stylistics, linguistics and rhetoric, rhetorical studies, and writing and composition studies (Kaplan & Grabe, 2002). Having a glance at the literature in these areas reveals the influential role of text analysis in gaining a deeper understanding of the linguistic and rhetorical features of English language which eventually has led to the development of new movements in teaching writing and composition studies.

The third area of research which has made numerous contributions to written discourse analysis is the interdisciplinary field of applied linguistics. According to Kaplan and Grabe (2002), the interdisciplinary nature of applied linguistics adapts the notion of “language as discourse” (p. 210) as a key for resolving the real-world problems. Thus, an applied linguist finds the opportunity to use written discourse analysis in a wide range of topics including studies on teaching English as a second or foreign language, studies on English for Specific Purposes (ESP) and English for Academic Purposes (EAP), discourse description and genre-related studies, corpus linguistics, critical discourse analysis, and language use in professional settings.

Ferris (2011) argues that inter-cultural studies, similar to the present one, which use corpus linguistic methodology to explore and compare the rhetorical features used in a specific genre fall within the category of applied linguistics research. Such inter-cultural studies stand in the intersection between different sub-categories of applied linguistics study including inter-cultural rhetoric, genre studies, and corpus linguistics. The inter-cultural aspect of this study is associated with the cross-cultural investigation of the rhetorical patterns used by Persian and English-speaking academic writers. The genre-based nature of the research addresses the discursive elements used in

architectural research papers. Finally, compiling a corpus containing some extracts of 100 English and Persian research papers and the employment of a discourse analysis program to analyze the data is the corpus-based aspect of this study.

It is worth noting that in this study corpus linguistics is mainly viewed as a technology (Tardy & Swales, 2008). According to Tardy and Swales (2008), corpus linguistics can be seen as a technology of using text analysis software programs to draw up with frequency, key word, and collocation lists. This approach, however, is in contrast with the other theoretical trends which view corpus linguistics as a specific research approach in text analysis studies (Conrad, 2005). Conrad (2005) defines corpus linguistics as a quantitative and empirical research approach which aims at describing language patterns and uses computer-assisted automatic analysis techniques to find intended linguistic features.

To put it in a nutshell, in order to explore the rhetorical differences between English and Persian articles, the present study adopts an exploratory-descriptive approach for the analysis of a written discourse genre, namely research articles. The textual analysis of the research articles and their inter-cultural comparison places the research design of this study in the overlap of the three fields of genre analysis, inter-cultural rhetoric, and corpus linguistics. In the next section, we will discuss the theoretical framework in detail.

### **3.1.1 Theoretical Framework of the Study**

The theoretical framework of the present study is grounded on Hyland's (2005a) interpersonal model of metadiscourse markers (Table 3.1). According to this model, metadiscourse markers are divided into two functional categories: 'interactive' and 'interactional'. While interactive resources (transitions, frame markers, endophoric

markers, evidentials, and code glasses) assist the writer to organize the discourse explicitly, interactional resources (hedges, boosters, attitude markers, engagement markers, and self-mentions) enable the writer to express his/her attitudes and stance towards the arguments (Hyland, 2005a).

It is essential to note that in this study we only investigate the implementation of interactional metadiscourse markers in the academic genre of research papers. The reason lies in the fact that interactional resources assist the writers to express their affective and attitudes as well personal uncertainties about the propositions. These features also provide the opportunity for the writers to strengthen their arguments and to show their confidence in support of their findings and emphasize the validity of their results. Moreover, interactional metadiscourse markers not only assist the writers to express their personal stance towards the propositional information, but also involve the readers into the arguments. Interactional resources provide the opportunity for the readers to contribute to the presented discussions by becoming aware of the writer's certainties, uncertainties, and personal feelings. In addition, these features explicitly address the reader, meet their expectations, and pull them into the discussions at critical points (Hyland, 2005a).

Table 3.1: Hyland's (2005a) Interactional Metadiscourse Markers

<b>Category</b>	<b>Function</b>	<b>Examples/Signals</b>
<b>Hedges</b>	Withhold commitment and open dialogue	<i>might, perhaps, possible</i>
<b>Boosters</b>	Emphasize certainty or close dialogue	<i>in fact, definitely, clear</i>
<b>Attitude Markers</b>	Express writer's attitudes to proposition	<i>desirably, agree, prefer</i>
<b>Self-mentions</b>	Explicitly build relationship with reader	<i>I, we, my, me, our, author</i>
<b>Engagement Markers</b>	Explicit reference to authors	<i>think of, note, let us</i>

## **3.2 Data Collection**

The data collection section is composed of three different parts. In the first part, the characteristics of the corpus and the criteria met in the corpus compilation are discussed. The second part is allocated to the corpus compilation procedure which describes the issues of comparability between the sub-corpora of English and Persian. The third part of the data collection section describes the process of compiling a list of Persian metadiscourse markers in detail.

### **3.2.1 Corpus Characteristics**

In exploring the rhetorical differences in the employment of interactional metadiscourse markers among English-speaking and Persian academic writers, the first step is to compile a corpus consisting of two sub-corpora of English and Persian academic text. In the design of a corpus there are three issues of representativeness, balance, and size which needs to be taken into consideration (Hunston, 2008).

The first factor which must be taken into account is the representativeness (Biber, 1993; Hunston, 2008) of the corpus. Hunston (2008) defines representativeness as the “relationship between the corpus and the body of language it is being used to represent” (p. 160). In other words, a corpus is a sample of the language being used. He further argues that for a corpus to be an ideal representative of a language, it needs to include a wide range of topics and a wide range of writers. Considering the issue of representativeness, in this study, some steps were taken. Firstly, the corpus used in our investigation includes academic articles published in the field of architecture. This is because research articles are known as the primary genre of the academic language. They represent the cognitive, social, and affective factors of the academic language. In fact, research articles are the genres which directly concerned with knowledge



construction process and academic negotiations between expert community members (Hyland, 2009).

Moreover, in order to meet the conditions of representativeness, i.e. including a wide range of topics and writers, the compiled corpus in this study includes different architecture topics including historical architecture, landscape architecture, and architectural design and urban planning. It is worth noting that the articles used in the corpus are written by more than two hundred fifty English-speaking and Persian writers from different countries across the world such as Iran, the US, the UK, Canada, Australia.

The second issue which needs to be taken into consideration in corpus compilation is keeping the internal balance of the corpus. Hunston (2008) suggests that balance “implies explicitness in corpus description” (p.164) and that keeping the balance between the sub-corpora makes their comparison feasible. She argues that corpora can be balanced in terms of factors such as number of texts and the number of tokens. Moreover, the compiled corpus can also be equally subdivided by other factors such as academic subjects (natural sciences, social sciences, humanities, etc.), and the level of the participants (undergraduate, post-graduate, etc.). Balancing the corpora, the corpus analysts can make sure that the frequent occurrence of a linguistic feature in each sub-corpus is associated with the rhetorical features of that sub-corpus and is not due to the imbalance between sub-corpora. Considering the above-mentioned discussion and the objectives of the present study, the compiled corpus is balanced in terms of text numbers and first language of the academic writers (50 Persian articles written by Persian writers and 50 English articles written by English-speaking writers).

The next issue which needs to be taken into consideration in the corpus compilation process is the size of the corpus. The optimal size for a corpus has always been a controversial issue in corpus and genre analysis studies. On the one hand, it would be heard that we are living in the era of large corpora, and the larger a corpus is, the more comprehensive data can be obtained. In fact, large corpora such as the British National Corpus (BNC), or the Collins COBUILD English Language Dictionary (Sinclair, 1987) have played a key role in lexicography, phraseology, and macro-patterning studies (Hunston, 2008; Sinclair, 2004). On the other hand, some researchers believe the first decade of the 21<sup>st</sup> century is the decade of fairly small, and specialized corpora (Tardy & Swales, 2008), which can even be limited, as Tardy and Swales (2008) exemplify, to only 50 research articles. Hunston (2008) discusses that the aim and methods of investigation are the main issues which needs to be considered in determining the size of the compiled corpus. For instance, where the compiled data needs to be annotated or edited manually, or in case close control on the data is required to ensure the comparability between corpora, the size of the corpus should be relatively small. Regarding the practicality of small, genre-specific corpora, Lee (2001) notes that small specialized corpora are more suitable for genre analyses and extensively annotated studies which investigate the pragmatic and contextual features of different types of discourse.

Considering the point that this study follows an exploratory-descriptive approach in offering a cross-cultural description of the rhetorical differences between the two languages of English and Persian, we preferred to compile a relatively small corpus, including 219,914 tokens. The English sub-corpus includes 113,300 tokens and the Persian sub-corpus includes 106,614 tokens. This corpus size for a genre analysis study is suitable (Tardy & Swales, 2008), since it enables us to ensure the comparability of

English and Persian sub-corpora (The issue of comparability of the sub-corpora is discussed in section 3.2.1 Data collection procedure: Corpus compilation). Moreover, since the sub-corpora are compared based on the frequencies of interactional metadiscourse markers, the data was edited manually. The limited size of the corpus used in this study makes the process of manual edition possible and thus, increases the adequacy of the results.

So far, we discussed the corpus compilation issues of the present study. It is also essential to describe other characteristics of the compiled corpus. As it was explained earlier in this chapter, the corpus includes 100 articles written in the field of architecture. Thus, it is important to discuss the characteristics of architectural research in detail. Besides corpus compilation issues, there are two questions which needs to be answered in this section. The first question is why this study focuses on the ‘post-method’ sections of the research papers, and the second question is why it focuses on the articles published in the discipline of architecture.

First, in order to answer the first question, the corpus includes research articles which follow Swales’s (1990) Introduction, Method, Result, and Discussion (IMRD) pattern. Considering the rhetorical moves in the articles makes the analysis more reliable and classified and provides the opportunity for more meaningful and in-depth interpretations. However, what needs to be taken into consideration is that the articles do not always follow a step-by-step IMRD pattern. As Swales (1990) states some articles coalesce the result and discussion sections, others contain additional sections such as implications, conclusions, or applications. The coalesced post-method sections, however, enable the researcher to offer a more representative and comprehensive sample of the persuasive and argumentative language used in research

articles. The analysis of interactional metadiscourse markers used in the post-method sections of the architecture articles enables us to explore the rhetorical features used by the writers to persuade their readers about the legitimacy of the findings. Analysis of the post-method sections of the articles can also show the way writers compare, contrast and support the results of their studies with the body of the literature and how they present their arguments and new claims in their discussions.

Another point which needs to be added is that our compiled corpus only includes the 'post-method' texts and the tables, figures, notes, references, acknowledgements of the articles are removed.

The second question which needs to be discussed is why this study focuses on the discipline of architecture. The reason lies in the special disciplinarity status of architecture. Architecture is a 'unique' discipline, since it encompasses different approaches to research, from building sciences and built environments, to humanistic and social sciences, and art and design or visual research (Jenkins, Forsyth, & Smith, 2004; Rendell, 2004). Thus, architectural articles follow varieties of methodologies and research designs. Obviously, the unique status of architecture as a discipline, or better to say an inter-discipline (Rendell, 2004), is one of our main reasons to investigate the rhetorical patterns used in the experimental articles written in this field.

There is also another reason for selecting the field of architecture. Unfortunately, architecture is one of the disciplinary fields which have been widely ignored in academic genre analysis studies and little is known about the rhetorical features of different academic genres which are produced in this discipline. The uniqueness of

architectural research and the lack of information about the textual features of architecture articles are the main reasons for selecting this field of study.

In sum, in order to explore the rhetorical differences between English and Persian academic articles, we constructed a corpus which meets Hunston's (2008) corpus compilation criteria, namely representativeness, balance, and size. The corpus includes the post-method sections of 100 research articles (50 English articles written by English-speaking writers and 50 Persian articles written by Persian writers). The articles are selected from different sub-fields of architecture including historical architecture, landscape architecture, and architectural design and urban planning. The compiled corpus consists of 219,914 tokens.

### **3.2.2 Data Collection Procedure: Corpus Compilation**

In comparative genre analysis studies, similar to this one, it is important to ensure that the compiled corpora are comparable. Meeting the comparability criteria would help the researcher to assure that the final results of the corpus analysis truly represent the specific rhetorical characteristics caused by different first language backgrounds of the writers and their textual preferences, rather than reflecting genre-related differences between the corpora (Ädel, 2006). According to Ädel (2006), in order to make sure that the sub-corpora are comparable some criteria must be met. First, the selected texts must be qualitatively similar. Second, they also need to be written within the same time intervals. Moreover, when the aim is to investigate the genre of research papers, it is essential to ensure that all papers follow the same research type. Considering the above-mentioned discussion, in this section, we explain how the comparability criteria were met in the corpus construction process of this study.

First and foremost, the articles are selected from the leading journals of architecture to assure the high quality of English and Persian architecture articles. In order to select the leading journals of architecture published in English, the evaluation lists of SCImago journal rank (SJR) and Thomson Reuters' impact factor (IF) were taken into account. The researcher selected the top journals in the field of architecture and urban design, which were cited in both lists. The list of the journals and their publication information is presented below in Table 3.2. It is worth noting that, as it is shown in Table 3.2, the journals are selected from different publications and the differences between British and English were not taken into consideration.

Table 3.2: The List of English Journals in the Corpus

<b>Title of Journals</b>	<b>Country</b>	<b>Publication</b>
Architectural Science Review	the UK	Routledge
International Journal of Architectural Heritage: Conservation, Analysis, and Restoration	the UK	Routledge
Journal of Architectural Planning and Research	the US	Locke Science Publishing
Landscape and Urban Planning	the US	Elsevier Publication
Journal of Architecture	the UK	Routledge

The articles written by Iranian authors, on the other hand, were selected from the leading local research journals which are scientifically verified by the Iranian Ministry of Sciences, Research, and Technology (MSRT). The MSRT evaluates and ranks the Iranian journals based on the criteria, such as regular publication of the issues, high science citation index, standardization of the web-site, and suitability of software programs (<http://journals.msrt.ir>). The following three journals were selected: (1) Iranian Architectural Studies, (2) Iranian Architecture and Urban Planning, and (3) Bagh-e-Nazar (Table 3.3).

Table 3.3: The list of Iranian Journals Used in the Corpus

<b>Title of Journals</b>	<b>Country</b>	<b>Publication</b>
"مطالعات معماری ایران" Iranian Journal of Architectural Studies	Iran	University of Kashan
"شهرسازی و معماری ایران" Iranian Architecture and Urban Planning	Iran	Iranian Community of Architecture and Urban Planning
"باغ نظر" Bagh-e-Nazar	Iran	Art, Architecture, and Urban Designing Research Center of Nazar

Issues relating to copy-right permission and unavailability of suitable usable form of articles limited the number of selected journals to three in the Persian sub-corpus. Moreover, it should be highlighted that the writers of the selected English articles had English names and surnames and were affiliated with English-speaking countries. In the same way, the writers of the Persian articles had Persian names and surnames and were affiliated with Iranian universities.

The second criterion to be met in keeping the comparability of the corpora is the unity of the Persian and English research papers in terms of their research type. To this end, the researcher selected the articles which follow Swale's (1990) Introduction, Method, Results, and Discussion (IMRD) structure. The reason lies within the fact that such segmentations offer more classified and reliable data which can be later used for different pedagogical purposes, such as teaching academic lexicon and grammar, teaching second language writing, or even developing academic language teaching materials.

Moreover, in order to make the corpora chronologically comparable, the researcher set a five-year interval period and selected those research papers which were published between 2010 and 2015.

### **3.2.3 Data Collection Procedure: Persian Metadiscourse Markers List**

The present study uses metadiscourse analysis to explore the rhetorical features of Persian and English in the academic context. Undoubtedly, the primary need would be providing the list of the most common metadiscourse markers in the two languages. In studying the metadiscourse markers of English, the researcher made use of the comprehensive and categorized list published in Hyland's (2005a) model of interpersonal discourse markers.

However, to the best knowledge of the researcher, there is no such published list of Persian metadiscourse markers in the literature. Thus, in order to provide a list of metadiscourse markers in Persian, the researcher used (1) one of the most comprehensible English to Persian dictionaries, namely "The Aryanpur Progressive English-Persian Dictionary: Two Volumes Expansive", as well as (2) her personal intuition to translate and select the best academically suited equivalences for the vocabulary items which exist in Hyland's (2005a) list.

In the next phase, she randomly selected and read 10 Persian articles included in the corpus. The metadiscourse markers used in these articles were carefully compared and contrasted with those provided in the newly compiled list and the necessary revisions were done accordingly.

In order to ensure that the developed list of Persian interactional discourse markers is reliable, it was revised by another Iranian PhD candidate of English Language Teaching (ELT) who has an excellent command of both languages, i.e. English and Persian. In two two-hour sessions, the researcher explained the objectives of the study, the details of data collection procedure, and the steps of making the list of



metadiscourse markers in Persian. Then, the reviewer added his suggested new equivalences and removed some others from the list. In the next two sessions, the researcher and reviewer discussed the reasons for their choices and finally came up with the final list which was ultimately used in the data analysis. Moreover, the calculated reliability of the Persian metadiscourse marker list was 87%.

### **3.3 Data Analysis**

In this section, first, the data analysis methodology of the present study is described. The description is then followed by discussing the quantitative and qualitative aspects of the data analysis process. Data analysis tools are discussed in the final section.

#### **3.3.1 Corpus Analysis Methodology**

Corpus-based analysis is one of the dominant methodologies used in language studies. According to Biber et al. (1998), corpus-based analyses have some common features in general: (1) corpus-based analysis is an empirical approach based on which the actual patterns of language use are analyzed, (2) it uses a large body of target language texts (a corpus) as the basis for data analysis, (3) it makes use of computer softwares to analyze the data, (4) it adopts quantitative-qualitative techniques (Biber, 1998, p. 4). Corpus-based research enables the researcher to investigate the distribution of lexico-grammatical features in the texts and interpret their functional rules. In other words, rather than finding new linguistic features, the researcher intends to explore the systematic patterns which determine the ways linguistic features are used in the discourse (Biber, 2010).

In corpus-based analysis, the applied linguist utilizes corpus analysis packages to analyze a large collection of real-life language samples. The rich body of examples provided by the corpus analysis forms a solid, evidential basis for the researchers to

use their personal intuitions and interpretations in order to obtain a fresh insight on the unnoticed features of language use (Hunston, 2002; Hyland, 2009).

Usually, corpora used in applied linguistic studies consist of millions and sometimes hundreds of million words which are sampled from thousands of texts (Stubbs, 2004). However, in the last decade some scholars, such as Hyland (2004), Tardy and Swales (2008) and many others have tended to use relatively smaller and more genre-specific corpora, such as a collection of 40 medical research papers. In this regard, Lee (2001) states that small, specialized corpus are more homogenous than the large ones. Thus, they are considered to be more suitable for genre-based studies which focus on the investigation of linguistic features and the pragmatic and contextual characteristics of corpora.

Considering the above mentioned issues, it can be concluded that the present study adopts a corpus-based approach in data analysis since it aims at using a specialized corpus of 219,914-word which consists of the post-method sections of 100 English and Persian research articles. In addition, the corpus-based analysis is accompanied by utilizing the concordancing software of WordSmith (6th edition) and some further quantitative and qualitative techniques which are discussed in the following sections.

### **3.3.2 Quantitative-Qualitative Techniques**

As it was discussed in the previous section, corpus-based analysis follows a quantitative-qualitative technique (Biber et al., 1998). Quantitative investigation of corpus-based data provides the researcher with the opportunity to follow an evidence-based approach in genre and/or textual analysis (Bowker & Pearson, 2002; Hyland, 2006) through investigating the frequency count of lexical items, grammatical

patterns, and the commonest collocational patterns used in the genre (Tardy & Swales, 2008).

Quantitative analysis of a corpus is usually based on frequency count. The importance of frequency in genre and corpus analysis studies is derived from the notion that in each specific genre the speakers of different languages tend to choose some linguistic features more frequently than others, whether consciously or unconsciously. Studying such preferences help researchers to understand the possible choices available for language users and to interpret the language users' decisions accordingly (Baker, 2006). Hyland (2006) discusses that frequent use of a linguist item in a specific genre indicates the significance of that item in such context and its possibility to be used in the same genre in future. Apart from that, frequency counts reveal the over- and under-used features in different genres.

Sometimes, in corpus-based studies the frequency of linguistic features is compared between two or more corpora. The reliability of the results in such studies, can be affected by factors such as the size and the number of words in each sub-corpus, since there are hardly two or more corpora which have exactly the same word counts. In order to make sure about the comparability of the frequency of items and the reliability of the results, it is required to normalize the counts of features. This is done by dividing the frequency of items to the number of words in each sub-corpus. The calculated amount is then multiplied by a chosen basis which is usually 1000 or 10000 (Biber & Jones, 2009) to enable the researcher to compare the frequency of items per 1000 or 10000 words. Considering the above-mentioned discussions, in the present study, the quantitative analysis of the results initiates with reporting the frequency counts of the

interactional resources used in two sub-corpora of English and Persian articles. The calculated frequencies are then normalized to ensure the reliability of the results.

Besides frequency counts and normalization of the data, quantitative analysis of the corpus-based data is often accompanied by a series of Chi-square tests ( $\chi^2$ ). Chi-square test is a non-parametric technique which is used to analyze categorical data such as frequencies (Best & Kahn, 2008). It reveals whether the relationship between the variables takes place by chance or it is due to a factor rather than chance and sampling errors. In Chi-square test, the observed frequency - raw data, probably in the form of frequency count- is compared with expected frequency, the frequency count which would appear if there were no systematic relationship between the variables. If there is not a significant difference between the observed and expected values, it can be concluded that the difference between the variables can be caused by chance. However, significant difference between the observed and expected values signifies that there is a systematic relationship between the variables (Best & Kahn, 2006; Frankle & Wallen, 2008).

In the present study, the quantitative analysis of the data is based on calculating the frequency count of interactional metadiscourse markers, namely attitude markers, boosters, hedges, engagement markers, and self-mention markers in both English and Persian academic articles. The results are then compared through using a Chi-square ( $\chi^2$ ) test. The test is used to understand whether the difference between the frequency of metadiscourse markers in the two languages of English and Persian results from pure chance or there are some other factors such as the writers' linguistic and/or cultural backgrounds which affect the item frequencies.

On the other hand, the qualitative analysis of a corpus is usually based on data codification. The codification process, whether top-down or bottom-up, provides a clear basis for the analyst to interpret the data (Ellis, 2012; Ellis & Barkhuzian, 2005) through categorizing the huge number of examples gathered from the corpus. According to Fraenkel and Wallen (2008), the purpose of the study and the theoretical framework determine whether the research adopts a top-down or a bottom-up approach, what is called ‘deductive’ or ‘inductive’ by Ellis (2012), to classify the huge amount of gathered data. While in bottom-up approach categories emerge during the analysis procedure, in top-down approach, the categories are established based on theoretical models, the researchers’ prior experiences, or their background knowledge.

The theoretical framework of the present study necessitates adopting a deductive approach in data analysis as it intends to identify and classify the interactional metadiscourse markers (hedges, boosters, attitude markers, engagement-markers, and self-mentions) used in the architecture research papers based on Hyland’s (2005a) categorization. Adopting a deductive approach provides the opportunity for the analyst to better explore, track, and explain the reader-writer interactions throughout the text. In this way, the researcher found the opportunity to describe the data more accurately and to draw meaningful conclusions regarding the effects of cultural issues on the rhetorical patterns used by Persian and English-speaking writers in the academic contexts.

In addition, the qualitative analysis of a corpus is often associated by examining concordances (Hyland, 2009). Concordance studies can help the discourse analysts to find the unseen patterns of language use through identifying the most frequent lexical

and/or grammatical bundles. At first, a concordance lists all the sentences of a selected corpus which contain a search word or phrase (See Figure 3.1). Such a list allows the

N	Concordance	Set	Tag
67	, 1984), previous experience with green roofs does not appear to influence aesthetic reactions to them. However,	appear	
68	. Price and Ross (1984) noted, On first sight it would appear to be beneficial . . . if all the calcium sulphate	appear	
69	are shown in Figure 14. The XANES data, Figure 14a, appear to be a combination of Cu(0) and Cu(I), there is no	appear	
70	of the lifetime of medieval buildings, this technique does not appear to be useful. 12.6. Drilling of Figures It is uncertain	appear	
71	entity formed on the surface of the substrate does not appear to be consistent with this mechanism of formation.	appear	
72	factors that were largely dominated by clerestory lighting appear to be significantly higher than those seen in	appear	
73	because many neighborhoods with some transit use did not appear to have the minimum density levels needed for	appear	
74	communities between 1960 and 2010, Loveland did not appear to differ from the other communities in terms of	appear	
75	see Grodecki et al., 1981); its light blues and reds appear to have a palette similar to that of early stained	appear	
76	. The amount of artificial light and glare from sun and sky appear to have had little impact on the occupants'	appear	
77	needed, or where they could come from. Many conservators appear to have been casually employed. 14.2.	appear	
78	and low-density, suburban environments. City homepages appear to diverge from visitors bureau sites in a number of	appear	
79	residing within areas of greater percentage green space appear to have been more resilient to the negative effects	appear	
80	inspectors collectively for each building. The UCDIM results appear to be most accurate, except in the case of painted	appear	
81	quality. Developing measures of signage quality would appear to be central to this aim as Table 1 shows.	appear	
82	The research has identified the aspects of design that appear to be most closely related to well-being for	appear	
83	in the lower (Renaissance) part of the image does not appear to be any more transmissive than the 13th-century	appear	
84	, the light blues common during the Romanesque period appear to be significantly more transmissive than the	appear	
85	sustainably and non-sustainably designed houses do not appear to have been attempted before. It would also be	appear	
86	glass, the modern replacements (Figure 8a) in the tree appear to have comparable luminances to other original	appear	
87	3a) of different colours (Figure 3b), the reds and dark blues appear to have much lower values than the nearby light	appear	
88	, 1985). Therefore, the relative glazing transmission data appear to validate the discussion in Simmons (2008) that	appear	

Figure 3.1: A sample of a Concordance List in This Study

researcher to see the samples of language use and language system at a glance and find the repeated linguistic patterns (Hyland, 2006). For instance, Figure 3.1, extracted from the corpus compiled for the present study, clearly reveals the pattern ‘appear+to+main verb’ and ‘appear+to+be’ which were frequently used in English architecture articles.

Concordancing also reveals the frequent multi-word expressions called ‘lexical bundles’ (Biber et al., 1999; Biber, Conrad, & Cortes, 2004; Hyland, 2008) across various registers or disciplines. Lexical bundles can be found in the form of 3-word, 4-word, or even 5-word bundles. ‘Appear to be’ or ‘would appear to be’ are the examples of 3-word and 4-word bundles which can be easily found in Figure 3.1. In corpus analysis studies, usually the analyses are reported in the form of 3-word

bundles. This is due to the fact that majority of multi-word bundles hold a 3-word core in their structures (Cortes, 2004; Hyland, 2008). In other words, 3-word bundles act as the building blocks. In this study, the researcher reports the most frequent 3-word and 4-word bundles since (1) they are the main sources of determining the structure of bundles for many researchers (Biber et al., 1999; Cortes, 2004; Hyland, 2008), and (2) in comparison to 5-word and 6-word bundles, they are more frequently occurred and used in the texts. According to Biber et al. (2004), cited in Hyland (2008), lexical bundles are multi-word sequences that '*recur at least 10 times per million words and across five or more texts*' (P. 6). In other words, the bundles which are repeated once per one thousand words are considered as frequent lexical bundles. Considering the above-mentioned point, lexical bundles which are repeated only once per one thousand words can be considered as frequent items.

Considering the above-mentioned issues, in this study, we will also investigate the most frequently used lexical bundles across English and Persian sub-corpora and try to explore the functions of these clusters in the academic discussions of researchers in the discipline of architecture based on Hyland's (2005) model. Since this study focuses on the employment of interactional metadiscourse markers in architectural articles, we will look for the lexical bundles which contain at least one interactional metadiscourse markers, i.e. hedges, boosters, attitude markers, engagement markers, and self-mentions in their structures. Moreover, since our compiled corpus contains more than 300,000 words, the lexical bundles which have repeated more than two times are reported as common lexical bundles since our compiled corpus contains more than 300,000 words.

### **3.3.3 Data Analysis Tools**

The software programs which were used during data analysis process of this research were WordSmith concordance and IBM SPSS.

#### **A. WordSmith Concordance Program:**

The corpus was analyzed through WordSmith tool (version 6.0), a text analysis and concordance program which has the ability to handle a wide range of languages (including English, French, Arabic, Perisan, Chinese, etc.) and different alphabetical systems. The analyzed data was manually edited and revised since corpus analysis tools lack the linguistic distinguishability for selecting the items and the researcher is still required to rely on his own intuition (Tardy & Swales, 2008).

#### **B. IBM Statistical Package for the Social Sciences (SPSS):**

Statistical Package for the Social Sciences (SPSS) is one of the statistical packages which is widely used in social sciences. The software can produce different descriptive statistics such as cross-tabulations (used for Chi-square), frequency statistics, descriptive ratio statistics, bivariate statistics of means, t-tests, ANOVA, correlations, to name but a few. Since the quantitative-qualitative analysis of the present study is based on frequency statistics and cross-tabulation, the researcher made use of IBM SPSS program for analyzing data.

### **3.4 Issues of Validity and Reliability**

One of the major strengths of discourse-based methodology is their high validity (Biber, 2010). This is because the compiled corpus is a comprehensive sample of the target domain. It is achieved by meeting the conditions of corpus compilation, i.e. corpus representativeness, balance, and size, in addition to other issues such as



comparability of sub-corpora. Considering that the compiled corpus in the present study is carefully constructed to meet the above-mentioned corpus compilation principles, the high validity of the present study is warranted.

Also, discourse-based studies usually have high reliabilities, as they make use of computational tools in their data analysis. However, in some discourse-based studies that the data needs to be manually edited, the issue of reliability has to be taken into consideration to make sure that the results are consistent. In the present study, since the concordance lists of metadiscourse markers were manually edited by the researcher, a test-retest or as it is called by Best and Kahn (2006) ‘test of stability over-time’ was conducted. The two analyses were conducted with a three-month gap. The results were then correlated by using Pearson Product Moment Formula. The calculated reliability of the two analysis was 0.89, which shows high level of consistency in the results of the study.

### **3.5 Summary**

In this chapter, at first methodological issues regarding the design of the study were discussed. In data collection section details about the characteristics of the compiled corpus were explained. This section was followed by the descriptions of data analysis techniques and tools. The final section was allocated to issues regarding the validity and reliability of the research results.

## Chapter 4

### RESULTS

In this chapter, the answers to the three proposed research questions are presented in detail. Firstly, the statistical analysis of the frequency of interactional metadiscourse markers across the English and Persian sub-corpora is reported. The findings related to the second research question deal with the employment of metadiscourse features from functional and lexico-grammatical perspectives. The findings based on the third research question provide a list of the interactional bundles which are most frequently used by each group of writers in the post-method sections of the architectural articles.

The present study aims at exploring the rhetorical patterns of English and Persian articles in the field of architecture through answering the following research questions:

1. Is there any statistically significant difference between English-speaking and Persian academic writers in their use of interactional metadiscourse markers (IMMs) in the post-method sections of architecture articles?
2. How do English and Persian architecture articles differ in the use of interactional metadiscourse markers in the post-method sections?
3. What are the most frequent interactional lexical bundles identified in the post-method sections of English and Persian architecture articles?

#### **4.1 Research Question #1: Is There any Statistically Significant Difference between English-speaking and Persian Academic Writers in their Use of Interactional Metadiscourse Markers (IMMs) in the Post-method Sections of Architecture Articles?**

The first research question focuses on the statistical difference between English and Persian sub-corpora in the occurrence of IMMs and follows a quantitative approach in data analysis. As it was discussed in the third chapter, the quantitative analysis of the corpus-based data is done through using frequency counts. According to Hyland (2005a), frequency counts indicate the significance of linguistic items used in the corpus. Besides, counting the frequency of the linguistic items provides a basis for the analysts to compare and contrast the employment of specific grammatical or lexical features in different corpora. As a result, to find the answer of the first research question, the frequency of metadiscursive features used in post-method sections of English and Persian architecture articles was calculated. Table 4.1 presents a comprehensive picture of data analysis results of this section. In the second step, the normed scores of interactional markers were computed (See Table 4.2). Normalizing the total frequency count of items warranted the comparability (Biber & Jones, 2009) of metadiscursive categories between English and Persian sub-corpora. The normalization table gets a deeper view regarding the occurrence of IMMs in the whole body of the corpus and, at the same time, verifies the results gathered from the frequency counts of the metadiscourse categories. Moreover, to find out whether the differences between the frequencies of IMMs in English and Persian sub-corpora are significant, or better to say meaningful, a series of chi-square tests were also conducted (See Table 4.3).

In the final section of quantitative analysis, intra-language and intra-metadiscourse analyses were conducted. In the intra-language analysis, the researcher investigated the frequency count and percentage of each metadiscourse category within each sub-corpus, for instance, the occurrence of hedging markers in the English sub-corpus or the occurrence of engagement markers in the Persian sub-corpus. The results provide an overall picture of the employment of IMMs by the writers of each language and to some extent reveal the culture-bound and L1-related preferences of each group of the writers. In addition, the intra-metadiscourse analysis shows the number of English and Persian resources within each category of interactional metadiscourse. For example, the intra-metadiscourse analysis reveals the proportion of English metadiscourse markers to Persian ones in the category of boosters.

#### **4.1.1 Frequency and Percentage Results**

Table 4.1 presents the frequency of the markers and the percentage of their appearance across the corpus. As it is shown, overall English-speaking and Persian writers used 5547 Interactional Metadiscourse Markers (IMMs) in the corpus of 219,914-tokens. The English sub-corpus includes 3412 and the Persian sub-corpus includes 2135 interactional resources. That is to say, 61.5% of the total amount of IMMs appear in the English sub-corpus and 38.5% in the Persian sub-corpus. Considering the categories of IMMs, in general, hedges are the most frequently used features, constituting 2565 tokens (46.2%), or better to say, nearly half of the total number of IMMs used in the corpus. Boosters, with 1325 tokens (23.9%), attitude markers, with 1018 tokens (18.4%), and self-mentions, with 346 tokens (6.2%) respectively stand in the second, third, and fourth ranks. Engagement markers, are shown to be the least frequently occurring category in the corpus, constituting only 293 tokens (5.3%) of the total number of IMMs.

It should be noted that IMM categories reported in the tables of this chapter are placed from the most frequent categories to the least frequent ones. In other words, the tables always follow the order of hedges, boosters, attitude markers, self-mentions, and engagement markers.

Table 4.1: Frequency and Percentage Distribution of IMMs across the Corpus

	<b>Hedges</b>	<b>Boosters</b>	<b>Attitude Markers</b>	<b>Self-mentions</b>	<b>Engagement Markers</b>	<b>Total</b>
<b>English</b>	1792 (32.3%)	776 (14.0%)	402 (7.2%)	313 (5.6%)	129 (2.3%)	3412 (61.5%)
<b>Persian</b>	773 (13.9%)	549 (9.9%)	616 (11.1%)	33 (0.6%)	164 (3.1%)	2135 (38.5%)
<b>Total</b>	2565 (46.2%)	1325 (23.9%)	1018 (18.4%)	346 (6.2%)	293 (5.3%)	5547 (100%)

A quick comparison between the number of hedging features in English and Persian sub-corpora illustrates that these features constitute 32.3% of the total number of IMMs, 1792 tokens, in the English sub-corpus. However, hedges constitute 13.9% of the total number of IMMs, i.e. 773 tokens, in the Persian sub-corpus. In other words, English-speaking writers use hedges two-and-a-half times more than their Persian counterparts do.

Boosters are the second mostly used IMMs across the whole corpus. In total, they constitute approximately one fourth of the IMMs (1325 out of 5547), 23.9%. Similar to hedges, English-speaking writers use more emphatic markers than Persian ones. In fact, 14%, or 776 tokens, of the total number of IMMs occur in the English sub-corpus, and 9.9%, or 549 tokens, occur in the Persian sub-corpus.

In the compiled corpus, attitude markers constitute nearly one fifth of the total number IMMs, or 1018 tokens, and are placed in the third rank. As it is shown in Table 4.1, the English sub-corpus constitutes 402 tokens, 7.2%, of the total amount of IMMs, while the Persian sub-corpus constitutes 616 tokens, 11.1% of the total. Thus, in this category, it is the Persian writers who make use of attitude markers more frequently than their English counterparts.

Self-mentions and engagement markers are the least frequently used categories in the corpus. Together, they allocate only 11.5% of the total number of IMMs to themselves. Regarding the frequency of self-mentions, the results show a great difference in the use of self-mentions between English-speaking and Persian writers. In fact, the frequency of self-mentions in the English sub-corpus is around nine and a half times more than the Persian one. In other words, self-mentions appear 313 times in English sub-corpus, while this number in Persian sub-corpus is limited to only 33 times. Self-mentions used in the English sub-corpus constitute 5.6% of the total number of IMMs, however, this amount in the Persian sub-corpus is only 0.6%. Finally, the least used category of metadiscourse in our corpus is the engagement markers. As the result showed, they appear 129 times in the English sub-corpus and 164 times in the Persian one. A close look at the percentages also reveals that totally engagement markers constitute 5.3% of the total number of IMMs, of which 2.3% occur in English sub-corpus and 3.1% in Persian sub-corpus.

Figure 4.1 provides a summarized view of the above-mentioned results and gains a deeper understanding of different preferences of English-speaking and Persian writers in architecture articles, the frequency of metadiscourse markers in both corpora, and the total number of markers.

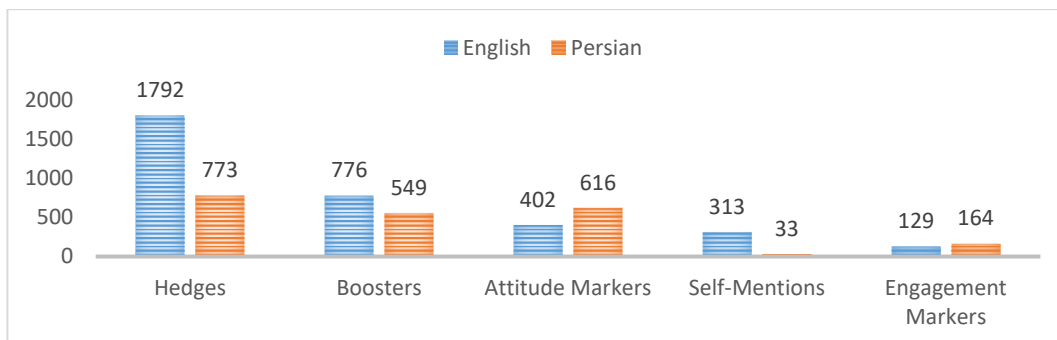


Figure 4.1: Frequency of IMMs in the English and Persian Sub-corpora

#### 4.1.2 Normalization Results

To meet the comparability conditions, and to better understand the occurrence patterns of the items in the academic arguments, the normed scores of IMMs are computed (See Table 4.2). Although the normalization table is driven from the frequency counts presented in Table 4.1, it provides a different view of the data gathered from the corpus. For instance, results mentioned in Table 4.2 illustrate that English-speaking and Persian academic writers in the field of architecture use 252.2 IMMs per 10000 words, or approximately one signpost every 40 words. Accordingly, the IMMs in English sub-corpus appear around 300 times per 10000 words or every 33 words. This amount in the Persian sub-corpus reduces to 192 tokens per 10000 words or about every 50 words.

Table 4.2: Interactional Metadiscourse Markers per 10000 Words

<b>Interactional metadiscourse</b>	<b>English-speaking sub-corpus</b>	<b>Persian sub-corpus</b>	<b>The whole corpus</b>
<b>Hedges</b>	158.2	72.5	116.6
<b>Boosters</b>	68.5	51.5	60.2
<b>Attitude markers</b>	35.2	57.8	46.3
<b>Self-mentions</b>	27.6	3.1	15.7
<b>Engagement markers</b>	11.3	15.3	13.3
<b>Total</b>	300.1	192.2	252.2

Considering the most and the least frequently used categories, it is shown that hedges, the most frequently used discursive features, in total, occur around 113 times per 10000 words. In other words, they appear every 85 words in the compiled corpus. Considering each of the sub-corpus, the results illustrate that the English sub-corpus has 158 hedging markers per 10000 words, while the number of hedges in the Persian sub-corpus only reaches to 72 features per 10000 words. Engagement markers, on the other hand, which are the least used markers, are shown to totally occur approximately 13 times per 10000 words. That is to say, in the academic argumentations in the field of architecture, these markers appear approximately every 752 words. The distribution of engagement markers in the English and Persian sub-corpora is around 11.3 and 15.3 times per 10000, respectively. Another statistical feature which attracts the attention is the normed score of self-mentions in the Persian sub-corpus. As it is shown, self-mentions occur only 3 times per 10000 words, or one signpost every 3333 words. However, this amount reaches to 27 times in the English corpus, or approximately every 362 words.

The normalization table also clearly shows an even balance between the frequencies of hedges, boosters, and attitude markers in the Persian sub-corpus. This is because in this sub-corpus, there is only a slight difference between the frequency of hedges, which constitute 72.5 tokens, and those of boosters and attitude markers constituting consecutively 51.5 and 57.8 tokens per 10000 words. However, the case in the English sub-corpus is completely different. In fact, the results show a considerable imbalance in the frequencies of hedges, boosters, and attitude markers. There is a significant gap between the frequency of hedges at first place, 158.2 tokens, on one hand, and those of boosters, 68.2 tokens, and attitude markers, 35.2 tokens, which appear in the second and third ranks, on the other hand.



### 4.1.3 Chi-square Test Results

The statistical investigation of interactional metadiscourse markers is not limited to their frequency counts, percentage, and normed scores. In order to understand whether the difference between the frequency of IMMs across languages and metadiscourse categories are significant or not, it is essential to conduct Chi-square test (Best & Kahn, 2006). First, Chi-square test reveals that there is a significant difference between English-speaking and Persian academic writers in the use of IMMs in the post-method sections of architecture articles. It is because  $\chi^2 = 449.294$  is greater than the critical value  $\chi^2_{critical} = 9.48$  for a probability level of 0.05 (See Table 4.3).

Second, the test results also reveal that English-speaking and Persian writers are significantly different in the employment of the sub-categories of interactional metadiscourses, i.e. hedges, boosters, attitude markers, self-mentions, and engagement markers (See Table 4.3). To begin with, the writers of both groups differ significantly in the employment of hedges, as the  $\chi^2 = 404.819$  exceeds the critical value = 3.84 for a probability level

Table 4.3: Chi-square Test Results of the English and Persian Sub-corpora

	Hedges	Boosters	Attitude markers	Self-mentions	Engagement markers	Total
<b>Chi-Square (p) Value</b>	404.819	38.890	46.393	226.590	4.181	449.294
<b>Critical Value P&lt;0.05</b>	3.84	3.84	3.84	3.84	3.84	9.48
<b>df</b>	1	1	1	1	1	4

of 0.05. Such a major difference is resulted from the fact that according to the results the English-speaking writers use hedges two and a half times more than the Persian writers.

The difference is also significant in using boosters across the two sub-corpora since the computed  $\chi^2 = 38.890$  is greater than the critical value of 3.84 ( $p < 0.05$ ). The third category of difference is the attitude markers. Since the  $\chi^2 = 46.393$  is greater than the critical value of 3.84, it can be concluded that the difference between the frequency of attitude markers is meaningful and is not caused by the factor of chance (Best & Kahn, 2006). The next area of difference between the English-speaking and Persian writers is the employment of self-mentions. As it was discussed earlier, the number of self-mentions used by English-speaking writers is about nine and a half times more than their Persian counterparts. The Chi-square test verifies the significant difference between the two groups, as the  $\chi^2 = 226.590$  which is clearly greater than the critical value of 3.84 for a probability level of 0.05. Finally, the employment of engagement markers slightly differs among the two groups, as the computed  $\chi^2 = 4.181$  is greater than the critical value of 3.84 ( $p < 0.05$ ).

#### **4.1.4 Intra-metadiscourse and Intra-language Results**

So far, the ‘total’ frequency counts of the whole corpus as well as the frequency of the items in the English and Persian sub-corpora were reported. In what follows, the ‘intra-metadiscourse’ and ‘intra-language’ results are presented in detail.

##### **Hedges**

As it was mentioned earlier, hedges are the most frequently occurring interactional metadiscursive features in the compiled corpus, which constitute 46.2% of the total number of IMMs markers. According to the results shown in Table 4.4, the English

sub-corpus contains 1792 hedge markers, while the Persian sub-corpus contains 773 markers. Thus, from the total count of hedges in the whole corpus, i.e. 2565 tokens in both sub-corpora, around 69.9% occurs in the English sub-corpus, and 30.1% occurs in the Persian one. In addition, the intra-language analysis of data illustrates that hedges constitute 52.5% of the interactional metadiscursive features used in the English sub-corpus. This amount in the Persian sub-corpus reaches up to 36.2%.

Table 4.4: The Statistical Illustration of Hedges

	English	Persian	Total
Count	1792	773	2565
% within language	52.5%	36.2%	46.2%
% within MDMs	69.9%	30.1%	100.0%
% of total	32.3%	13.9%	46.2%

### Boosters

Boosters occur 1325 times in the whole corpus, which is one fourth of the total number of IMMs. From this amount, 776 emphatic markers occur in the English sub-corpus and 549 features in the Persian sub-corpus. That is to say, 58.6% of the total count of boosters appears in the former and 41.4% in the latter sub-corpus. The intra-language analysis shows that boosters constitute 22.3% of interactional metadisocurse markers in the English sub-corpus, and 27.6% of this amount in the Persian sub-corpus.

Table 4.5: The Statistical Illustration of Boosters

	English	Persian	Total
Count	776	549	1325
% within language	22.7%	25.7%	23.9%
% within MDMs	58.6%	41.4%	100.0%
% of total	14.0%	9.9%	23.9%

### Attitude markers

The compiled corpus contains 1018 attitude markers of which 402 times occur in the English sub-corpus and 616 markers in the Persian one. In other words, from the total number of attitude markers used in the whole corpus, 39.5% appear in the English sub-corpus and 60.5% in the Persian sub-corpus. Moreover, the intra-language analysis of data demonstrates that attitude markers constitute 28.9% of the total number of IMMs used in the Persian texts. However, this amount in the English sub-corpus is 11.8%. In sum, the results display a greater use of attitudinal features by the Persian writers in comparison to their English-speaking counterparts.

Table 4.6: The Statistical Illustration of Attitude Markers

	English	Persian	Total
Count	402	616	1018
% within language	11.8 %	28.9 %	18.4 %
% within MDMs	39.5 %	60.5 %	100.0 %
% of total	7.2%	11.1 %	18.4 %

### Self-mentions

The most considerable difference between the two sub-corpora is for the self-mentions which the number of markers in the English sub-corpus, 313 tokens, is around nine and a half times more than that of the Persian sub-corpus, which is only 33 tokens. In other words, 90.5% of the total self-mention markers occurs in the English sub-corpus and the remaining 9.5% occurs in the Persian one. Obviously, self-mentions are the least used IMMs in the Persian sub-corpus, constituting 1.5% of the total. It is worth noting that Persian self-mentions are also the least occurring category in total, constituting only 0.6% of the total number of IMMs appeared in the whole corpus.

Table 4.7: The Statistical Illustration of Self-mentions

	English	Persian	Total
Count	313	33	346
% within language	9.2%	1.5%	6.2%
% within MDMs	90.5%	9.5%	100.0%
% of total	5.6%	0.6%	6.2%

### Engagement markers

Engagement markers are the least used IMM markers constituting around 5.3% of the total number of IMM tokens, or 293 tokens. From this amount, 129 tokens appear in the English and 164 tokens in the Persian sub-corpora. In other words, 44.0% of the engagement markers are used in the English sub-corpus and 56.0% in the Persian one. These results verify the result of Chi-square test which indicates the similarity between both groups of writers in their employment of engagement markers. Moreover, the intra-language comparison illustrates that only 3.8% of the IMM tokens of English sub-corpus is allocated to engagement markers. In the Persian sub-corpus, this amount reaches up to 7.7%.

Table 4.8: The Statistical Illustration of Engagement Markers

	English	Persian	Total
Count	129	164	293
% within language	3.8%	7.7%	5.3%
% within MDMs	44.0%	56.0%	100%
% of total	2.3%	3.0%	5.3%

### 4.1.5 Summary of Research Question #1

The first research question investigated whether there is significant difference between English-speaking and Persian academic writers in their employment of interactional

metadiscourse markers in the post-method sections of architectural articles. As it was discussed, the answer to this question is ‘yes’. In this part, some of the major differences found between the two compiled sub-corpora of English and Persian extracts are listed to give a comprehensive view of the findings of this study.

1. There is a significant difference between the total number of interactional metadiscourse markers in both English and Persian sub-corpora.
2. English-speaking writers use more interactional metadiscourse markers than their Persian counterparts.
3. The two groups significantly differ in the use of all sub-categories of interactional metadiscourse markers, i.e. hedges, boosters, attitude markers, self-mentions, and engagement markers.
4. Hedges, with the total frequency 2565, are the most frequently used interactional metadiscourse category not only in the whole corpus, but also in both English and Persian sub-corpora.
5. Engagement markers are the least used interactional metadiscourse category in the whole corpus.
6. Engagement markers are the least used category in the English sub-corpus; however, this is not the case in the Persian sub-corpus.
7. Self-mentions are the least used category in the Persian sub-corpus.
8. Persian self-mentions, with the total frequency of 33, are the least frequently used category in both sub-corpora.
9. The English-speaking and Persian writers have different order of preference in the employment of interactional metadiscourse categories (See Table 4.9).

Table 4.9: The Order of Preference of English-speaking and Persian Writers

Order of Preference	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>
English-Speaking writers	Hedges	Boosters	Attitude Markers	Self-mentions	Engagement Markers
Persian writers	Hedges	Attitude Markers	Boosters	Engagement Markers	Self-mentions

10. The distribution of interactional metadiscourse markers in each sub-corpus is to a great extent different (Figure 4.2).

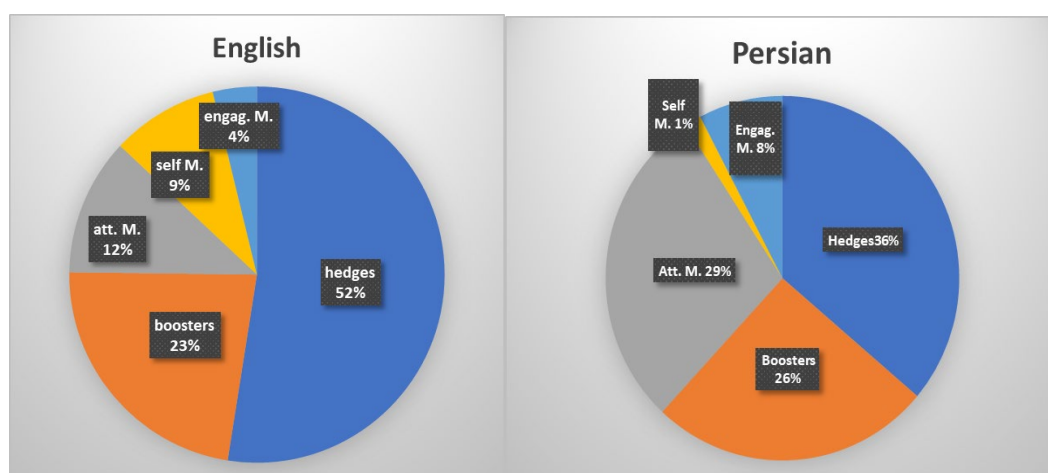


Figure 4.2: IMMs in Each English and Persian Sub-corpora

#### 4.2 Research Question #2: How do English and Persian Architecture Articles Differ in the Use of Interactional Metadiscourse Markers in the Post-method Sections?

In order to answer the second research questions regarding how the English and Persian sub-corpora differ in the use of interactional metadiscourse markers in the post-method sections of architecture articles, it is required to analyze and interpret the concordance data of each language from both lexico-grammatical and functional

perspectives. The analysis steps are followed by some examples from the concordance lines to offer a deeper understanding of how both groups of English-speaking and Persian academic writers employ interactional resources in their academic arguments.

#### 4.2.1 Hedges: Lexico-grammatical Analysis

Table 4.10 shows that hedges appeared in four categories of modal auxiliary verbs, epistemic lexical verbs, epistemic adverb, and adjectives in the English and Persian sub-corpora. According to the results, the modal auxiliary verbs are the most frequently used epistemic sub-category in the post-method sections of architecture research papers, regardless of the language difference, 622 epistemic modal auxiliaries in the English sub-corpus and 388 in the Persian sub-corpus. The Persian writers are found to use relatively equal number of other hedging features, i.e. lexical verbs, adverbs, and adjectives in their texts (120, 114, 130, respectively). However, the English-speaking writers use considerably more epistemic verbs (506) and adverbs (531) in comparison to adjectives (99). It was also found that the English-speaking architects use prepositional phrases such as *in most cases*, *in this view*, and *on the whole* to down tone the force of the propositions. Moreover, in presenting the data found in the Persian sub-corpus, the category of prepositional phrase is replaced by the category ‘other’ (Table 4.10), since instead of using prepositional phrases, Persian

Table 4.10: Frequency Distribution of Hedges (per 10,000)

Category	English	Persian
Modal auxiliary verbs	622 (54.9)	388 (36.4)
Epistemic lexical verbs	506 (44.7)	120 (11.25)
Adverbs	531 (46.9)	114 (10.7)
Adjectives	99 (8.7)	130 (12.2)
Prepositional phrase	35 (3.0)	Other 21 (1.9)
Total	1792 (158.2)	773 (72.5)



writers used other phrases. For instance, they use *چندان دور از ذهن نیست* (which can be translated as *possible* or *probable*) and *چنین می‌نماید* (which can be translated as *indicate*) to show their uncertainty about the presented arguments.

Table 4.11 illustrates the ten most frequently used hedging features in each sub-corpus. The analysis of hedges at lexical level demonstrates that modals of possibility, i.e. *may*, *would*, *could*, as well as the main verb *suggest* are the most frequently hedging resources used in the post-method discussions of architecture articles. The modal verb *may* is the most common hedging feature and has allocated 14.7% of the total number of hedging features which appear in the English sub-corpus to itself. The modal verbs of *would* and *could*, with respectively 9.2% and 5.6%, and the main verb of *suggest*, with 7.5%, are among the other frequently used hedging features in the English sub-corpus. Epistemic adverbs such as *likely* (5.0%), *approximately* (3.2%), and *relatively* (2.7%) as well as the epistemic adjective *possible* (3.12%) are among other commonly used hedging features in the English architecture articles.

Table 4.11: The Most Frequent Hedge Features

No.	Word	Frequency%	No.	Word	Frequency%
1	may	14.7%	1	* تو انستن*	46.5%
2	would	9.2%	2	پیشنهاد کردن/شدن	8.7%
3	suggest*	7.5%	3	حاکمی بودن /	3.4%
4	could	5.6%	4	به نظر رسیدن /	2.8%
5	appear*	5.6%	5	بیشتر (وقات) /	2.7%
6	indicate*	5.0%	6	ممکن /	2.4%
7	likely	5.0%	7	*حدود*	2.0%
8	approximately	3.2%	8	نسبتاً	2.0%
9	possible	3.1%	9	تقریباً	1.8%
10	probably	2.7%	10	معمولاً	1.7%

Note 1: suggest\*= suggest, suggests, suggested; indicate\*= indicate, indicates, indicated; appear\*= appear, appears, appeared.

Note 2: The translation of the Persian words respectively are as follows: 1. may, could, would; 2. suggest\*; 3. indicate\*, suggest\*; 4. seem\*; 5. often; 6. possible, probable; 7. approximately, fairly; 8. about, almost; 9. almost, about, approximately; 10. usually

---

(1-Eng. /Hedges)

It **may be possible to** transform the base-case building into a zero-energy building by adding a large enough photovoltaic system, but this **would** be prohibitively expensive.

(2-Eng. /Hedges)

It **could be suggested that** performance testing **may** be more valuable and thus should be awarded accordingly.

(3-Eng. /Hedges)

Those who believed that the buildings were sustainable **were less likely to** use modifiers.

(4-Eng. /Hedges)

The Bakers would not allow any independent evaluation of their methods, **possibly** because they feared that their own ignorance **would** be exposed, or **possibly** because they did not believe that a rational explanation of what they were doing was **possible**.

(5-Eng. /Hedges)

This **suggests that** a participant who set their preferred illuminance **relatively** high on one of the stimulus ranges **would tend** also to set it **relatively** high on the other stimulus range.

---

Similar to English-speaking writers, Persian writers use modals of possibility more than other hedging features. As it is shown in Table 4.11, the possibility modal verb توانستن, which signifies the ability to do something and possibility in Persian language, is used in 46.5% of the total number of Persian hedging markers. As it can be seen in examples 3 and 4, the infinitive form of this modal, i.e. توانستن and the verbs driven from this infinitive are used as the equivalence for the verbs *could*, and *would*, and *may*. In fact, the broad employment of this verb and its semantic and grammatical diversity make توانستن the most common hedging feature in Persian academic texts.

---

(6-Per. /Hedges)

اما بر اساس مصاحبه های انجام شده با سی نفر از مراجعه کنندگان، **میتوان** گفت که 90 درصد شهروندانی که به بازارچه مروی می آیند، محله عودلاجان را نمی شناسند و حتی نام آن را نشنیده اند.  
According to the interviews conducted with thirty interviewees, it **could** be said that 90 percent of the citizens who go to Marvi Bazar do not know Odludjan neighborhood and have not even heard of it.

(7-Per. /Hedges)

شرایط و ویژگیهای کلی شهر، سیاستهای کلان موجود و امکانات خاص، هر یک **میتوانند** در انتخاب راهبردهای مواجهه با بافتهای فرسوده مؤثر واقع شود.  
The condition and general characteristics of the city, the current macro policies and specific facilities, each **would** be effective in selecting appropriate strategies to confront derelict textures.

---

According to the results shown in Table 4.10, the other frequently used hedging resources in Persian language are the main verbs پیشنهاد کردن/ شدن (suggest) and به نظر رسیدن (seem), which occur respectively in 8.7% and 2.8% of the total number of Persian hedges. The frequency of epistemic adverbs such as بیشتر (often, largely) (2.7%) and حدود (about, approximately) (2.0%) and the epistemic adjective ممکن (possible, probable) (2.4%) are among the common hedging features used in the Persian architecture articles.

---

(9-Per. /Hedges)

**پیشنهاد میشود** در مطالعات آتی به بررسی تأثیر خصوصیات اقتصادی- اجتماعی خانوارها، کیفیت سیستم حمل و نقل عمومی، سیاستهای دولت، مطلوبیت سفر و ... بر رفتار سفر پرداخته شود.  
The further research is **suggested** to investigate the effects of socio-economic status of families, the quality of public transportation, the state policies, travel utility, and etc. on travel behavior.

(10-Per. /Hedges)

**به نظر میرسد** بالا بردن سطح استانداردهای دسترسی و خدمات دهی مترو و اتوبوسرانی عامل بسیار مؤثری در تغییر رفتارهای ترافیکی ساکنین باشد.  
**It seems that** improving availability standards and the subway and bus services would be highly effective in changing the traffic behavior of residents.

(11-Per./Hedges)

پهنه اول بیشتر در مکانهای شمال و جنوب شرقی محدوده مطالعاتی واقع شده که مساحت این پهنه حدود 23 درصد کل محدوده مطالعاتی را در بر گرفته است.

The first zone, which covers an area of about 23% of the total study area, is mainly located in the north and southeastern regions of the study area.

---

### **Hedges: Functional Analysis**

The functional analysis revealed similarities between both groups in the employment of hedges. High inclusion of modal auxiliaries suggests the tendency of the two groups of writers to insist on the hypotheticality and tentativeness of their assumptions in their academic discussions. The functional analysis of hedges used in the English sub-corpus revealed that these resources assist the English-speaking architects to report their results and interpret them. (12-Eng. /Hedges), for example, show the way an English-speaking writer uses *suggest*, *would*, *tend*, and *relatively* to present their findings in the result section of his or her article. In (13-Eng. /Hedges) *would* is used to offer some possible suggestions for further research. In (14-Eng. /Hedges), the writer discusses the factors which might affect the results through using different hedging features such as *suggest*, *may*, and *likely*. The English-speaking writers also used hedges to adopt a restrained language in discussing the limitations and implications and to compare their results with other studies in the field.

---

(12-Eng. /Hedges)

As can be seen this correlation was positive, and Spearman's correlation coefficient suggests it to be significant ( $r = 0.906$ ,  $p < 0.001$ ). This suggests that a participant who set their preferred illuminance relatively high on one of the stimulus ranges would tend also to set it relatively high on the other stimulus range.

(13-Eng. /Hedges)

Additional studies that would extend this project include exploration of transport and appliance use as indicators.

(14-Eng. /Hedges)

**This suggests that** while previous knowledge of green roofs **may have influenced** participants' attitudes, **it is less likely to** have influenced their aesthetic reactions.

---

Similarly, the Persian architects employed hedges to report, and interpret the results (15-Per. /Hedges). In addition, hedges were found to be used to activate the schemata of the reader about the context, as it is seen in (16-Per. /Hedges). In this example, the writer uses شاید (shayad), and می تواند (mitavanad) to cautiously share his or her personal ideas regarding the current problems in the Iranian tax systems with the reader.

---

(15-Per. /Hedges)

حضور یک محور قوی به سمت محراب و ایجاد تقارن محوری به وضوح در پلان مسجد دیده می شود. **شاید** بتوان آن را در علت وجودی این سه عنصر دانست که با ترفند معماران ایرانی و به بهانه جهت دار کردن مسجد به آن وارد شده است.

The presence of a strong axis towards the sanctuary and the creation of axial symmetry is clearly seen in the mosque's plan. **Probably**, the presence of these three elements **would be attributed** to the trick of Iranian architects to orient the mosque.

(16-Per. /Hedges)

نتایج این پژوهش **حاکمی از آن است** که تقویت زیرساخت های گردشگری و توسعه توان اقتصادی منطقه از مهم ترین عوامل موثر در توسعه گردشگری منطقه آزاد چابهار می باشند.

The results of this research **suggest that** strengthening of tourism infrastructure and development of regional economic power are among the most important factors in the development of tourism in Chabahar Free Zone.

(17-Per. /Hedges)

**شاید** علت اصلی آن که در کشور ایران تا به حال شاهد وجود یک سیستم کارآمد و جامع مالیاتی نبوده ایم. همین مسئله است، این امر **می تواند** آفتی در برابر سازماندهی مناسب اقتصاد کشور و به تبع آن شهر باشد.

**Probably**, this issue **could be** the main reason why we have not yet seen an efficient and comprehensive tax system in Iran, which **could be** a destructive element to the proper organization of the economy of the country and, consequently, the city.

---

#### 4.2.2 Boosters: Lexico-grammatical Analysis

As it is illustrated in Table 4.12, English and Persian boosting features appear in four classes of modal verbs, adverbs, adjectives, and verbs. The results reveal that the

writers of both groups use significantly more verbal boosters (576 and 405, respectively) than modal auxiliaries (20 and 14, respectively), adverbial (83 and 67, respectively), and adjectival boosters (79 and 63, respectively), to express their confidence in their findings and suppress counter-discussions on the propositions presented in the post-method sections of the articles.

In addition to modal auxiliaries, verbs, adverbs and adjectives, some ‘phrases’ such as *no doubt*, and *in fact*, also appeared in the English sub-corpus. However, the equivalences of these phrases, i.e. *شکی نیست* and *بدون تردید* (both are the equivalences of undoubtedly) and other boosting phrases such as *به درستی که* (in fact, truly) do not appear in the Persian sub-corpus.

Table 4.12: Frequency Distribution of Boosters (per 10,000)

Category	English	Persian
Modal aux.	20 (1.8)	14 (1.3)
Verb	576 (50.9)	405 (38.0)
Adverbs	83 (7.3)	67 (6.3)
Adjectives	79 (7.0)	63 (6.0)
Phrases	18 (1.6)	-
Total	776 (68.5)	549 (52.0)

This could possibly be associated with the rhetorical preferences of Persian-language writers in boosting their propositions. The lexical analysis results illustrate that the main verbs *show*, *find*, and *demonstrate* are the most frequent emphatic features used by English-speaking and Persian writers (Table 4.13). In fact, these three verbs, *show* (34.5%), *find* (20.1%), and *demonstrate* (6.5%) alone constitute 60% of the total number of English boosters. Other boosting features used by the English-speaking academic writers are the emphatic adjective *clear* (3.0%) and *certain* (2.3%), as well

as the emphatic adverbs *clearly* (3.0%), *always* (2.2%), and the auxiliary verb *must* (2.5%) and the main verbs *believe* (3.2%) and *know* (2.5%).

---

(18-Eng. /Boosters)

The results for circular vaults **are shown in** the top row and the results for pointed vaults with different normalized radii of curvature ( $r/b$ ) **are shown in** the bottom rows.

(19-Eng. /Boosters)

With or without other variables controlled, the dwellings within the study group **were found to** consume significantly less energy.

(20-Eng. /Boosters)

Results of the illuminance adjustment task **demonstrate that** the low range did lead to significantly lower illuminances.

(21-Eng. /Boosters)

From these findings, **it is clear that** measurements of the copper speciation are integral to understanding the origin of the color of glass.

(22-Eng. /Boosters)

There are **always** dangers in generalizing about people's needs and desires, no less so for architectural requirements.

(23-Eng. /Boosters)

At the same time, the majority **believed** that the design of their homes was important (63% of respondents felt it was either very or fairly important).

(24-Eng. /Boosters)

Furthermore, from the literature review discussion on reevaluation strategies, we **know** that "adaptive reuse," in particular, can be an effective smart decline tool for quickly adding social and economic value to unused and vacant land, even if only for a temporary time period.

(25-Eng. /Boosters)

Our results **must be interpreted** in the context of several limitations inherent to our data sources and the methods used to derive them.



Table 4.13: The Most Frequent Booster Features

No.	Word	Frequency%	No.	Word	Frequency%
1	show*	34.5%	1	نشان دادن	43.0%
2	find*	20.1%	2	مشاهده شدن/ نمودن	9.1%
3	demonstrate*	6.5%	3	مشخص کردن/ بودن	8.3%
4	clear	3.7%	4	البته	4.2%
5	think*	3.5%	5	بیانگر بودن	3.8%
6	believe*	3.2%	6	دانستن*	2.2%
7	clearly	3.0%	7	همواره	2.2%
8	know*	2.5%	8	روشن	1.8%
9	must	2.5%	9	ملاحظه کردن/ شدن	1.8%
10	certain	2.3%	10	آشکار	1.6%

Note 1: show\*= show, showed, shows, shown; find\*= find, finds, found; demonstrate\*= demonstrate, demonstrates, demonstrated; believe\*=believe, believes, believed; know\*=know, knows, known.

Note 2: The translation of the Persian words respectively are as follows: 1. show, 2. demonstrate, illustrate, 3. show, illustrate 4. of course, 5. illustrate, 6. know, 7. always, 8. clear, 9. illustrate, demonstrate, 10. clear, obvious.

(26-Eng. /Boosters)

Also, design and plant selection are **clearly** important to how well a green roof is aesthetically received.

---

The lexical analysis of the Persian sub-corpus demonstrates that Persian writers, similar to English-speaking writers, mainly use the main verbs نشان دادن (show), مشخص کردن/بودن (illustrate/illustrated), and مشاهده شدن/نمودن (demonstrate/demonstrated) which are the equivalences of the verbs *show*, *demonstrate*, and *find* in English. According to the results presented in Table 4.13, the verbs مشاهده شدن/نمودن (*demonstrate/demonstrated*), and مشخص کردن/بودن (*illustrate/illustrated*), respectively, constituted 43.0%, 9.1%, and 8.3% of the total number of emphatic markers used in the Persian sub-corpus. In sum, these verbs have appeared in around 60% of the sentences in the Persian sub-corpus.

---

(29-Per. /Boosters)

هما نظور که در نمودار 4 مشخص است، با افزایش دفعات تعویض هوا، دمای هوای داخل به دمای هوای بیرون نزدیکتر میشود.

As shown in Figure 4, with increasing frequency of air change, the air temperature gets closer to the outside air temperature.

(30-Per. /Boosters)

به عبارت دیگر ماتریس مربوطه که در قالب جدول واریانس تبیین شده نشان داده می شود، به روشنی مشخص می کند که برآیند تحلیل عاملی در کاهش و خلاصه سازی شاخصها و سنجه های پیاده مداری به چند عامل نهایی منتهی شده است.

In other words, the corresponding matrix **shown** in the form of the table of variance **clearly illustrates that** the outcome of the factor analysis in reducing and summarizing the indexes and measurements of the sidewalk has led to several final factors.

---

The other boosting features which are commonly used in the Persian sub-corpus are the emphatic adverbs of البته (of course) (4.2%) and همواره (always) (2.2%) the verbs ملاحظه کردن/شدن (observe/show) (2.2%), دانستن (know) (2.2%), and بیانگر بودن (illustrate; show) (2.2%),

(illustrate, show, demonstrate) (1.8%), as well as the synonym emphatic adjectives of آشکار (1.6%) and روشن (1.8%) (both are the equivalences of *clear* and *obvious*, interchangeably).

---

(31-Per. /Boosters)

شناسایی اکوسیستم و پوشش های گیاهی بومی رودخانه و جایگزینی آن با طرح کاشت فعلی البته به صورتی ارگانیک و نه خطی به عنوان سیاست دوم پیشنهاد میشود.

Identification of the ecosystem and the native plants of the river and their replacement with the current planting plan, **of course**, in an organic way and not linear, could be suggested as the second policy.

(32-Per. /Boosters)

این نمره بیانگر میزان اثربخشی راهبردهای کنونی در نشان دادن واکنش نسبت به عوامل مذکور است.

The score **illustrates** the effectiveness of current strategies in reacting to the aforementioned factors.

(33-Per. /Boosters)

به این ترتیب، بدیع بودن ارتفاع آن در شهر، عامل اصلی توجه و احساس خوشایند مردم دانسته میشود که بیشتر تحت تأثیر ادراک حسی بوده و پس از مدتی، اثر آن کمرنگ خواهد شد.

Thus, the uniqueness of its height in the city **is known** to be the main source of people's attention and their positive feelings, which are largely affected by sensory perception and will dim after a while.

(34-Per. /Boosters)

روشن است که استفاده از چنین رنگی در سالن امتحانات یا فضاهای عمومی منتهی به آن، میتواند بر اضطراب دانشجویان در زمان امتحان بیافزاید.

**It is clear that** using such a color in the exam hall or the public places that lead up to it, would increase the students' anxiety during the test.

---

### Boosters: Functional Analysis

The functional investigation of the articles revealed that English-speaking writers used boosters for different purposes. In example (35-Eng. /Boosters), the English-speaking writer repeatedly used the booster *found* to highlight the validity of his findings through comparing his results with other studies in the literature. The English-speaking writers also used boosters to emphasize the validity of their results by referring to the

figures and tables (36-Eng. /Boosters) and to stress the significance of specific findings (37-Eng. /Boosters), and underline suggestions for further research.

---

(35-Eng. /Boosters)

This, however, was similar to the result **found** for centrally air-conditioned buildings in a large meta-study (de Dear, Brager, and Cooper 1997, 70) and indicates greater sensitivity than that **found** for both naturally ventilated and mixed-mode buildings in the same study, which **found** a mean model gradient of 62% and 65%, respectively.

(36-Eng. /Boosters)

This study has **shown** that for particular building assemblies, the energy embodied in material replacement can represent between 7 and 110% of the initial embodied energy of each assembly.

(37-Eng. / Boosters)

**It became clear that** there is **certainly** more to occupants' satisfaction with a building than their environmental comfort.

---

In a similar way, the Persian writers used boosters to emphasize the objectivity of the results. The following examples reveal how boosting features such as *البته* (ofcourse), *نشان دادن* (show), and *روشن* (clear) assist the Persian writers to emphasize the validity of their arguments through activating the readers' background knowledge (38-Per./Boosters) and interpreting the results by referring to the tables and figures (39-Per./Boosters and 40-Per./Boosters).

---

(38-Per. /Boosters)

طبق آمار منتشر شده تعداد واحدهای مسکونی ساخته شده در شهر تبریز طی دهه های اخیر رشد زیادی را تجربه کرده است، **البته** قسمتی از این افزایش در پی جبران نیاز جمعیت افزایش یافته است.

According to the published statistics, the number of residential units constructed in Tabriz during the last decade has drastically increased, **ofcourse** part of the increase has been to meet the needs of the population.

(39-Per. /Boosters)

آمارهای پایش غبار ایستگاه دزفول نشان داده است که 90 / 06 درصد از روزهایی که در جداول بالا مشخص شده اند، توأم با غبار آلودگی بوده اند. بدین ترتیب، روشن می شود غباری را که در این پژوهش اندازه گیری شده، بادهای غبار آور به این منطقه منتقل کرده است.

Dezful's dust monitoring data has shown that 90.06% of the days marked in the above tables have been contaminated with dust. Thus, it becomes obvious that the dust found in this study has been transmitted by dusty winds to the area.

(40-Per. / Boosters)

همان طور که در نمودار (2) مشاهده میشود، بیشترین فراوانی مساحت خانه ها بین 100 تا 300 مترمربع و میانگین آن ها نیز 293 مترمربع است.

As it is shown in diagram (2), the most frequent floor area of the houses is between 100 to 300 square meters and their average amount is 293 square meters.

#### 4.2.3 Attitude markers: Lexico-grammatical Analysis

Table 4.14 shows that the Persian writers used attitude markers more than the English-speaking writers (616 and 399, respectively). Attitude markers are found in three word classes, namely verbs, adverbs, and adjectives across the two sub-corpora. The English-speaking writers use 197 attitudinal adjectives, 113 verbs and 89 adverbs in the post-method sections of their articles. The Persian writers use 566 attitudinal adjectives, 21 verbs, and 36 adverbs. Both groups of writers use attitudinal adjectives more frequently than attitudinal verbs and adverbs. It can be said that the difference between the frequency of attitudinal adjectives with those of verbs and adverbs in the Persian articles is significant (566 and 57, respectively).

Table 4.14: Frequency Distribution of Attitude Markers (per 10,000)

Category	English	Persian
Verbs	113 (10.0)	21 (2.0)
Adverbs	89 (7.8)	36 (3.4)
Adjectives	197 (17.4)	566 (53.1)
Total	399 (35.2)	616 (57.8)

Table 4.15: The Most Frequent Attitude Markers

No.	Word	Frequency%	No.	Word	Frequency%
1	important (adj.)	26.8%	1	مناسب (adj.)	29.2%
2	Prefer* (verb)	15.5%	2	مهم (adj.)	22.0%
3	expected (adj.)	8.7%	3	مطلوب (adj.)	8.0%
4	even x (adv.)	11.0%	4	لازم (adj.)	4.9%
5	appropriate (adj.)	6.7%	5	قابل توجه (adj.)	4.2%
6	interesting (adj.)	5.2%	6	پراهمیت (adj.)	3.4%
7	essential (adj.)	3.2%	7	حتی (adv.)	2.7%
8	surprising (adj.)	3.0%	8	معمولا (adj.)	2.6%
9	essentially (adj.)	2.5%	9	نامناسب (adj.)	2.6%
10	agree (verb.)	2.2%	10	اساسی (adj.)	2.1%

Note1: prefer= prefer, preferred, prefers;

Note 2: The translation of the Persian words respectively are as follows: 1. appropriate, 2. important, 3. appropriate/preferred, 4. essential, 5. remarkable/considerable, notable usually, 6. essential, important; 7. even x, 8. usually; 9. inappropriate 10. basic, important.

Table 4.15 offers a comprehensive look towards the distribution of attitudinal features at the lexical level in each sub-corpus. In the English sub-corpus, the adjective *important* is the most frequently used item, since it constitutes 26.8% of the total number of attitudinals occurred in this sub-corpus. The next common attitude marker is the verb *prefer* with the percentage occurrence of 15.5. The adjective *expected* (8.7%) and the adverb *even* (11.0%) are consecutively the next frequently used items in the English sub-corpus.

---

(41-Eng. / Attitude Markers)

This is **particularly important** when regulations set out the conditions for thermal performance and energy assessment for buildings.

(42-Eng. / Attitude Markers)

Against the background of climate change, protection of **important** habitats and ecosystems for biodiversity conservation within the Cairns urban footprint seems **even more important**.

(43-Eng. / Attitude Markers)

Given this effort they might **be expected** to be the most **preferred** and when rated purely on beauty they were rated significantly higher than the sedum roofs.

(44-Eng. / Attitude Markers)

**As somewhat expected**, the analysis showed that the larger houses typically consumed more energy (see Table 4 and Figure 3) with no house less than 200m<sup>2</sup> using more than 20 kWh/ph/pa.(45-Eng. / Attitude Markers)

(45-Eng. / Attitude Markers)

We have presented, justified and applied a hierarchical decision framework that prioritizes high-risk neighborhoods and then selects **the most appropriate** UGI elements for various contexts.

(46-Eng. / Attitude Markers)

**It is interesting that** some of the occupants found the buildings very sustainable, but they did not find using modifiers conflicted with that view.

(47-Eng. / Attitude Markers)

Protection from particulate matter therefore is **essential**, particularly in heavily polluted areas.

(48-Eng. / Attitude Markers)

**This is somewhat surprising** given that accessibility was consistently prioritized by residents.

---

On the contrary to the English-speaking writers who use varieties of word classes including adjectives, adverb, and verbs, the Persian writers mainly rely on adjectives to do so in their propositions. The adjectives, مناسب (appropriate), and مهم (important), constituting 29.2% and 22.0% of the total number of Persian attitude makers occurred in this sub-corpus, are the most commonly used attitudinal features (Table 4.15). The analysis of the Persian sub-corpus revealed that the adjectives of appropriacy, such as مطلوب (appropriate, preferred) and مناسب (suitable, appropriate) and importance such as مهم (important) and پر اهمیت (important) alone constituted more than 62% of the total number of attitudinal adjectives.

---

(49-Per. / Attitude Markers)

مدلهای زایشی (ترسیمی- طراحی) به عنوان یکی از **مناسب ترین** روش ها جهت استخراج بازنمایی ادراک محیطی معرفی شده است.

Generation models (Draw-Design) have been introduced as one of **the most appropriate** methods to extract the representation of perceptual perception.

(50-Per. / Attitude Markers)

همان طور که اشاره شد هدف از این تحقیق دریافت رنگمایه **مناسب** سالن امتحانات، از دید دانشجویان است.  
As it was mentioned, the purpose of this study is to find the **appropriate** color of the exams hall, from the viewpoint of the students.

(51-Per. / Attitude Markers)

بنابراین شهروندان **مهم ترین** مسائل کیفیت محیط در بافتهای فرسوده در قزوین را در مؤلفه های مدیریتی و وضعیت اقتصادی محله خود میدانند.

Thus, according to the residents, **the most important** environmental quality issues of derelict textures in Ghazvin concern the management elements and economic situation of their neighborhood.

---



In addition, according to the results, adjectives such as لازم (necessary, essential) (4.9%), قابل توجه (considerable, notable, important) (4.2%), نامناسب (inappropriate) (2.6%) and attitudinal adverbs such as حتی (even x) (2.7%) and معمولاً (usually) (2.6%) are found to be used frequently by the Persian writers.

---

(52-Per. / Attitude Markers)

البته برای رسیدن به این مهم، تحقیقاتی بیشتر با توجه به جزئیات مختلف این زمینه لازم خواهد بود.  
Ofcourse, it will be **necessary** to conduct more research on different details of this field.

(53-Per. / Attitude Markers)

بنابراین سایه ایجاد شده بر روی دیوارها، اثر قابل توجهی بر کاهش دمای فضاهاى داخلی خواهد داشت.  
Therefore, the shadow created on the walls will have a **considerable** impact on reducing the temperature of the interior spaces.

(54-Per. / Attitude Markers)

اما درخصوص محله عودلاجان، 85 درصد اظهار کرده اند که این محله را نمیشناسند و حتی نام آن را نشنیده اند.  
However, regarding Oudlajyan's neighborhood, 85 percent said they did not know the neighborhood and they **even** had not heard its name.

(55-Per. / Attitude Markers)

شرط سوم اینکه واریانس تبیین شده هر عامل باید به تنهایی بالاتر از 10 باشد تا عامل مربوطه به عنوان عامل مبین موضوع شناخته شود که معمولاً در مطالعات شهری شرط سوم محقق نمیشود.  
The third condition, which is not **usually** met in urban studies, is that the explained variance of each factor alone should be higher than 10 to recognize it as the indicator of the subject.

---

### Attitude Markers: Functional Analysis

The investigation of the rhetorical functions of attitudinals in the English sub-corpus illustrated that the English-speaking writers used these linguistic devices to stress the interestingness of their findings (56-Eng. /Attitude Markers), to emphasize the significance of their results (57-Eng. /Attitude Markers) and to highlight their personal judgements towards them (58-Eng. /Attitude Markers).

---

(56-Eng. /Attitude Markers)

**What is more interesting** though is the significant relationship between ethnicity and personal efficacy to address storm water management.

(57-Eng. /Attitude Markers)

While cohesion of the core is thus an **important** factor for stability of the wall type constructed, we note that geometry of the cores is also **important**.

(58-Eng. /Attitude Markers)

It is **surprising** that hot lime poulticing was continued for the major part of the campaign.

---

Yet, attitudinals were found to be employed with less functional diversity in the Persian sub-corpus. According to the results, the Persian-language writers mainly use attitude markers to emphasize the importance (59-Per. /Attitude Markers) and appropriacy of their findings (60-Per. /Attitude Markers).

---

(59-Per. /Attitude Markers)

**مهم ترین** دستاورد نقشه های شناختی به دست آمده در وهله اول، باز شناسی ویژگی های شناختی با اهمیت محیط مصنوع سه محله به طور جداگانه است.

**The most important** achievement of the cognitive maps obtained in the first place is the recognition of the cognitive characteristics of the artistic environment of the three neighborhoods separately.

(60-Per. /Attitude Markers)

شاخص های پایداری محلی، با سنجه های **مناسب** مورد ارزیابی قرار گرفت که جدول 4 به این سنجه ها و میانگین و انحراف معیار آنها اشاره دارد.

Local sustainability indicators were studied through using **appropriate** measures. Table 4 shows the measures and their mean and standard deviation.

---

#### 4.2.4 Self-mentions: Lexico-grammatical Analysis

Table 4.16 illustrates a great difference between the two sub-corpora in the employment of self-mentions. The English-speaking writers use self-mentions 313

times in their texts, while the number of self-mentions in the texts written by the Persian writers sharply declines and only reaches to 33 markers.

Despite the great difference, the two sub-corpora are similar in the absence of first-person singular pronouns (I, me, mine). In other words, both groups of architects, English and Persian, avoid using first-person singular pronouns, which are usually the most frequent self-mention markers in research articles in other disciplines (Hyland, 2002).

Table 4.16: The Most Frequent Self-mention Markers

English Sub-corpus			Persian Sub-corpus		
Linguistic items	Frequency	(%)	Linguistic items		Frequency (%)
<b>Pronouns:</b>			<b>Pronouns:</b>		
We	166	53.0%	ما	/ma/	2 60.0%
Us	9	2.9%	به ما / از ما / ما / را	/be ma//az ma/ /ma ra/	0 0.0%
Our	122	39.0%	-مان	/-man/	0 0.0%
I/my/mine/me	0	0.0%	/م- مرا/ برای من	/-am/ /mara/ /baraye man/	0 0.0%
<b>Nouns:</b>			<b>Nouns:</b>		
The author(s)	14	4.5%	نگارنده(گان)	/negarande(gan)/	6 18.2%
The writer(s)	0	0.0%	نویسنده(گان)	/nevisande(gan)/	0 0.0%
<b>Other Observed Nouns</b>			<b>Other Observed Nouns</b>		
the researchers	1	0.32%	محقق(ان)	/mohaghegh(an)/	5 15.1%
			پژوهشگر(ان)	/pajuheshgar(an)/	2 6.0%
Total	313				33

In the English sub-corpus, exclusive first-person plural pronouns of *we* and *our*, are the most frequent items (53.0% vs. 39.0%). These pronouns seem to be the main linguistic devices used by the English-speaking writers to explicitly show their

presence in the discussions. The objective pronoun *us*, however, constitutes only 9.0% of the total number of self-mentions in the English sub-corpus. In fact, exclusive first-person plural pronouns constitute 95% of the total number of self-mentions used in this sub-corpus.

---

(61-Eng. /Self-mentions)

**We** defined an “active core” as a neighborhood that has a 50% higher rate of active transportation (walking or cycling) than the overall average for the CMA.

(62-Eng. /Self-mentions)

**Our** results do not suggest that streetscape enclosure should be considered a silver bullet for improving safety perceptions.

(63-Eng. /Self-mentions)

The landscape and habitat visualisations helped **us** to understand the complex dynamics **we** have described here, and deeply influenced **our** resulting engagement with policy makers.

---

On the contrary to the English sub-corpus, the exclusive first-person plural pronouns, specifically the pronoun ما (we), constitutes 60% of the total number of self-mentions in the Persian sub-corpus. Furthermore, the objective pronoun of ما (us), and possessive pronoun مان-(our) were not used by the Persian writers. It is worth noting that in Persian language subjective pronouns can appear in two forms, pronouns and personal suffixes added to the end of the verbs, since Persian is a pro-drop, or null-subject language. In our analysis, we have taken into account both possible forms.

---

(64-Per. /Self-mentions)

از سوی دیگر با توجه به نقشه 13 کاربری خیابانهای شهر همدان در دهه 80(ه.ش)، **میتوانیم بیان کنیم** که نقش عام شش خیابان طرح کارل فریش، تجاری است.

In addition, considering map 13, which shows the uses of Hamedan streets in 1380s (AH) decades, **we can argue** that the 6 streets of Carl Frish’s generally take commercial roles.

(65-Per. /Self-mentions)

روش تحلیل عامل، روش تحلیل مؤلف‌های اصلی انتخاب شد، زیرا در این پژوهش درصدد پی‌شینی و تعیین کمترین تعداد عاملها هستیم که قادر باشد بیشترین واریانس موجود در مقادیر اصلی را تبیین کند.

The method of factor analysis was selected as the main component analysis method, because in this research **we** are going to predict and determine the lowest number of factors that can explain the most variance in the main values.

---

The frequency of nouns in both sub-corpora are close to each other, 15 nouns in the English and 13 nouns in the Persian sub-corpus. However, considering the percentages of the appearance of nouns to the total number of self-mention features in each sub-corpus reveals that self-mention nouns constitute around 40% of the total number of self-mentions in the Persian sub-corpus, however, this amount in the English sub-corpus is only 4.7%. It seems that while the English-speaking writers mainly prefer to use self-mention pronouns, the Persian writers tend to use both self-mention pronouns and nouns in their texts.

A closer look at Table 4.16 also reveals that the English-speaking writers use the term *author* 14 times and do not use its equivalence, *writer*, in their academic texts (66- and 67- Eng./Self-mentions). Similarly, the Persian writers make use of the term (نگارنده‌گان) (the equivalence of *author*) in 6 sentences and do not use the term (نویسنده‌گان) (the equivalence of *writer*) in their discussions (68- and 69- Per./Self-mentions).

---

(66-Eng. /Self-mentions)

In order to assess whether the Loveland impact-fee program resulted in exclusivity, **the author** conducted an analysis of covariance (ANCOVA).

(67-Eng. /Self-mentions)

**The author** fitted a different regression model for each city for each response variable.

(68-Per. /Self-mentions)

اطلاعات مربوط به خانه سلماسی، از گفتگوی شخصی **نگارندگان** با آقای داود سلماسی و مادر ایشان به دست آمده است که دورانی از زندگی خود را در این خانه گذرانده و خاطراتی از گذشته آن دارند.

The information related to Salmasi' house was gathered from the personal interviews of the **authors** with Mr. Davoud Salmasi and his mother who spent a part of their lives in this house and have memories of its early days.

(69-Per. /Self-mentions)

با وجود فقدان مستندات، **نگارندگان** تلاش کرده اند تا شیوه نورگیری و تهویه را در مجموعه تخت جمشید، براساس دلایل متقن و محکم تبیین نمایند.

Despite lack of evidence, **the authors** have tried to offer technical and logical explanation of the optical and air-conditioning systems of Takht-e-Jamshid complex.

Moreover, the results reveal that the Persian writers prefer to use the terms such as پژوهشگر and محقق (the equivalences of *researcher*) to mention their personal identity in their discussions (71- and 72- Per./Self-mentions). Yet, the English-speaking writers use the term 'researcher' only once in their articles (70-Eng. /Self-mentions).

---

(70-Eng. /Self-mentions)

**The researchers** had to probe and prompt to encourage respondents to think about the influence of design, and they were much happier discussing the design of homes other than their own.

(71-Pers. /Self-mentions)

براساس تصاویر 3 و 5 نقشه های پیمایش اکتشافی **محقق** و نقشه های شناختی ساکنان و غیرساکنان در اجزای شناختی مسیر، گره و نشانه، در مجموع انطباق تقریباً کاملی را به لحاظ شناخت ویژگی ها نشان میدهند.

According to figures 3 and 5, the exploratory survey of the **researcher**, and the cognitive maps of habitants and non-habitants regarding the paths, nodes, and landmarks of the city show an almost complete overlap in the identification of features.

(72-Pers. /Self-mentions)

همچنین با استفاده از نظرسنجی های مذکور در کنار مشاهده مستقیم **پژوهشگر** از نمونه های موردی انتخاب شده، ماتریس های مقایسه زوجی بخش های گوناگون مطالعه تشکیل میشود.

In addition, using the surveys and the direct observation of **the researcher** from the selected case studies, the comparison matrices of the various sections of the study are formed.

---

### **Self-mentions: Functional Analysis**

It was found that the English-speaking writers use self-mentions to highlight varieties of rhetorical functions, such as describing the steps they have taken in the data analysis section (73-Eng./ Self-mentions), highlighting their contributions in the field (74-Eng./ Self-mentions), discussing the limitations and delimitations of their study (75-Eng./ Self-mentions), and expressing their stance on the propositions (76-Eng./Self-mentions).

---

(73-Eng. /Self-mentions)

**We** tested the built-form definitions proposed by Statistics Canada (Turcotte, 2008a, 2008b, 2009) and our pilot study in 10 CMAs using 2006 data.

(74-Eng. /Self-mentions)

**We recommend that** planners and policymakers begin to view shrinkage as an opportunity and not as a hindrance.

(75-Eng. /Self-mentions)

Third, **our** personalized approach to landscape visualization may have disadvantages.

(76-Eng. /Self-mentions)

In **our** attempts to produce a classification model that would reproduce the results on the ground, **we** drifted further and further from the slender theoretical bases of the **built-form literature**.

---

On the contrary to English-speaking writers who employ self-mentions for different purposes, a quick glance at the Persian sentences illustrates that Persian writers use self-mentions mainly to explain the steps they have taken as the researcher in data analysis (77- and 78- Per. /Self-mentions). In addition, in few other cases, they use the markers to stress their authorial self in the discussions (79- and 80-Per. /Self-mentions).

---

(77-Per. /Self-mentions)

اگر **بخواهیم** به سنجش تطبیقی در بین دو گروه مطالعه شونده (شهروندان و شهرسازان) **بپردازیم**؛ **میتوانیم** به میزان هم سو بودن انگاره های آنها در خصوص کیفیت محیط بافت های فرسوده اشاره کرد.

In **our** discussion on the comparative assessment between the two groups (citizens and city planners), **we** must consider the correlation of their patterns in terms of the quality of urban derelict areas.

(78-Per. /Self-mentions)

برای به دست آوردن آمار توصیفی از هر معیار، مجموع امتیاز سوالات مربوط به آن معیار برای هر پرسش شونده **محاسبه کرده ایم** و متناسب با تعداد سوالات، امتیازات را **دسته بندی کرده ایم**.

To obtain the descriptive statistics of each criterion, **we** calculated the total score of the questions related to that criterion from each respondent. Moreover, **we** have ranked the scores according to the number of questions.

(79-Per. /Self-mentions)

این وضعیت با دیدگاه **نگارندگان** نیز همخوانی دارد، چرا که احتمالاً با شروع روز و وقت اداری مجموعه تخت جمشید، دروازه غربی تا پایان روز بسته نمی شد.

This situation is also in line with **the authors'** perspectives, since with the start of the day and office time in the Persepolis complex, the western gate could no longer be closed till the end of the day.

(80-Per. /Self-mentions)

برداشت های میدانی **نگارندگان** نیز نشان می دهد که عدم مدیریت و برنامه ریزی مناسب، سبب تغییرات نامطلوب اجتماعی، کالبدی و ترافیکی در نواحی مجاور ایستگاه های مورد مطالعه به خصوص در نواحی شمالی شده است.

Field observations of **the authors** also show that lack of proper management and planning has caused adverse social, physical and traffic changes in the adjacent areas of the stations studied, especially in the northern regions.

---

#### 4.2.5 Engagement Markers: Lexico-grammatical Analysis

As it was mentioned earlier in the statistical analysis of engagement markers, the two groups of English-speaking and Persian writers are different in the employment of engagement markers in the post-method sections of architecture articles (129 vs 164).

Table 4.17 provides detailed information regarding different engagement features used by both groups of the writers. As it is shown, the engagement features appeared in four groups (1) reader pronouns, (2) directives, (3) personal asides, and (4) questions in both English and Persian sub-corpora. The first category, 'reader pronouns' are



divided into three parts of (1) first person plural inclusive pronouns of *we*, *us*, and *our*, (2) second person plural pronoun *you*, (3) the possessive pronoun *one's*. The results show that both groups of English-speaking and Persian writers use equal number of first person plural inclusive pronouns (21 in each group) to engage with their readers and to share their knowledge and experience with their readers.

Table 4.17: The Frequency of Engagement Features in the Corpus

Engagement Features		English sub-corpus Frequency (%)	Persian sub-corpus Frequency (%)
Reader Pronouns	1 <sup>st</sup> person plural inclusive pronouns	21 (16.2%)	21 (12.8%)
	2 <sup>nd</sup> person plural pronouns	0 (0.0%)	0 (0.0%)
	One's	4 (3.1%)	0 (0.0%)
Directives	Modals of obligation	69 (53.5%)	93 (56.7%)
	Predicative adjectives	22 (17.0%)	38 (23.2%)
	Imperative verbs	10 (7.7%)	0 (0.0%)
Personal Asides		1 (0.7%)	10 (6.1%)
Questions		2 (1.5%)	2 (1.2%)
Total		129	164

Both groups use the inclusive pronouns of *we*, *our*, and *us* 21 times in their propositions (81- and 82-Eng./ Engagement M. and 84- and 85-Per./ Engagement M.). In addition, the two groups are shown to avoid using the second person pronouns of *you*, which is considered as the sign of explicit presentation of the writers' authority in the academic arguments. In addition, 4 cases of using *one's* was observed in the English sub-corpus (83-Eng./ Engagement M.), while there is no sign of using its equivalent form in the Persian sub-corpus which most probably results from differences between the linguistic structures of Persian language with those of English.

---

(81-Eng. /Engagement M.)

The landscape must be simple enough to be understood but not so simple that **we** lose interest.

(82-Eng. /Engagement M.)

Despite the increasing amount of research on how UGI can pre-vent climatic extremes in urban areas, **our** understanding remains fragmented and the level of ‘take up’ by urban planners is low.

(83-Eng. /Engagement M.)

Among these, beliefs regarding **one’s** typical thermal state were found to be important, regardless of **one’s** actual thermal state.

(84-Per. /Engagement M.)

ما فقط مکان آن منظر را از دست **نمیدهیم** بلکه خودمان را و تداوم بین تغییرات ادوار گوناگون زندگی **مان** را از دست **می دهیم**.

Not only **we** will lose the view of that landscape but also **we** lose ourselves and the continuity of the changes of **our** lives.

(85-Per. /Engagement M.)

آنچه **ما** در مواجهه نادرست با مدرنیسم **داشتیم** و گسست معماری و بحران هویتی که از آن سخن به میان **می آوریم** ناشی از این عدم توجه است.

What **we** experienced in **our** inapposite confrontation with modernism, the breakdown of architecture, and identity crisis that **we** are discussing about, are due to such scant attention.

---

According to the results, the ‘directives’ are the most frequently used engagement features across both sub-corpora. Directives consist of three sub-categories (1) modals of obligation, i.e. *should*, *must*, *need to*, and *have to*, (2) predicative adjectives, such as *it is important to*, *it is essential to*, *it is required to*, and (3) imperative verbs (Hyland, 2002b). In total, the English-speaking writers make use of 101 directive features and the Persian writers use 131 directive features in their academic arguments. There are some differences between the two sub-corpora in the frequency of the sub-categories of directives, i.e. modals of obligation, predicative adjectives, and imperative verbs.

First, the results present a higher inclusion of modals of obligation in the Persian sub-corpus. These modals occur 93 times in the Persian sub-corpus (88- and 89- Per./Engagement M.) and 69 times in the English one (86- and 87- Eng./Engagement M.).

---

(86-Eng. /Engagement M.)

It **must be noted that** first block fall was dependent on friction angle, tensile strength, and block discretization.

(87-Eng. /Engagement M.)

Dollar figures assigned to nature **should be treated** with caution, since they fail to capture the intrinsic value of living species.

(88-Per. /Engagement M.)

**باید یادآور شد** یافته های پژوهش حاضر، اولین یافته ها در این زمینه است و همین طور که پژوهشگران میدانند پژوهشهای گسترده تری باید در ادامه این کار انجام شود.

It **should be noted that** the findings of the present study are the first in the field and as all the researchers know more extensive studies needs to be done in this regard.

(89-Per. /Engagement M.)

از سویی **باید توجه کرد که** برخی فعالیت ها نیز در مقاطع مشخص و با توالی مناسب زمانی روی میدهند و پیرو عادت وار ه ها نیستند.

On the one hand, **it should be noted that** some activities are carried out at within specific time intervals and appropriate sequences and do not follow habitudes.

---

Moreover, the two groups are different in their employment of predicative adjectives.

In fact, the Persian writers employ the predicative adjectives 38 times (92- and 93- Per./Engagement M.), while their English-speaking counterparts use them 22 times in their articles (90- and 91- Eng./Engagement M.).

---

(90-Eng. /Engagement M.)

The resulting work is typically riddled with errors, but **it is important that** the group 'has a go', even when they have doubts about the correctness of their work.

(91-Eng. /Engagement M.)

It is clear that on small laboratory samples, **it is essential to** use a non-conductive/capacitive layer to prevent readings being influenced by worktops or other surfaces beneath or around the sample.

(92-Per. /Engagement M.)

بدین منظور توجه به کاربری های سازگار با پیاده محوری امری **لازم و ضروری** است.  
To do so, **it is** critically **essential to** consider the uses compatible with walkability principles.

(93-Per. /Engagement M.)

در ارزیابی کارایی عایق حرارتی با توجه به ارقام ارائه شده در بالا، **توجه به این نکته اهمیت بسیار دارد که** به علت دمای پایین هوای داخل ناشی از خاموش بودن سیستم گرمایشی عایق حرارتی نمیتواند تأثیر زیادی در دمای هوای داخل داشته باشد.

Considering the above-mentioned figures of the evaluation of the performance of the thermal insulator, **it is important to note that** due to the low temperature of the indoor air temperature, caused by switching off the heating system, the insulator can not have much effect on the indoor air temperature.

---

There is also a difference between the English-speaking and Persian writers in the employment of imperative verbs, since the former use the verbs 10 times in their academic discussions (94-, 95-, and 96- Eng./Engagement M.), while the latter generally avoid using the imperative verbs in their discussions.

---

(94-Per. /Engagement M.)

**Avoid** areas with irregular surfaces, such carvings, extremely weathered surfaces or other air pockets that may result in artificially low readings.

(95-Per. /Engagement M.)

**Compare** meter readings taken on different types of stone or with different meters with caution.

(96-Per. /Engagement M.)

**Do not assume that** fresh and weathered samples of the same stone type will behave in a similar way.

---

The third engagement feature according to Table 4.17 is personal asides. These features allow the writers to briefly interrupt the argument and offer their comments on the presented proposition. According to the results, Persian writers use personal asides in 10 different concordance lines (97- Per./Engagement M.), while English-speaking writers only use them once in their discussions (98-Eng. /Engagement M.).

---

(97-Eng. /Engagement M.)

In terms of the nature of the sensitivity, people self-identifying as being more sensitive to cold would expect to report a higher than expected thermal neutrality and hence a regression constant of less than the RP-884 mean of 0.68 for mixed-mode buildings **(interestingly, the RP-884 mean model constants for air-conditioned buildings and natural ventilated buildings were 0.06 and -0.04, respectively).**

(98-Eng. /Engagement M.)

تحقیق حاضر نشان داد، مؤلفه های "احساسی"، "عملکردی" و "معنایی" در ایجاد دل بستگی به میدان و در نهایت هویت مندی میدانهای شهری، نقش مؤثری ایفاء کرده، **در عین حال رابطه ای مستقیم بین مؤلفه های مذکور نیز وجود دارد.**

This study suggests that the 'emotional', 'practical', and 'semantic' factors have played key roles in establishing the place attachment and ultimately making identity for urban squares; **by the way, there is a positive relationship between the aforementioned factors.**

---

Finally, the two groups are shown to be similar in the employment of questions. The writers of both groups do not show any tendency to involve their readers in the discussions through asking direct questions, as questions occur only 4 times in both sub-corpora, each sub-corpus contained two questions, which are shown below.

---

(99-Eng. /Engagement M.)

**If street trees increase sales price, why do not trees on the lot?**

(100-Eng. /Engagement M.)

**Even though the authors of the Framework Plan do not acknowledge the demographic trends of the previous decades or the possibility that the medium-term future could be like the region's recent past - are they, nonetheless, incorporating smart decline strategies?** The answer is yes.

(101-Eng. /Engagement M.)

به راستی ریشه آیینی باغ ایرانی، مراسم آتش بازی، سنت نقاره زنی، جوگان بازی و غیره که همگی در میدان بزرگی چون نقش جهان گرد هم آمده اند در چیست؟

**In fact, what are the ritual origins of Iranian garden, fireworks display, Naghare-zani tradition, polo playing, etc. which were all gathered together in the great square of Naghsh-e-Jahan?**

(102-Eng. /Engagement M.)

اما آیا واقعاً کالبد میدان نقش جهان از مقبره شیخ صفی الهام گرفته شده و چون مقبره شیخ صفی می تواند دارای سلسله مراتب فضایی متناظر با هفت مرحله عرفان باشد؟

**Is Naghsh-e-Jahan Square inspired by Sheikh Safi's tomb, and can it possess a spatial hierarchy corresponding with the seven stages of mysticism, similar to sheikh Safi's tomb?**

### **Engagement Markers: Functional Analysis**

The investigation of the rhetorical functions of engagement markers in the English sub-corpus indicates that the English-speaking writers use engagement markers to highlight important points in data analysis (103- and 104-Eng./ Engagement M.), to draw implications or to state recommendations for further research (105-Eng./ Engagement M.) and to attract the readers' attention towards the delimitations of the research (106-Eng./ Engagement M.).

(103-Eng. /Engagement M.)

**It should be noted that** the average illuminance set during the low stimulus range conditions was well within the upper limit of the range available (500 lux).

(104-Eng. /Engagement M.)

**Note that** for the most pointed groin vault ( $r/b = 100\%$ ) with the smallest inclusion angle ( $s/b = 70.7\%$ ) and nominal tensile strength, the minimum thickness vault is extremely thin ( $t/(s/2) = 0.2\%$ ), as expected.

(105-Eng. /Engagement M.)

The results further suggest that utility consumption is a key factor, which **should be considered** in models evaluating the economic, social and environmental aspects that affect QoL.

(106-Eng. /Engagement M.)

Until such a system is incorporated into a house museum, specific regulations **must be adhered to** so that success of RGA as a moisture controlling method can be assured.

According to the results, the Persian writers make use of engagement markers to emphasize on the importance of data analysis tools or procedural steps used in their study (107- and 108-Per./ Engagement M.), to discuss the implications of findings and to make suggestions for further research (109- and 110-Per./ Engagement M.).

---

(107-Per. /Engagement M.)

**لازم به ذکر است که** فرایند ورود داده ها و پردازش آنها توسط نرم افزار، حجم عملیاتی گسترده ای دارد. بنابراین تنها خروجی نهایی مدل ارائه می گردد.

**It should be noted that** the process of data entry and processing by software has a large operational volume. Therefore, only the final output of the model is presented.

(108-Per. /Engagement M.)

از آنجاییکه در این پژوهش، برای یکسان سازی واحدها، واحد زمان، واحد روز انتخاب شده است، **لازم است** مقیاس ساعتی آمار باد دریافت شده از سازمان هواشناسی به روزانه تبدیل گردد.

Since in order to equalize the units in this research, 'day' has been selected as the time unit, **it is necessary to** convert the hourly basis wind information received from the meteorological organization to a daily basis.

(109-Per. /Engagement M.)

**باید یادآور شد** یافته های پژوهش حاضر، اولین یافته ها در این زمینه است و همین طور که پژوهشگران میدانند پژوهشهای گسترده تری **باید در ادامه این کار انجام شود**.

**It should be noted that** the findings of this study are the first in this regard, and as researchers know, further research **needs to be done** in this area.

(110-Per. /Engagement M.)

از این رو **ضروری است که** ابعاد مختلف در طراحی این فضاها در نظر گرفته شود تا فضاها در مقیاسهای مختلف بتوانند در کنار یکدیگر به ایفای نقش خود بپردازند.

Therefore, **it is essential to consider** different dimensions in the design of these spaces so that the spaces with different scales can work together properly.

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#### 4.2.6 Summary of Research Question #2

While in the first research question, we tried to find out whether there is significant difference between the English and Persian academics in the field of architecture in the use of interactional metadiscourse markers, in the second research question we intend to show how differently these markers are employed by the two groups. The results revealed both similarities and differences in the preferred interactional resources of English-speaking and Persian writers. Some of the major findings of this section are listed below.

1. Both the English-speaking and Persian academic writers use modals of possibility *may*, *would*, and *could* and the main verb *suggest* more than other hedging features in their arguments.
2. Both English-speaking and Persian writers prefer to use the main verbs *show*, *demonstrate*, and *find* more than other emphatic resources.
3. The English-speaking and Persian writers use hedges and boosters for similar functions.
4. The Persian writers mainly prefer to use attitudinal adjectives to show their personal affections towards the propositions.
5. There are differences in the functions of attitude markers across the English and Persian sub-corpora. The English-speaking writers use attitude markers for different purposes, yet the Persian writers mainly use attitude markers to emphasize the importance and appropriacy of their propositions.
6. The analysis of self-mentions shows that the exclusive first-person pronouns constitute 95% of the total number of self-mentions appear in the English architecture articles. However, this amount in the Persian articles reduces to only 60%.



7. Self-mention nouns constitute around 40% of the total number of self-mentions in the Persian corpus; however, this amount in the English corpus is only 4.7%.
8. The analysis of engagement markers demonstrates that Persian writers use more directives and personal asides comparing to their English counterpart.
9. Both groups of writers are similar in the number of reader pronouns and questions they use to engage their potential readers.
10. There are similarities in the functions of engagement markers across both sub-corpora.

### **4.3 Research Question #3: What are the Most Frequent Interactional Lexical Bundles Identified in the Post-method Sections of English and Persian Architecture Articles?**

In the third research question, we will take a look at the most common interactional bundles in the English and Persian architecture articles. The interactional bundles include hedge bundles, booster bundles, attitude bundles, self-mention bundles, and engagement bundles. In each sub-category, the forms and functions of the most frequently used bundles across the two languages will be discussed in detail.

#### **4.3.1 Hedge Bundles**

The investigation on the employment of hedging resources across architecture research papers illustrates a number of preferred patterns by the writers of both languages. Table 4.18 demonstrates that the most frequent hedge bundles in the English sub-corpus mainly involved the epistemic main verbs, including *appear* and *suggest*, the epistemic modal verbs such as *would* and *may*, and the epistemic adverbs and adjectives such as *likely* and *possible*. Based on the results, the English-speaking writers have tendency to use the reporting bundles such as *appear(s) to be*, *suggest(s) that the, appears to*

*have*, and *indicate that the* more frequently than other hedge bundles, since in total these bundles have been used more than 70 times in their texts. Using reporting bundles enables the English-speaking writers to present their findings and claims in a tentative way.

Table 4.18: Frequent Hedge Bundles in the English Sub-corpus

<b>3-word</b>	<b>Freq.</b>	<b>Multi-word</b>	<b>Freq.</b>
appear(s) to be	37	be More likely to	14
be likely to	22	be Less likely to	8
likely to be	19	it might be possible (to)	6
it may be	17	be More likely to (be)	6
may not be	17	it is possible that	5
suggest(s) that the	17	it is possible to	5
may have been	14	they would feel that	4
as suggested by	13	may be more likely	4
this suggests that	12	may also be possible	4
it is possible	11	would appear to be	4
they would feel	10	may be due to	4
be possible to	10	is likely to be	4
may be more	10	it is possible that	5
they would be	9	may not be possible	4
not appear to	8	may have been due to	4
appear to have	8	not appear to be	4
may also be	8	however it may be	4
indicate that the	8	argued that it is	3
this may be	8	appear to have been	3

(111-Eng. /Hedge Bundles)

The facade **appears to be** seriously damaged by surface erosion, together with thick black crusts, biological crusts, microfractures and detachment.

(112-Eng. /Hedge Bundles)

In the context of the lifetime of medieval buildings, this technique **does not appear to be** useful.

(113-Eng. /Hedge Bundles)

The cross-tabulation of the subjective measures of thermal sensation, preference and comfort **suggests that** it may be worth considering conditions at the time votes outside of the traditional 3 ‘slightly cool’, 4 ‘neutral’ and 5 ‘slightly warm’ ASHRAE scale in the description of thermal comfort for the two case study cohorts.

(114-Eng. /Hedge Bundles)

An important motivation for this study is the appearance of recent physiological studies, which use skin-conductance measurements or qEEG and **indicate that the** fractal dimension is an important feature for architectural image analysis.

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The English-speaking writers also use anticipatory it bundles such as *it is possible that/to* (115-, 116- Eng./Hedges), *be+adj./adv* phrases such as *be more/less likely to*, and verbal phrases such as *may be due to*, *may have been due to*, *would appear to be*, and *would have indicated* to show the uncertainty of the writer (117-120-Eng. /Hedge Bundles). The employment of these bundles show the tendency of the writer to leave enough space for other voices and counter discussions.

---

(115-Eng. /Hedge Bundles)

**It is possible that** the results from the current research indicate a shift in the environmental values of the generation currently reaching adult-hood.

(116-Eng. /Hedge Bundles)

However, in such situations, **it might be possible to** work on the project through a series of courses.

(117-Eng. /Hedge Bundles)

As a result, sensation, comfort, and acceptability responses **may be more likely to** be overstated as protest votes.

(118-Eng. /Hedge Bundles)

Comments received from test participants during debriefing **suggests that** these seemingly anomalous satisfaction ratings **may have been due to** adaptation.

(119-Eng. /Hedge Bundles)

Developing measures of signage quality **would appear to be** central to this aim as Table 1 shows.

(120-Eng. /Hedge Bundles)

As shown in Table 5, throughout the entire experiment no participant expressed a preference for less illuminance when using the ratings, that is, response points 1 and 2 were not used in any trial, which **would have indicated** the participant **would have** liked a lower illuminance than was in the room at the time.

---

The concordance analysis of the Persian sub-corpus shows that epistemic verbal bundles such as *حاکی از آن است که* (it could be suggested/argued that), *میتوان گفت که* (it suggests that), and *میتوان نتیجه گرفت* (it could be concluded that) are the most commonly used hedge bundles in Persian articles (See Table 4.19).

---

(122-Per. /Hedge Bundles)

در تحلیل این داده **میتوان گفت که** در مجموع، کروکیهای ارائه شده توسط غیرساکنان، بازنماییهای قابل قبولی از ویژگی های شناختی محله ها به دست داده اند.

Analyzing the data, **it could be said that**, in general, the sketch mappings provided by non-inhabitants have yielded acceptable representations of cognitive characteristics of the neighborhoods.

(123-Per. /Hedge Bundles)

نتایج این پژوهش **حاکمی از آن است که** تقویت زیرساخت های گردشگری و توسعه توان اقتصادی منطقه از مهم ترین عوامل موثر در توسعه گردشگری منطقه آزاد چابهار می باشند.

The results of this research suggest that reinforcing the infrastructures of tourism and developing the economic capabilities of the region are among the most important factors which affect the development of tourism in Chabahar Free Zone.

(124-Per. /Hedge Bundles)

در واقع می توان این گونه نتیجه گرفت که توسعه ایستگاه های مترو در تهران یکی از اقدامات شهرسازانه در جهت توسعه حمل و نقل عمومی است که بیشترین بهره را نصیب مناطق جنوبی و فقیرتر تهران می کند.

In fact, **it could be concluded that** the development of subway stations in Tehran is one of the urban transport measures, which mostly benefit the southern and more deprived regions of Tehran.

Table 4.19: Frequent Hedge Bundles in the Persian Sub-corpus

Lexical bundles	Translation	Freq.
<b>3-word</b>		
میتوان گفت که	could be stated that	6
ممکن است به صورت	might be ....	5
میتوان نتیجه گرفت	could be concluded	5
می تواند به عنوان	could/would be .... as	4
در اغلب موارد	in most cases/ mainly/ mostly	3
بیشترین مقدار ممکن	the most possible	3
این امر می تواند	This could ...	2
<b>Multi-word</b>		
حاکی از آن است (که)	it suggests that	9
میتوان نتیجه گرفت که	could be concluded that	6
میتوان استنباط کرد که	could be understood that	4
به نظر می رسد که	it seems that / it appears that	3
که شاید بتوان آن (را)	which could probably ...	2
می توان این گونه بیان کرد که	it could be said that	2
میتوان چنین استدلال کرد که	it could be argued that/one could argue that	2
میتوان بیان کرد که	it might/could be said/stated that	2

A more careful look at the list presented in Table 4.19 illustrates that some of the most common hedge bundles in the Persian sub-corpus contain the modal of probability (could, would). The examples can be seen in bundles such as *می توان بیان کرد که* (*it could be stated that*), *میتوان چنین استدلال کرد* (*it could be argued that*), *میتوان گفت که* (*it could be suggested/argued that*), and *می تواند به عنوان* (*could be ... as*). This result was expected since our earlier analysis on hedging features (RQ #2) has revealed that the modal *توانستن* (could, would) alone constitutes more than 45% of the total number of hedging features in the Persian sub-corp. Thus, it can be said that the Persian writers

prefer to use verbal phrases, containing main verbs or modals, to show their subjective positions and to lower the risk of making strong claims towards the presented arguments.

---

(125-Per. /Hedge Bundles)

به تعبیری می توان گفت که در محله های کرناسیون و قلعه، درک و شناخت غیرساکنان و در محله صحرا بدر مغربی، درک و شناخت ساکنان از جزء شناختی مسیر با ویژگی های پیکره بندی فضایی محیط، رابطه معنی دارتری نشان داد.

In other words, **it could be argued that** there is a more meaningful relationship between the perception of non-residents in Karnasiyun and Ghale neighborhood about the componential cognition of the route with the characteristics of spatial configuration of the environment than that of the residents of Sahrabedar Maghrebi neighborhood.

(126-Per. /Hedge Bundles)

مطلب اخیر می تواند به عنوان نتیجه فرعی حاصل از این پژوهش لحاظ شود.

The recent issue **could be considered as** a sub-result of this research.

(127-Per. /Hedge Bundles)

بنابراین می توان بیان کرد که با احداث خیابانها، همپیوندی فضای بازار به عقب رانده و خیابان به عنوان همپیوندترین فضای شهری همانطور که بیان شد، شکل میگیرد.

Thus, **it could be argued that** with the construction of streets, the market, once considered the most compatible space, was shrunk, and as stated before, the street is formed as the most compatible urban space.

(128-Per. /Hedge Bundles)

بنابراین میتوان چنین استدلال کرد که افرادی که گفته اند مرکز تاریخی و اطراف بازار را می شناسند، فقط بازار و خیابان های اصلی اطراف آن را میشناسند و با محله های مسکونی واقع در مرکز تاریخی آشنایی ندارند.

Thus, **it could be argued** that those who have said that they know the historical center and the areas around Bazar, only know Bazar and the main streets around that and are not familiar with the residential areas located at the center of the historical center.

---

In addition, the noun phrase hedge bundle (it suggests that) حاکمی از آن است and the adjective phrase hedge bundle (is possible/ might be) ممکن است به صورت are the other frequent structures used in the Persian sub-corpus.

(129-Per. /Hedge Bundles)

همان طور که در بخش تحلیل به آن اشاره شد، نتایج **حاکمی از آن است که** فضاهاى عمومی محلی تنها به دلیل نزدیکی به محل سکونت و نبود فضایی دیگر، مورد استفاده بیشتر ساکنین قرار میگیرند.

As noted in the analysis section, **the results suggest that** local public spaces are used by most residents only because of their proximity to their habitat and lack of space.

(130-Per. /Hedge Bundles)

مکانیزم سایه اندازی **ممکن است به صورت** هوشمند و براساس دمای هوای داخل یا خارج انجام شود، ولی این امر با سادگی و در دسترس بودن از اهداف این پژوهش منطبق نیست.

The shadowing mechanism **might be** done automatically and based on the inside or outside temperature; yet, that would not meet simplicity and availability which are objectives of this research.

---

### 4.3.2 Booster Bundles

Table 4.20 shows the most common booster bundles in the English sub-corpus. The most frequent booster bundles mainly involve the reporting verbs *show* and *find*. These bundles are mainly realized by passive phrases such as *be shown in*, *be found to be/in*, *be shown in figure/table*, and *has been shown to*.

Reporting emphatic verbs also appear in the form of noun phrases such as *(the) results show that*, *we found that* and *this demonstrates the*. These reporting bundles assist the English-speaking writers to underscore the objectivity and validity of their results through referring to statistical data presented in the arguments, as it is shown in the following examples.

---

(131-Eng. /Booster Bundles)

The total emissions associated with the modules over the life of the house, assuming their replacement at 25 years, **are shown in Table 9**.

(132-Eng. /Booster Bundles)

Among these, beliefs regarding one's typical thermal state **were found to be** important, regardless of one's actual thermal state.

(133-Eng. /Booster Bundles)

The UCDIM **has been shown to** accurately provide a damage classification for the six buildings examined according to their exterior facade, thus offering a highly economic means for assessing large groups of historic buildings in this region, with the exception of those that are painted or rendered.

Table 4.20: Frequent Booster Bundles in the English Sub-corpus

3-word	Freq.	4-word	Freq.
be shown in	27	be found to be	17
be Found to	23	are shown in figure	9
shown in figure	21	are shown in table	7
figure x shows	11	shows the distribution of	5
shown in table	10	as shown in figure	5
has shown that	8	are shown in the	5
be found in	6	shows the distribution of	5
has been shown	5	as shown in table	4
results show that	5	it is evident that	4
shows the distribution	5	as shown in figure	4
believed that the	5	has been shown to	4
is evident that	5	shows the correlations between	4
this demonstrates the	4	found to be statistically significant	4
known as the	4	can be found in	4
did not find	4	the results show that	4
we found that	4	has been demonstrated that	4
can be found	4	those who believed that	4
proved to be	3	those who found that	4
also indicated that	3	work has shown that	3
be also found	3	would always be	3
to a certian extent	3	there is certainly more	2
who believed that	3	this study has shown that	2
will always be	3	is clear from this research that	2
would always be	3	it is clear that	2



(134-Eng. /Booster Bundles)

**The results show that** while there is no correlation between cost and improved thermal performance for the 4–5 and 5–6 star bands, a positive correlation exists for the 6–7 and 7–8 star bands.

(135-Eng. /Booster Bundles)

When we separated the sample into users or nonusers in the first order model (Table 4), **we found that** users' related behaviors were not significant predictors of park attitude, but they were significant for nonusers.

(136-Eng. /Booster Bundles)

**This demonstrates the** potential truncation error associated with a pure process analysis, where the items covered by I–O data in this case are typically not included.

---

Moreover, anticipatory it bundles such as *it is clear that* and *it is evident that*, prepositional phrases such as *to a certain extent*, and *as shown in figure* are among other booster bundles which are commonly appear in the English sub-corpus.

---

(137-Eng. /Booster Bundles)

Although effective, **it is evident that** improvements can be made to the RGA.

(138-Eng. /Booster Bundles)

From these findings, **it is clear that** measurements of the copper speciation are integral to understanding the origin of the color of glass.

(139-Eng. /Booster Bundles)

The study was hampered, however, **to a certain extent** by the residents' unwillingness to be critical about their homes.

(140-Eng. /Booster Bundles)

**As shown in Figure 3**, process data account for only 26% of the initial embodied energy of the house.

---

The investigation of booster bundles in the Persian sub-corpus also offers valuable information regarding the employment of these features in the discussions of Persian architecture articles. Results demonstrated in Table 4.21 shows that verbal booster bundles such as *نشان داده شده در شکل* (*it shows that*), *نشان داده شده* (*is shown*), *نشان داده شده در شکل* (*shown in figure*) are frequently used in the academic discussions of Persian writers in the field of architecture. This finding is in line with the findings of the second research question which show that reporting emphatic verbs such as *show* and *demonstrate* are the most frequently used boosting elements in the Persian sub-corpus.

Table 4.21: Frequent Booster Bundles in the Persian Sub-corpus

Lexical bundles	Translation	Freq.
<b>3-word</b>		
نشان میدهد که	it shows that	61
نشان داده شده	shown	18
را نشان میدهد	shows sth	17
مشاهده میشود که	(be) shown/demonstrated that	6
پژوهش نشان میدهد	... of the research shows	4
تحقیق نشان می دهد	... of the research shows	4
واضح است که	it is clear that	4
مشخص است که	it is clear/is shown that	3
البته واضح است	Ofcourse, it is clear that	2
<b>Multi-word</b>		
نشان داده شده است	it has been shown	11
نشان داده شده در شکل	shown in figure	4
همان طور که مشاهده میشود	as it is shown	4
نشان داده شده در	shown in	4
این پژوهش نشان میدهد	this research shows that	4
این تحقیق نشان میدهد	this research shows that	4
که در جداول بالا مشخص	shown in the figure above	3
نمودار نشان داده شده	(the) figure shows	3
همان طور که ملاحظه میشود	as it is shown	3

As it is shown in the examples below (141 – 143- Per./Booster), Persian writers use booster bundles such as همان طور (shown), نشان داده شده (it shows that), and که مشاهده میشود (as it is shown) to show the objectivity and validity of their findings through referring to tables and figures.

---

(141-Per. /Booster Bundles)

با این حال مطالعات این پژوهش نشان میدهد که این ابزارها و روشها هنوز در پژوهشها مورد استفاده نیستند.

Yet, the results of this study **show that** such instruments and methods have not been used in the other research.

(142-Per. /Booster Bundles)

در این نمودارها پاسخها در مقیاس لیکرت در محور افقی و فراوانی آنها در محور عمودی نشان داده شده است.

In these diagrams, the answers, in Likert scale, **are shown** in the horizontal axis and their frequencies **are shown in** the vertical axis.

(143-Per. /Booster Bundles)

همان طور که در نمودار (2) مشاهده میشود، بیشترین فراوانی مساحت خانه ها بین 100 تا 300 مترمربع و میانگین آن ها نیز 293 مترمربع است.

**As it is shown in** diagram (2), the most frequent floor area of the houses is between 100 to 300 square meters and their average amount is 293 square meters.

---

Moreover, emphatic adjective bundles such as مشخص (It is clear that) and واضح است که (it is obvious that) are found to be used frequently in the Persian texts.

---

(144-Per. /Booster Bundles)

البته واضح است که جریان هایی که به صورت زاویه دار بر بنا می وزند، باید به دو مؤلفه عمود بر هم تجزیه شوند؛ به گونه ای که یک مؤلفه از آن ها بر دیوار عمود و دیگری بر وجه مجاور بنا عمود باشد.

**Of course, it is obvious that** streams that are angled on the building **must** be divided into two perpendicular components, such that one component is perpendicular to the wall and the other to the side of the building.

(144-Per. /Booster Bundles)

مشخص است که عدم توانایی تأمین آب دریاچه بعداً باعث تغییر کاربری دریاچه موجود در پارک شده است.

**It is clear that** the inability to supply the water of the pond has resulted in later changes in its use in the park.

---

### 4.3.3 Attitude Markers

As it is shown in Table 4.22, the most frequently used attitude bundles in the English sub-corpus contain attitudinal adjectives such as *important*, *expected*, *appropriate*, and *interesting* as in *is an important*, *should be an important*, and *be expected* (145-146 - Eng./Attitude Bundles).

---

(145-Eng./Attitude Bundles)

The absence of a benefit-to-cost analysis **is an important** impediment to the justification of future investment in the care and maintenance of treed public parks.

(146-Eng./Attitude Bundles)

The protection of natural habitats and characteristic landscape features, including agricultural land, **should be an important** element of any development strategy.

Table 4.22: Frequent Attitude Bundles in the English Sub-corpus

3-word	Freq.	Multi-word	Freq.
is an important	9	should be an important	4
be expected to	8	this is particularly important (in)	4
be an important	5	interesting to see that	4
important to the	4	an important role in	3
expected to be	4	an important component of	3
an important issue	4	could be expected to	3
settings of preferred	4	might be expected to	3
is particularly important	4	be more important to	3
it is interesting	4	it is not surprising (that)	3
even more important	3	that are important to	3
as an important	3	expected to lead to	2
could be expected	3	be the most preferred	2
the most appropriate	3	will become increasingly important	2

---

(147-Eng./Attitude Bundles)

The forgiving nature of the users means that removing the enforcement of natural ventilation would not **be expected to** lead to a significant increase in energy consumption, and could help to maintain the positive relationship that presently exists between the building and the users by removing some complexity from the building automation and therefore reducing the frequency and seriousness of system failures as the building ages.

---

Based on the results, the attitude bundles found in the English sub-corpus can be divided into evaluation bundles and affective bundles. For instance, the important bundles which are mainly realized by be+ noun/adj structure in phrases such as *is an important*, *is particularly important*, and *an important role in* are used to emphasize the subjective evaluation of the propositions. The expected bundles which are realized by passive phrases such as *could be expected to* and *might be expected to* (148-149-Eng./Attitude bundles) are also used to show the personal evaluations of the English-speaking writers towards what has been discussed or found in the research.

---

(148-Eng./Attitude Bundles)

CBO leaders **could be expected to** encourage their members to visit urban nature parks if they themselves are persuaded of the benefits.

(149-Eng./Attitude Bundles)

Since our sample were not in work, they **might be expected to** have had greater sickness levels than the general population of the same age living in these locations.

---

Moreover, the English-speaking writers are found to use anticipatory it bundles such as *it is interesting* and *it is not surprising* to show their personal feeling towards the propositions presented in the discussion sections of their articles (150-151-Eng./Attitude Bundles).

---

(150-Eng./Attitude Bundles)

**It is interesting to see that** this relationship changed with time. In the case of building B, the correlation between overall satisfaction with the building and the occupants' perception of brightness lost its significance in 2009.

---

(151-Eng./Attitude Bundles)

**It is not surprising that** they would be attracted to the integration of plants with architecture. This result was confounded with the age and education of respondents, however, and may be due instead to these differences.

---

As it was mentioned earlier in RQ#2 and here in Table 4.23, the Persian writers mainly use the attitude markers مطلوب, مناسب (important) and با اهمیت, پراهمیت, مهم (appropriate) to emphasize on the importance and appropriacy of the arguments. The attitude bundles which show the importance of the writers' claims are usually realized by noun phrases such as نقش یکی از مهمترین علل (*one of the most important reasons*), تفاوت چشمگیری حاصل می شود (makes a notable difference) (an important role in ...) and مناسبی برخوردار است (is considered important ...) and مناسبی برخوردار نیست (is not appropriate) are found to be used frequently by the Persian writers to overtly show their ideas regarding the appropriacy of the presented expressions (152-154-Per./Attitude Bundles). Moreover, attitude bundles such as مناسبی برخوردار است (is considered important ...) and مناسبی برخوردار نیست (is not appropriate) are found to be used frequently by the Persian writers to overtly show their ideas regarding the appropriacy of the presented expressions (155-156- Per./Attitude Bundles).

---

(152-Per./Attitude Bundles)

**یکی از مهم ترین علل** عدم نوسازی بافتهای فرسوده، فقدان طرحهایی بوده که بتواند این بستر قانونی و اجرایی لازم را فراهم سازد.

**One of the most important reasons** for lack of renewing projects of the derelict tissues is not having the plans that could provide necessary legal and administrative frameworks.

Table 4.23: Frequent Attitude Bundles in the Persian Sub-corpus

Lexical bundles	Translation	Freq.
<b>3-word</b>		
مناسبی برخوردار است	is appropriate	4
نکته جالب توجه در	the considerable point in	4
نقش مهمی در	important role in	4
میتوان انتظار داشت	could be expected to	3
بخش قابل توجهی از	a considerable part of	3
عامل مهمی در	important factor in	3
مناسبی برخوردار نیست	... is not appropriate	2
<b>Multi-word</b>		
از اهمیت بسزایی برخوردار میباشد	is of great importance	4
یکی از مهمترین علل	one of the most important reasons	3
تفاوت چشمگیری حاصل میشود	makes a dramatic difference	3
کمتر از حد مورد انتظار	less than expected	2
به عنوان مهمترین عامل	as the most important factor	2
حائز اهمیت دیده شده است	is highly important	2
با اهمیت تشخیص داده شده	is found to be important	2

## (153-Per./Attitude Bundles)

نظریات ساکنان نسبت به محله و تصویری که از آن در ذهن خود دارند، نقش مهمی در میزان علاقه آنها نسبت به محله دارد..

The opinions of the residents towards the neighborhood and its image in their minds have an important role in the amount of the residents' interest in the neighborhood.

## (154-Per./Attitude Bundles)

با ثابت فرض کردن نسبت میان طول و عرض حیاط، چنانچه نسبت ارتفاع به طول از بازه  $1/1-1$  به  $1/1-1/2$  تغییر یابد، در میزان سایه دریافتی، تفاوت چشمگیری حاصل می شود.

Assuming that the proportion of the length and width of the yard is fixed, if the proportion of the width of the yard to the length changes from the range of  $1/1-1$  to  $1/1-1/2$ , there would be a notable difference in the amount of cast shadow.

## (155-Per./Attitude Bundles)

در مجموع، میتوان نتیجه گرفت که این پرسشنامه از پایایی و روایی مناسبی برخوردار است.

In sum, it could be concluded that the questionnaire has acceptable reliability and validity.

(156-Per./Attitude Bundles)

با توجه به مقایسه آماره با 1/96-، فرضیه صفر رد شده، پس ساختمان مدرسه از امنیت مناسبی برخوردار نیست.

Considering the comparison of the statistics with -1.96, the null hypothesis is rejected, thus, the building of the school **does not** enjoy **appropriate** levels of security.

---

Besides the frequent important bundles, the Persian writers use other attitude bundles such as میتوان انتظار داشت (could be expected), and نکته جالب توجه (a remarkable point)

(157-158-Per. /Attitude Bundles) to show their affective values for the presented propositions.

---

(157-Per./Attitude Bundles)

به این ترتیب، ضمن رفع هرگونه موانع احتمالی ناشی از برنامه ریزی ناهمگون، میتوان انتظار داشت که طرح در فرایند اجرا نیز متوقف نشود و اقبال عمومی ساکنین به شتاب اجرای طرح معاصر سازی کمک کند  
In this way, while removing any possible obstacles caused by disorganized planning, **it could be expected that** the plan will not be stopped in the implementation process, and the general interest of residents will accelerate the implementation of the modernization plan.

(158-Per./Attitude Bundles)

نکته جالب توجه در مورد ساختمان بازار، قابلیت حیرت انگیز آن در بهبود شرایط اقلیمی در تابستان و زمستان، روز و شب است.

An interesting point about the construction of the market is its amazing ability to regulate the temperature in summer and winter, day and night.

---

#### 4.3.4 Self-mention Bundles

The analysis of the English sub-corpus demonstrated that self-mention bundles are mainly realized by prepositional phrases such as *in our sample, from our analysis of (the), and in our study* and noun phrases such as *our analysis of the, our results suggests that, we found that, we were unable to, and we used the results of* to assist the writers to emphasize on their researcher and authorial identity in their discussions (See Table 4.24).



Table 4.24: Frequent Self-mention Bundles in the English Sub-corpus

3-word	Freq.	Multi-word	Freq.
in our sample	10	from our analysis of	3
We did not	7	our analysis of the	3
our analysis of	5	We have made some	3
our results suggest	4	our results suggest that	3
We found that	4	nonusers in our sample	3
in our study	4	We were unable to	3
from our analysis	3	from our analysis of (the)	2
our method was	3	perceived in our method	2
our approach met	3	only as we stated	2
as we have	3	We used the results of	2

(159-Eng./Self-mention Bundles)

However, only about a third of the houses **in our sample** were fronted by street trees.

(160- Eng./ Self-mention Bundles)

Therefore, the lessons that we can draw **from our analysis of** past and prospective urban growth in Cairns can be placed in an international context to provide useful planning guidance to other regions experiencing similar tourism-driven development pressures.

(161- Eng./ Self-mention Bundles)

**Our analysis of the** semi-variograms suggested the presence of spatial dependence in the price equation up to about 2000 ft (609.6m) (Fig. 2).

(162- Eng./ Self-mention Bundles)

**Our results suggest that** Port-land planners and park managers could benefit by differentially interpreting what users' and nonusers' behaviors signal with respect to their attitudes about parks.

(163- Eng./ Self-mention Bundles)

**We found that** the number of street trees fronting the property and crown area within 100 ft (30.5m) of a house positively influence sales price.

(164-Per./ Self-mention Bundles)

Moreover, **we were unable to** account for complex buildings' geometry such as peaked roofs or setbacks at upper levels.

(165- Eng./ Self-mention Bundles)

In our project, **we used the results of** research conducted by Millward and Sabir (2010) to adjust our final STRATUM estimates downward using a multiplicative correction of 0.9.

---

In the Persian sub-corpus, however, the limited number of self-mention features (33 tokens) does not provide enough sources for the identification of self-mention bundles frequently used by Persian academic writers. Therefore, the researchers avoid making any claims regarding the Persian self-mention bundles in this section.

#### **4.3.5 Engagement Bundles**

The analysis of the English sub-corpus illustrates that engagement bundles are largely realized by directives including modals of obligation, and predicative adjectives. According to the results shown in Table 4.25, the English-speaking writers use anticipatory it phrases such as *it should be noted (that)*, *it should be noted however (that)*, *it is essential to* and *it must be noted (that)* assist the English-speaking writers to directly address the readers and to direct their attention to specific procedures or points which are, in this way, indirectly focused by the author (166-171-Eng./ Engagement Markers).

Table 4.25: Frequent Engagement Bundles in the English Sub-corpus

	Lexical bundles	Frequency
<b>3-word</b>	should be noted	9
	should be considered	7
<b>Multi-word</b>	should also be considered	2
	should also be included	2
	it should be noted	6
	it is important to note (that)	5
	need to be aware of (the)	2
	it must be noted that	2
	it should be noted however (that)	2
	will have to be	2
	it is essential to	1

---

(166-Eng./Engagement Bundles)

A few limitations of this study **should be noted**.

(167-Eng./Engagement Bundles)

However, **it should be noted that** the available pollution record is recent (since 2002) and portrays only recent trends in the atmospheric loading of pollution.

(168-Eng./Engagement Bundles)

**It should be noted however that** all eight credits are achievable without adhering to any emission-reducing strategies through use of FSC-certified, reclaimed, or recycled materials.

(169-Eng./Engagement Bundles)

The results from this research **should be considered** a visual assessment of green roofs as seen from a moderate distance, amidst a context of medium density architecture.

(170-Eng./Engagement Bundles)

**It is important to note that** regular cleaning of filters is essential to ensure performance thus should be included in them awareness and education section.

(171-Eng./Engagement Bundles)

**It must be noted that** the low sample sizes make it difficult to draw generalizable conclusions.

---

The analysis of the most common Persian engagement bundles (Table 4.26) illustrates that Persian engagement bundles are realized by adjective phrases such as لازم است (که) (it is necessary (that)), ضروری است که (it is essential that), لازم و ضروری است (is absolutely essential) (172-174-Per. Engagement Bundles) to directly grab the attention of their readers towards the importance and necessity of the ideas proposed by the writers.

Table 4.26: Frequent Engagement Bundles in the Persian Sub-corpus

Lexical Bundles	Translations	Freq.
<b>3-word</b>		
لازم است با	is necessary ...	3
لازم است تا	is necessary ...	2
ضروری است که	it is essential that	1
لازم است که	it is necessary that	1
<b>Multi-word</b>		
لازم به ذکر است	it should be mentioned	5
لازم به ذکر است که	it should be mentioned that	5
باید توجه داشت که	it should be considered	4
لازم و ضروری است	is absolutely essential	2
بسیار حائز اهمیت است	is very important	2
باید توجه کرد که	it must be considered that	1
باید مد نظر قرار گیرد	must be taken into consideration	1
توجه به این نکته بسیار دارد که	it is very important to take .... into consideration	1
ذکر این نکته لازم است که	it must be mentioned that	1

---

(172-Per./Engagement Bundles)

قبل از ارائه پیشنهاداتی جهت ارتقای منظر امن شهری در این محله، لازم است تحلیل دقیقتری از نتایج به دست آمده انجام شود.

Before offering suggestions for the improvement of a secure urban perspective in this neighborhood, **it is necessary to** do a more careful analysis of the results. (173-Eng./Engagement Bundles)

(173-Eng./Engagement Markers)

از این رو **ضروری است که** ابعاد مختلف در طراحی این فضاها در نظر گرفته شود تا فضاها در مقیاسهای مختلف بتوانند در کنار یکدیگر به ایفای نقش خود بپردازند.

Therefore, in designing these spaces it is necessary to consider different dimensions so that different scales spaces can play their parts in harmony.

(174-Eng./Engagement Markers)

شبکه ای که به صورت هدفمند میان کاربری های با ارزش ارتباط برقرار کند، میتواند اثرات مؤثری بر روی پیاده محوری داشته باشد. بدین منظور توجه به کاربری های سازگار با پیاده محوری امری **لازم و ضروری است**.

A network that establishes purposeful connections among varieties of applications can have significant impacts on the walkability. To this end, **it is absolutely necessary** to pay attention to the applications compatible with walkability.

---

Verbal phrases containing the modal of obligation (must/should) such as باید (it should/must be considered that), باید توجه کرد که (it should/must be taken into consideration), and باید مد نظر قرار گیرد (it should/must be taken into consideration) are used to engage the readers in some real world issues which are considered crucial for the writers. This way the Persian writer involve his or her readers indirectly to take part in some cognitive acts such as 'considering some points' or 'paying more attention' to a specific issue presented in the text (175-177- Per. Engagement Bundles).

---

(175-Eng./ Engagement Bundles)

در انتها **باید توجه داشت که** ایستگاه های مترو علیرغم تأثیرات مثبت بالقوه روی محیط پذیرنده خود می توانند منشأ معضلات بزرگتری در فضاها و پیرامون ایستگاه ها نیز باشند.

Finally, **it should be noted that** in spite of the potential positive impacts on sub-way stations on their perceived environments, they can be the source of comparatively more serious issues in their surrounding environments.

(176-Eng./ Engagement Bundles)

از سویی **باید توجه کرد که** برخی فعالیت ها نیز در مقاطع مشخص و با توالی مناسب زمانی روی میدهند و پیرو عادت وار ه ها نیستند

On the one hand, **it should be noted that** some activities occur at specific time intervals with appropriate temporal sequences and do not follow the habitus.

(177-Eng./ Engagement Bundles)

لذا نتیجه مهم این پژوهش این است که انتخاب نوع ساختمان در زمان طراحی **باید مد نظر قرار گیرد.**

Thus, the main result of this research is that the type of the building **should be taken into account** in the design period.

---

#### 4.3.6 Summary of Research Question #3

The results of RQ#3 are summarized in Tables 4.27 and 4.28 which show the most common interactional bundles used in the English sub-corpus and in the Persian sub-corpus, respectively.

Table 4.27: Frequent Interactional Bundles in the English Sub-corpus

<b>Hedge B.</b>	Appears to be, (be) likely to be, (may) be more likely to, it may (not) be may have been (due to)	as suggested by this suggest(s) that it is possible that/to, as suggested by be less likely
<b>Boosters B.</b>	be shown in be found to (be) shown in figure figure x shows (be) shown in table/figure	has (been) shown that shows the distribution (of) (it) is evident that this demonstrates that found to be statistically significant
<b>Attitude B.</b>	is an important be expected to be should be an important this is particularly important (in) an important issue	interesting to see that expected to be could be expected to it is interesting that might/could be expected to
<b>Self-mention B.</b>	in our sample (from) our analysis of (the) Our results suggest (that)	In our study we found that we used the results of
<b>Engagement B.</b>	Should be considered Should be included Should also be considered Should also be included	It should be noted It must be noted It is important to note that It is essential to

Table 4.28: Frequent Interactional Bundles in the Persian Sub-corpus

<b>Hedge B.</b>	could be stated that	میتوان گفت که
	it suggests that	حاکی از آن است که
	could be concluded that	میتوان نتیجه گرفت که
	it seems/appears that	به نظر میرسد که
	in most cases/mainly/mostly	در اغلب موارد
<b>Booster B.</b>	it has been shown that	نشان داده شده است
	as it is shown	همان طور که ملاحظه میشود
	it shows that	نشان میدهد که
	(be) shown/demonstrated that	مشاهده میشود که
	this research shows that	این پژوهش نشان می دهد که
<b>Attitude B.</b>	is highly important	از اهمیت بسزایی برخوردار است
	is appropriate	مناسبی برخوردار است
	the considerable point in	نکته جالب توجه در
	is found to be important	حائز اهمیت دیده شده است
	could be expected (that)	می توان انتظار داشت (که)
<b>Engagement B.</b>	it should be mentioned (that)	لازم به ذکر است (که)
	is necessary (to)	لازم است (تا)
	it is essential that	ضروری است که
	it must/should be considered that	باید توجه کرد که
	it must/should be considered that	باید توجه داشت که
	must/should be taken into	باید مد نظر قرار گیرد
	consideration	

#### 4.4 Summary

This chapter included answers to the three research questions proposed in the study.

The findings related to the first research question showed that there was a significant difference between the English and Persian architecture articles in the employment of interactional metadiscourse markers. The answers to the second research question



illustrated the similarities and differences between the two sub-corpora in the light of lexico-grammatical and functional analyses. The findings of the last research question gave the list of the most frequently used interactional bundles in the English and Persian architecture articles.

## Chapter 5

### DISCUSSION AND CONCLUSION

The introduction section of this chapter includes a brief overview of the study, the problems in the field, the research questions and methodology of the current study. This section is followed by presenting the major findings and discussions on the results. Later, the implications of the study and suggestions for further research are presented. The factors which limit and delimit the scope of this research are addressed in the final section of the chapter.

#### 5.1 Overview of the Study

Learning a discipline goes beyond knowing the technical vocabulary items and grammatical structures and involves learning the norms and conventions, or better to say, the disciplinary culture. Social views towards academic discourses argue that academic disciplines differ in their views towards the world, their problem-solving methodologies, and their persuasion methods (Hyland, 2009; Swales, 1990). In other words, there is a disciplinary culture with some solid principles which are accepted and expected by the community members of that discipline. Therefore, within the last twenty years, different studies have been conducted to explore the rhetorical conventions and norms of different disciplinary fields (Abdollahzadeh, 2011; Bahrami, 2012; Başturkmen, 2009, 2012; Lim, 2013; Salar & Ghonsooly, 2016). Although the findings of such studies have shed light on the rhetorical patterns preferred by community members of some disciplinary fields such as applied linguistics (Abdollahzadeh, 2011; Dujsik, 2013), business (Hyland & Tse, 2004;

Pooresfahani, 2012), social sciences (Allami, 2013), chemistry (Li, 2011; Stoller & Robinson, 2013), and engineering fields (Estaji & Vafaeimehr, 2015; Kanoksilapatham, 2015), there are still many overlooked research areas whose rhetorical patterns and conventions need to be explored and studied in detail. Thus, this study attempted to fill this research gap in genre analysis studies in academic contexts and aimed at exploring the rhetorical characteristics and disciplinary conventions of one of these fields, i.e. architecture and its sub-fields such as historical architecture, landscape architecture, and architectural design and urban planning.

Another problem which affected the scope of this study has been the unawareness of the majority of non-native English-speaking university students and academics of the differences between the preferred rhetorical patterns, sense of audience, and text organizational methods between different languages. In fact, the knowledge construction preferences and expectations of the academic community members can be directly influenced by their first language background. As Hyland (2006) argues, people from different linguistic backgrounds may differ in their linguistic intuitions, reader and writer expectations, discourse organizing preferences, and understanding the social values and use of different text types. As a result, this research not only investigated the rhetorical features of academic texts in the discipline of architecture, but also intended to shed light on the differences and similarities between the rhetorical patterns used by native English-speaking writers and a group of non-native English-speaking writers, i.e. Persian writers, in their academic argumentations in this field.

To meet the above-mentioned objectives, this study attempted to investigate the employment of metadiscourse markers, which are known as one of the main discourse

analysis devices (Flowerdew, 2012), by English-speaking and Persian academic writers, in architecture articles. The investigation drew on Hyland's (2005a) interpersonal model of metadiscourse markers, with a focus on interactional metadiscourse markers which reinforce the interaction between the reader and the writer. Interactional metadiscourse markers are the linguistic features which involve the reader in the text and inform him or her about the writer's personal views towards the propositions. Thus, in the effort to explore the differences and similarities between the rhetorical features of English and Persian research papers published in the field of architecture, the following research questions were addressed:

1. Is there any statistically significant difference between English-speaking and Persian academic writers in their use of interactional metadiscourse markers (IMMs) in the post-method sections of architecture articles?
2. How do English and Persian architecture articles differ in the use of interactional metadiscourse markers in the post-method sections?
3. What are the most frequent interactional lexical bundles identified in the post-method sections of English and Persian architecture articles?

To answer the above-mentioned questions, a corpus consisting of the post-method sections of 100 architecture articles (50 English articles written by English-speaking writers and 50 Persian articles written by Persian articles) was compiled. The articles were selected from different sub-fields of architecture including historical architecture, landscape architecture, and architectural design and urban planning. It is worth noting that the compiled corpus met Hunston's (2008) corpus compilation criteria, namely representativeness, balance, and size. Moreover, the two sub-corpora of English and Persian articles meet Ädel's (2006) comparability criteria. The sub-corpora were

comparable in terms of (1) quality of the research papers (all papers are selected from the current leading journals), (2) research type (all papers follow IMRD -Introduction, Method, Result, Discussion- structure), and (3) chronology (all papers are published between 2010 and 2015).

The study focused on the post-method sections of the articles. The reason for this choice is derived from the fact that articles did not always follow IMRD pattern. Although all the selected research papers in this study followed IMRD pattern, it was observed that some merged the discussion and result sections, some coalesced discussion and conclusion sections, and others included some additional sections such as implications, and applications. Compiling the corpus from the post-method sections of research papers offered a more representative and comprehensive sample of the persuasive language used by the academic writers in the field of architecture. Moreover, the investigation of interactional metadiscourse markers employed in the post-method sections of the research papers provided the opportunity to explore the rhetorical features used by the English-speaking and Persian writers and to study the way they interact with their potential readers and express their personal feelings about their findings and the related academic arguments proposed in the field of architecture.

Finally, the compiled corpus consisting of the post-method sections of 100 English and Persian architecture articles was analyzed through the employment of WordSmith concordance program and a series of quantitative and qualitative techniques presented in the third chapter. The major findings resulted from analyzing the body of data are presented in the following section.

## 5.2 Major Findings

The analysis of the post-method sections of English and Persian architecture articles substantiated great differences in the employment of interactional metadiscourse markers (IMMs). Overall, the total frequency of IMMs between the English-speaking and Persian writers was significantly different and English-speaking writers were found to use more IMMs in comparison to their Persian counterparts (3412 and 2135, respectively). In fact, considerable differences were found in the frequency of all interactional metadiscourse sub-categories, i.e. hedges, boosters, attitude markers, self-mentions, and engagement markers, used by the two groups of writers in the architecture articles. The two languages were also different in the frequency of interactional bundles. In fact, the frequency of interactional bundles in the English sub-corpus was considerably higher than that of the Persian sub-corpus in all the sub-categories and in total.

Hedges were found to be the most frequently used IMMs in the whole corpus, constituting around 46.2% of the total number of metadiscursive features. More specifically, hedges were the most significantly used IMM in each of the English and Persian sub-corpora (1792 and 773, respectively). Yet, what drew the attention was the fact that the English-speaking writers used hedges two-and-a-half times more than the Persian writers. Despite the statistical difference between the frequencies of hedges used in the two languages, there were similarities in the functional and grammatical analyses between the two groups of writers in the employment of these features. According to the results, hedges assist both groups of writers to report, interpret, and summarize the results of their studies. Moreover, these metadiscursive features were found to assist them to highlight the implications and suggestions for further studies.

In addition, according to the grammatical and lexical analyses of the sub-corpora, the modal auxiliary verbs were the most frequently used epistemic categories in English and Persian architecture articles. The epistemic modals of *may*, *would*, and *could* together constituted around 30% of the total number of hedging features in the English articles. In the Persian articles, توانستن (could, would) was the most frequently used epistemic modal, constituting about 45% of the total number of Persian hedges. It was also found that the English-speaking writers commonly used hedge bundles such as *appear(s) to be*, *be more/less likely to*, *it might be possible (to)*, *it may be*, *suggest(s) that the*, *it is possible to/that*, *this suggests that*. The Persian writers used hedge bundles such as (که) حاکمی از آن است (it suggests that), (که) میتوان گفت (could be stated that), (که) میتوان نتیجه گرفت (could be concluded that), (که) به نظر می رسد (it seems that). According to the results, the hedge bundles assist both groups of writers to show their uncertainties towards the propositions and try to open a rhetorical space for other viewpoints.

Boosters were the second most frequently used IMMs in the whole sub-corpus. Similar to hedges, the English-speaking writers used considerably more boosters than the Persian writers did. Boosters constituted approximately one fourth of the total number of IMMs. The functional investigations revealed that the English-speaking writers used these features to emphasize the validity of their results through referring to tables and figures, in order to underscore the significance of their findings and suggestions for further research. Persian writers, on the other hand, used boosters to stress the objectivity of their findings through emphasizing the background knowledge of their readers. They also used boosters to explain and report the results by referring to the presented tables and figures.

Furthermore, the findings revealed similarities between the two languages in the grammatical and lexical levels. Accordingly, verbal boosters were the most significantly used grammatical categories in both English and Persian articles (576 and 405, respectively). The verbal boosters *show*, *find*, and *demonstrate* constituted more than 60% of the total number of English boosters. The three verbal boosters نشان دادن (*show*), مشخص کردن/ بودن (*illustrate/ illustrated*), and مشاهده شدن/ نمودن (*demonstrate/ demonstrated*) were the most common emphatics in the Persian articles, which constituted around 60% of the total number of Persian boosters. The results also revealed that the English-speaking writers frequently used booster bundles such as *be shown in*, *be found to be/in*, *be shown in figure/table*, and *has been shown to*, (*the results show that*, and *we found that*. The Persian writers used booster bundles such as نشان میدهد که (*it shows that*), نشان داده شده (*is shown*), نشان داده شده در شکل (*shown in figure*), نشان داده شده است (... *is shown*). These booster bundles were found to help the writers of both groups to emphasize the validity of their findings through referring to statistics and figures in the articles.

Attitude markers constituted nearly one fifth of the total number of IMMs and are the third most frequently used metadiscursive features in the whole corpus. According to the findings, the Persian writers made use of more attitude markers in their architecture articles than the English-speaking writers do (616 and 402, respectively). The investigation of the rhetorical functions of attitudinals illustrated that English-speaking writers used these markers to state their personal judgements towards the claims and to highlight the interestingness and significance of their findings. However, less functional diversity was found in the Persian articles. According to the results, Persian writers mainly used attitude markers to highlight the importance and appropriacy of



their findings and to stress the effectiveness of their results. Grammatical and lexical investigations demonstrated that both English-speaking and Persian writers used attitudinal adjectives more frequently than attitudinal verbs and adverbs. One of the interesting findings is the considerable difference between the frequency of attitudinal adjectives with the frequency of verbs and adverbs in the Persian sub-corpus (566 and 57, respectively). As the lexical analysis revealed the adjectives of appropriacy and importance, such as مناسب (appropriate), مطلوب (preferred, appropriate), and مهم (important) and their synonyms constituted more than 67% of the total number of attitudinal adjectives in the Persian sub-corpus. In the English sub-corpus, *is an important*, *should be an important*, *interesting to see that*, *be expected*, and *expected to see* were among the most frequently used attitude bundles. The most frequent attitude bundles in the Persian sub-corpus were مناسبی برخوردار است (... is appropriate), نکته جالب توجه در (a considerable point in), نقش مهمی در (important role in), میتوان انتظار داشت (could be expected), and از اهمیت بسزایی برخوردار میباشد (is of great importance).

The findings of this study also revealed that the most significant difference between the English-speaking and Persian writers is in their employment of self-mentions. According to the results, the number of self-mentions in the English sub-corpus is nine and a half times more than the Persian sub-corpus. In fact, the Persian sub-corpus only contained 33 self-mentions, while this amount in the English sub-corpus is 313. The Persian self-mentions were used to explain the steps taken in data analysis and to stress the writer's authorial self in the discussions. In the English sub-corpus, however, self-mentions were used for a variety of purposes such as describing the steps taken in the study, highlighting the contributions of the research in the field, discussing the

limitations and delimitations of the study, and expressing the writers' stance towards the proposed claims.

On the surface level, it was found that both English-speaking and Persian writers of architecture articles avoid using the first-person singular pronoun *I* and instead prefer to use the first-person plural pronouns *we*, *us*, and *our*. The analysis of the nouns used as self-mentions also indicated that English-speaking writers preferred the term *author* to *writer* in their academic discussions. The Persian writers also preferred to use the term نگارنده(گان) (the equivalence of *author(s)*). They also made use of the terms محقق(ان) and پژوهشگر(ان) (the equivalences of researcher(s)) to emphasize the researcher identity of the writers in their academic discussions. Moreover, the investigation of self-mention bundles used in the English sub-corpus showed that expressions such as *in our sample*, *from our analysis of (the)*, *in our study*, *our analysis of the*, *our results suggests that*, *we found that*, *we were unable to*, and *we used the results of* were frequently used by the English-speaking writers. No self-mention bundles were found in the Persian sub-corpus due to the fact that the number of self-mention markers found in the Persian articles was too limited to enable the researchers, to find the commonly used bundles in this category.

Last but not the least, according to the findings of this study, engagement markers were the least used interactional metadiscourse category in the whole corpus and in the English sub-corpus. The Persian writers used more engagement markers than the English-speaking writers and there was a significant difference between the English-speaking and Persian writers in the employment of engagement markers (129 and 164 tokens, respectively). The functional analysis illustrated that the English-speaking

writers used engagement markers to highlight the key points in data analysis, to state the implications of the study or recommendations for further research and to attract the readers' attention towards the delimitations of the research. Similarly, the Persian writers made use of engagement markers to emphasize the importance of data analysis tools or procedural steps used in their study, to discuss the implications of findings and to make suggestions for further research.

Directives were the most frequently used engagement features in both English and Persian sub-corpora. The comparison between the frequency of these features showed that the Persian writers used slightly more modals of obligation and predicative adjectives in comparison to their English counterparts. The results also revealed that the English-speaking writers frequently used engagement bundles such as *it should be noted (that)*, *it should be noted however (that)*, *it is essential to*, *it is important to note (that)* and *it must be noted (that)* to involve their readers in the discussions. The most frequently used engagement bundles in the Persian sub-corpus were لازم است که (it is necessary (that)), ضروری است که (it is essential that), لازم و ضروری است (is absolutely essential), باید توجه داشت که (it should/must be considered that), باید توجه کرد که (it should/must be considered that), and باید مد نظر قرار گیرد (it should/must be taken into consideration).

### **5.3 Discussion**

The findings revealed that overall the English-speaking writers used more IMMs than the Persian writers do. This finding is in agreement with other English-Persian comparative studies in the literature (Abdollahzadeh, 2011; Faghigh & Rahimipour, 2009; Farzannia & Farnia, 2016; Salar & Ghonsoly, 2016) which have reported higher frequency of IMMs in the English texts in comparison to the Persian ones. Major

differences between the Persian and English-speaking writers in the employment of IMMs might stem from the writer-responsible or reader-responsible natures of languages. Hinds (1980) argued that languages are writer-responsible or reader-responsible. In writer-responsible languages, such as English, it is the writer who needs to ensure the clarity of the texts, whereas in reader-responsible languages, such as Japanese, the reader is responsible to construct the meaning and find out the intended meaning of the writer. Thus, it is plausible to say that English-speaking writers, who follow a writer-responsible rhetoric, tend to use more metadiscourse markers to guide their readers throughout the text and to lead them through the authors' interpretations. However, in Persian, which is a reader-responsible language (Jalilifar, 2011; Pishghadam & Attaran, 2012), the readers are expected to infer the intended meaning of the writer and to make relationship between different parts of the text. This leads to rather limited employment of metadiscourse markers in these languages and following implicit rhetorical strategies (Herriman, 2014) to communicate the findings in a scientific text.

Differences in the rhetorical preferences between Persian- and English-speaking writers could also be traced in differences in the cultural values and educational practices of the two communities. Iranian culture values rather low individualism index and collectivism (Abdollahzadeh, 2011; Hofstede, 1977; Masoumi & Lindström, 2009). In academic contexts, collectivism urges individuals to seek for the harmony with their community, appeal to the current literature, and convey deference to the other members of the community (Masoumi & Lindström, 2009). The relatively high number of hedges and the equal frequency of boosters and attitude markers used by the Iranian writers indicate their tendency to use cautious and less assertive linguistic

behaviors, and to display their confidence rather covertly. English writing style, on the other hand, embraces rather individualistic values, which might be traced in the dominance of English in the international academia (Masoumi & Lindström, 2009), and the Aristotelian principles of English academic writing, which stems in directness, justification and proof (Abdollahzadeh, 2011). Therefore, it seems feasible that English-speaking writers are inclined to overtly express their plausible reasoning and their uncertainties towards the propositions through using significant numbers of hedges and boosters. These meta-discourse strategies enable the readers to develop their own justifications and join the writer along the discourse in the English writing style.

Moreover, fewer number of lexical bundles found in the Persian sub-corpus in comparison to the English one might lie in the fact that the word order in these two languages is different. English is a head-initial language and the English phrases (i.e. noun phrase, verbal phrases, adjective phrases, etc.) usually follow a consistent pattern in that the head of phrases consistently precedes the complement (Tallerman, 2005). Such characteristics enable the discourse analysts to find the repeated consistent patterns while using concordance programs. Persian, on the other hand, is known to be a hybrid language in that it has some features of head-initial and some features of head-final languages (Dabir-Moghaddam, 2013; Ghorbanpour, 2014). For instance, Dabir Moghaddam (2013) discusses that Persian verbal phrases are head-final while Persian prepositional phrases are head initial. Izadi and Rahimi (2015) and Ramsay, Ahmed, and Mirzaiean (2005) also discuss that Persian speakers follow a rather free word order since grammatical elements such as inflections and case endings enable them to constantly change the order of the sentences. Moghaddam (2001) claims that

“scrambling is an available mechanism in Persian” (p. 21). The relatively free structure of Persian, however, reduces the number of repeated patterns in the Persian texts written by different Persian writers, which might be the possible reason for fewer number of Persian lexical bundles in this study.

### **Hedges**

According to our findings, hedges were the most frequently used IMMs in both English and Persian architecture articles. This finding confirms the results reported by a number of inter-cultural studies Faghieh and Rahimipour (2009), who studied the employment of metadiscursive features in English for Specific Purposes (ESP) and applied linguistic articles, found that hedges are the most common IMMs in English and Persian research papers. According to Hyland (2005a), the strong reliance on hedges in academic discussions and adopting a tentative language is one of the main discursive features of the texts written in humanistic and social or what it is also called ‘soft’ sciences (Hyland, 2009). It is because in such sciences, the researcher has less control over the variables and the influence of various overlapping contextual factors makes the findings of such studies more open to question. As a result, it is more likely that researchers in the sub-fields of architecture follow the rhetorical principles used in soft sciences for knowledge construction and negotiations with their community members. Such a result is significant because in the literature, architectural research has been generally known as an interdisciplinary field, which stands between the borders of hard and soft sciences (Rendell, 2004). Since architectural research has the capability of adopting a wide range of methodological approaches (Rendell, 2004), there have been unanswered questions about the common rhetorical conventions in different academic genres in this field. The findings of our study suggest that the academic community of architects’ expectations and norms mainly overlap with those

of academics in soft sciences. It is probable that due to less control of the researchers over the variables in the architectural research, they feel less confident in expressing their results. Thus, they tend to establish claim-making negotiations with the readers and to persuade them through using tentative expressions and accepting the possibility of rejection by their community members.

The significant difference between the frequency of hedges in English and Persian articles (1792 and 773, respectively) might suggest that English-speaking architects who address the international audiences are more cautious in expressing their arguments and are more willing to leave enough space for the alternative voices to be heard. On the other hand, using fewer hedges by the Iranian writers in reporting and interpreting their results may imply that they prefer to gain acceptance of their national community of audiences through using other conventions that prevail in the local context, rather than using tentative expressions.

### **Boosters**

According to the findings of this study, English-speaking writers used boosters more than Persian writers. This result is in agreement with the findings of Jalilifar (2011), and Shokouhi and Baghsiahi (2009), who have reported less employment of emphatic markers by the Persian writers. This result might suggest the greater tendency of English-speaking writers in persuading their international readers by emphasizing the validity of their findings and showing their confidence in the truth of their propositions in comparison to their peers publishing nationally in local Persian journals. However, there are other studies in the literature such as Salar and Ghonsoly (2016), Zarei and Mansoori (2011), who suggest contradictory results. For instance, in their investigation of metadiscourse markers in the field of knowledge management, Salar and Ghonsoly

(2016) found that there is not any significant difference between the writers of both languages in the use of boosters. Zarei and Mansouri (2011), on the other hand, found that Persian writers use more boosting elements in their research papers. Thus, there is a need to conduct more inter-cultural rhetoric studies to understand the role of boosters in the academic discussions of Persian writers in humanistic and social sciences and to explore the probable differences or similarities between English-speaking and Persian writers in the employment of these features in different academic genres.

### **Attitude Markers**

The higher frequency of attitude markers in the Persian articles in comparison to their English counterparts might suggest that Persian writers tend to reach agreement with their readers through sharing their values and reactions to the propositions more than their English counterparts. This finding supports the results reported in some inter-cultural rhetoric studies such as Taki and Jafarpour (2012) and Zarei and Mansouri (2011), while it runs counter to Salar and Ghonsooly (2016), who found that there is not any difference between the two groups of English-speaking and Persian writers in the employment of attitude markers. Undoubtedly, the employment of attitude markers in English and Persian academic genres is one of the issues which needs to be investigated in future comparative genre analysis research.

### **Self-mentions**

The results of this study also revealed that the English-speaking writers used significantly more self-mentions than the Persian writers. This finding is in agreement with the results of other comparative studies in the field such as Fatemi and Mirshojaei (2012), and Taki and Jafarpour (2012). Fatemi and Mirshojaei (2012) found that the



English-speaking writers used self-mentions eight and a half times more than the Persian writers in applied linguistics and sociology articles published in English and Persian languages. Moreover, Taki and Jafarpour (2012) noticed that the Persian writers tend to widely avoid using self-mentions and that sometimes they prefer to use different equivalences of the term ‘researcher(s)’ instead of using the pronouns *I* or exclusive *we* to refer to their authorial self in the propositions. This latter finding is also in line with the finding of the present study, since our results showed that the Persian writers used the terms پژوهشگر and محقق (the equivalences of ‘researcher’ in Persian) to underscore their ‘researcher’ and ‘decision maker’ identities in methodology and discussion sections of the articles.

Using fewer self-mentions in the Persian academic texts could be traced in the Iranian cultural values such as rather low-individualism index and collectivism (Abdollahzadeh, 2011; Hofstede, 1977; Masoumi & Lindström, 2009). As it was mentioned earlier, Iranian culture values more impersonal and less assertive linguistic behaviors, which does not seem to allow the writers to explicitly claim their authority in the propositions. English culture, on the other hand, embraces rather individualistic values of English academic writing style (Abdollahzadeh, 2011) which encourages English-speaking writers to explicitly show their authorial identity and to express their personal perspectives in their texts (Hyland, 2005b).

Another interesting finding regarding the distribution of self-mention resources was the avoidance of the writers, both English and Persian, to use the first-person singular pronoun *I*. The non-appearance of the pronoun *I* in the English articles in this study contradicts with the findings of the previous studies (Fløttum, Dahl, & Kinn, 2006; Hyland, 2005; Mur-Dueñas & Šinkūnienė, 2016; Sanderson, 2008) who found that

pronoun *I* is the most frequently used self-mention marker in English articles. In fact, according to our results presented in Table 4.13, the English-speaking writers used the first-person plural pronouns of *we*, *our*, and in some cases *us*, in their propositions and totally avoid using the pronoun *I*. It is more likely that such a preference arises from the norms and conventions of professional-academic culture of architects (Atkinson, 2004). This might stem in the inclination of architects to conduct their research in groups and publish articles which usually have more than one author. This feature might probably result in the employment of the first-person plural pronouns *we* and *our* in English and Persian architecture articles.

### **Engagement Markers**

We found that engagement markers are the least used IMMs in the post-method sections of architectural articles. This finding could suggest that writers in the field of architecture might tend to avoid explicitly addressing their readers. Writers in the field of architecture might presume that their readers have enough content knowledge and thus prefer to adopt a more impersonal and precise language in the arguments. Furthermore, this finding confirms the results reported by Faghigh and Rahimpour (2009), who found that engagement markers are the least used IMMs in the discussion section of applied linguistic articles written in English and Persian languages. Engagement markers were found to be the least used IMMs in Mur-Dueñas' (2010) analysis of English and Spanish business management articles. Mu et al. (2015) also found that engagement markers were the least used IMMs in the applied linguistic articles written in English and Chinese languages.

According to the findings of our study, the Persian writers use slightly more engagement markers comparing to the English-speaking writers. This difference was

also detected in Faghih and Rahimpour's (2009) investigation on the employment of metadiscourse in the discussion sections of applied linguistic articles written in English and Persian languages. Yet, there are some studies in the literature that run counter to this finding. Salar and Ghonsoly (2016), for example, found no specific difference between the writers of both groups in the employment of engagement markers in the introduction sections of knowledge management articles. Taki and Jafarpour (2012) and Zarei and Mansouri (2011) argued that English-speaking writers use more engagement features in their academic texts. A probable clarification would be the point that in the studies of Taki and Jafarpour (2012) and Zarei and Mansouri (2011), researchers investigated the employment of IMMs in the whole paper, not only in a specific part of it such as discussion, or introduction. These results reveal the need to conduct more comparative studies to explore the preferences of English-speaking and Persian writers in the ways they directly address and involve their readers in their academic discussions.

Moreover, unlike Hyland (2005b) and Taki and Jafarpour (2012), who reported that inclusive pronoun *we* is the most common engagement feature in research papers, the results of the present research revealed that it was the directives, specifically modals of obligation, such as *should* and *must*, and predicative adjectives, such as *it is important to/that*, *it is essential to*, and *it is required to*, which were used significantly more in both English and Persian architecture research papers. As Hyland (2002b) states, the employment of directives in a text might imply the writers' willingness to "instruct the reader to perform an action or to see things in a way determined by the writer" (p. 215). He further argues that writers use directives to control the arguments and show their professional competence, and capabilities in persuading the readers.

Thus, it seems that the tendency of English-speaking and Persian writers to use modals of obligation and predicative adjectives might arise from their willingness (1) to show their authority, (2) to lead the readers through the arguments to finally come to the writer's claim, and (3) probably to show his or her command of different research techniques (Hyland, 2002b).

#### **5.4 Pedagogical Implications of the Study**

We conducted an inter-cultural comparative study to explore the use of interactional metadiscourse in the post-method sections of English and Persian research articles in the field of architecture. Such inter-cultural studies have significant implications for ELT and EAP teachers and students. Grabe and Kaplan (1989, 1996) stated that such studies make second language teachers and students familiar with some characteristics of the target language such as its morphosyntactic structures, coherence establishing mechanisms, and the audience expectations. The findings of these studies usually suggest teachers and learners should be aware of writing norm differences and possible reader-responsibility and writer-responsibility differences across languages.

Raising the awareness of second language learners of the rhetorical differences between the languages encourages the students to develop an exploratory and functional view about linguistic features such as metadiscourse. Teaching such rhetorical characteristics in the classroom would provide the opportunity for the students to practice using metadiscourse strategies to increase the coherence and thus produce texts which are cohesively appropriate for the native readers. This would ultimately lead to train autonomous and efficient writers in the target discourse community who can successfully interact with their audience and show their authorial stance in their texts. To this end, scholars such as Hyland (2005a) and Bruce (2008)

introduced a number of text analysis tasks which can be used in EAP and ESP materials to teach metadiscourse markers.

Text analysis tasks are useful to raise the awareness of the students of metadiscourse or other rhetorical features in a text. Teachers can select authentic pieces of the target genre using concordancing programs. The extracts can be used in varieties of text analysis tasks (Bruce, 2008; Hyland, 2005a). For instance, the students can identify examples of a specific metadiscourse sub-category, such as hedges, and find out its contextual functions. The extracts can also be selected from the same genre, but, written in different languages to raise the students' awareness of possible cross-cultural differences in the form and functions of metadiscourse markers. Paltridge (2001) suggested some contextual questions about the purpose and setting of the text, about the age, sex, ethnic background, and social status of the author, and about the intended audience, the relationship between the audience and the author to be discussed before and/or after reading a selected text to grab the students' attention towards the social aspects of writing and the role metadiscourse plays to establish the interaction between the author and the audience.

The students, in the next step, can be involved in a series of focused tasks such as cloze tests, gap fillings, translation, or summarizing tasks which provide them with the opportunities to use metadiscourse markers for different functions and to better understand the rhetorical roles of these features in writing (Bruce, 2008). Finally, extended writing tasks which not only provide the opportunity for the students to be involved in various steps of writing from brainstorming to drafting and editing, but also let them polish their texts based on the expectations of a specific group of readers. Extended writing provides the opportunity for the students to practice using

metadiscourse markers correctly and gives them the chance to produce a coherent and stylistically appropriate text (Bruce, 2008; Hyland, 2005a).

Following these discussions, this research proposed a sample unit of metadiscourse instruction with a focus on teaching hedge devices (Appendix C). The sample unit illustrates varieties of corpus-driven tasks which can be used in second language writing classes. The activities are designed based on the authentic extracts of the English architecture articles compiled in the corpus. Although the unit only addresses architecture students, it introduces different corpus-driven task types which can be used by the EAP teachers in other disciplinary fields. The designed sample aims to raise the students' awareness of the forms and functions of hedges and enable them to successfully use these features in the 'results', 'discussions', and 'conclusion' sections of their articles, thesis, or dissertations. The activities of the sample unit are summarized as follows:

- Brief introduction to interactional metadiscourse markers, their functions, and examples,
- Awareness raising questions in the introduction section of the unit about reader-writer-text interaction and the concept of knowledge construction phenomenon,
- Text analysis group work activities which implicitly teach the functions of hedges in sentences selected from the English sub-corpus,
- Three reading extracts from 'result', 'discussion', and 'conclusion' sections of the articles in which the students are required to distinguish the hedging features and their contextual functions,

- The reading exercises are followed by different matching, fill-in-the-blank, cloze test, scrambling activities and games to help the students to learn the meaning and use of different hedge markers,
- Guided sentence completion activities which provides the opportunity for the students to use hedges and hedge bundles in different sentences,
- Translation tasks which are designed to enable the students to compare the rhetorical preferences in their L1 and L2,
- Introducing hedge bundles which is followed by fill-in-the-blank and guided sentence completion exercises,
- A number of controlled and autonomous teaching writing tasks which raises the students' awareness of the differences between reporting and interpreting the results in academic articles and teaches them how to use hedge devices and hedge bundles to report and interpret the results.

## **5.5 Limitations and Delimitations**

Limitations are the constrains which are imposed to the researchers (Best & Kahn, 2006). As in all research studies, this study has some limitations which are mainly concerned with the issues of corpus design, namely copy right and text availability (Hunston, 2008), which directly affected the corpus compilation process. The copyright related issues are one of the most common problems that the researchers who are involved in corpus-based studies needs to deal with. The copyright permission usually restricts the availability of the texts. The problem is worse when the corpus consists published texts such as research papers as the main source of data. The second limiting factor in corpus-based studies is the issue of text availability, specifically, availability in a format which is accepted by word analysis software packages. Although written texts, such as research papers, textbooks, theses, or the learners'

essays, in contrast to spoken discourse, are easier to obtain, in some cases the process of converting them to the formats which are accepted by word analysis software packages is very complicated and time consuming. In this study, the copyright and availability issues directly affected the number of Persian architecture journals and limited them to only three to select the Persian articles from.

Delimitations are the boundaries of the research (Best & Kahn, 2006), which constrain the scope of the study and enable the researcher to manage the research. Delimitations of a study affect the generalizability and external validity of the findings and results (Ellis & Levy, 2009). Thus, in order to maintain the objectivity of this study, some delimitations are set.

To meet the criterion of representativeness in the corpus design, the researcher limited the scope of selected journals through focusing on areas of historical architecture, landscape architecture, architectural design and urban planning. Thus, there would be a possibility for the corpus to be an ideal representative of the academic language used in architectural research. In other words, those areas which are related to architecture in the field of art and design as well as interior architecture were excluded from the scope of the study.

Another delimitation is related to meeting the comparability conditions (Ädel, 2006) in corpus compilation process. To this end, the study focused only on experimental research articles which follow Introduction, Method, Results, and Discussion (IMRD) pattern. Thus, any result or conclusion to be drawn from the present study should only apply to experimental studies with IMRD pattern. There is no need to say that the results do not include other architectural research designs such as historical narratives,



and logical argumentations (Groat & Wang, 2013) which usually do not follow IMRD pattern.

The final delimitation concerns the research questions of the study, which specifies the use of interactional metadiscourse markers in this research. The generic investigation of architecture articles in this study was conducted based on Hyland's (2005) interpersonal model of metadiscourse. Although in this model metadiscourse markers are divided into two groups of interactive and interactional, due to constraints allocated to time and feasibility, the focus of the present study was only on the employment of interactional metadiscourse markers. There is no doubt that further investigation on the employment of interactive metadiscourse markers across the two sub-corpora of English and Persian articles would provide a deeper understanding about the role of metadiscourse markers in argumentative and persuasive language which are used in architecture articles. In addition, in order to maintain the objectivity of the research, this study merely focused on post-method sections of the articles. Such a specialized body of texts enables the researcher to offer a clear picture of the metadiscursive patterns which are commonly used in argumentative texts. It also reveals the similarities and/or differences between the rhetorical paths taken by the academic writers of the two languages of English and Persian to persuade their readers about their justifications and interpretations.

## **5.6 Suggestions for Further Research**

This study explored the rhetorical differences and similarities between English-speaking and Persian writers in the employment of interactional metadiscourse markers in the post-method sections of architecture articles. Future comparative cross-cultural studies can be conducted on exploring the employment of interactive

metadiscourse markers including transitions, frame markers, endophoric markers, evidentials, and code glosses in architecture articles. The analysis of interactive metadiscourse markers not only shows the way writers achieve coherence throughout the text but also unravels the writer's assumptions about the readers' level of knowledge and experience as well as their rhetorical expectations and norms (Hyland, 2005a). Moreover, the study focused on the employment of interactional metadiscourse markers on the post-method sections of architecture articles. Other sections of these articles such as abstract, introduction, literature and method, are required to be further investigated to provide a more comprehensive picture of the common rhetorical practices used by academic writers in this field.

The selected articles in this study followed IMRD pattern (Introduction, Method, Result, Discussion). Other research designs in the discipline of architecture such as historical narratives and logical argumentations (Groat & Wang, 2013) deserve to be explored in future comparative cross-cultural studies to help gain deeper insights about the common rhetorical features and community conventions of different types of architectural research papers written in different languages and contexts. Furthermore, future research can focus on other academic genres including research discourses such as book reviews and conference presentations, instructional reviews such as textbooks, and student discourse such as undergraduate essays, theses and PhD dissertations which are published and used in the field of architecture (Hyland, 2009).

In order to find similarities and differences between the rhetorical features used in English and Persian languages in the academic genres, the architecture articles written by native English and native Persian writers were investigated in this study. Further research can be conducted to study the employment of interactional and even

interactive metadiscourse markers in the English articles written by non-native Iranian writers. The results of such studies would provide valuable information regarding the effect of first language rhetorical preferences, here Persian, on the writing styles of foreign language writers when they produce texts in English. Such comparisons can make significant contributions to second language teaching studies, English for Academic Purposes (EAP), and English for Specific Purposes (ESP) studies, as well.

The interdisciplinary nature of architecture encompasses varieties of approaches to research from building sciences and built environments to humanistic and social sciences and art and design or visual research (Jenkins et al., 2004; Rendell 2004). The scope of the present study was limited to journals published in historical architecture, landscape architecture, architectural design, and urban planning. Future studies can investigate the rhetorical features of architectural articles published in art and design and visual research. Moreover, this study focused on exploring the rhetorical features and knowledge construction norms used in architecture research papers since architecture has been one of the fields largely ignored in academic genre analysis studies. There are still other disciplinary fields such as geographical studies, dentistry, ecology, religion studies, to name but a few, which are required to be investigated to understand the specific problem-solving and substantiation methods and the persuasive language used in the academic communications of the members of these disciplines.

Moreover, a closer look at so far conducted comparative metadiscourse studies in the literature which investigate the employment of these features in the English and Persian articles revealed that there are some controversies in research results regarding the employment of attitude markers, boosters and engagement markers by English-

speaking and Persian writers in the research articles published in different fields. For instance, while the findings of Taki and Jafarpour (2012) and Zarei and Mansouri (2011) are in line with the results of this study in that there is a significant difference between Persian and English-speaking writers in the employment of attitude markers, others such as Salar and Ghonsooly (2016) claimed that the difference between the two groups was not significant. Thus, there is a clear need for further comparative academic genre analysis studies to understand how English-speaking and Persian writers use these interactional metadiscourse markers to construct knowledge and interact with their local and international audiences.

Due to the relatively small size of the compiled corpus in this study, it was not possible to find the frequently used self-mention bundles in the Persian sub-corpus. There is a need to compile larger corpus of Persian architecture articles to understand how self-mention bundles are structurally realized and how they function in these articles. In fact, studies on the Persian stance and engagement bundles commonly used in different academic genres are one of the genre analysis fields which needs to be taken into account in future research.

Last but not least, the differences between the preferred rhetorical features of the two groups of English-speaking and Persian writers were discussed to be attributed to factors such as differences in the cultural values, expectations of the readers, publication contexts and reader-responsibility, writer-responsibility dichotomy of the two languages. Follow-up research might hold interviews with the writers of the analyzed articles to gain a deeper understanding about the writers' personal views towards their own idiosyncratic writing style and the employment of metadiscourse

markers in their research articles. Using personality trait questionnaires could also provide valuable information regarding the effects of individual differences of the writers on the employment of different rhetorical features and writing styles, in this case metadiscourse markers, in their academic articles. Moreover, interviews and questionnaires could be designed to explore the effects of the experience of the writers on the employment of metadiscourse markers in each specific academic discipline. Understanding differences between novice and experienced writers in the use of different rhetorical features would broaden our perspectives upon the expectations of the expert members of the academic communities and show the strategies that novice writers need to adhere to in what they say and write in these communities.

## **5.7 Conclusion**

This study adopted a cross-cultural, comparative approach to explore the employment of IMMs in architectural articles written in English and Persian languages. Investigating the metadiscourse features of these articles provided a deep insight towards the specific persuasion and substantiation methods that are common among the local, i.e. Persian academic writers, and international, i.e. English-speaking writers, members of the academic community of architects. Attempts were made to illustrate the rhetorical paths academic writers take to present a credible picture of their authorial self through creating dialogic interactions with their readers and a balanced representation of a restrained, while assertive and affective language for negotiating the presented claims. The findings also highlighted the fact that people from different first language backgrounds may differ in their knowledge construction preferences, the experiences they gain, and expectations they have from different academic contexts or genres (Hyland, 2006).

Pedagogically speaking, this study intended to raise the awareness of EAP and foreign language (FL) teachers about the key role metadiscourse markers play in the structure of academic texts and help them understand the probable reasons behind the pragmatic failures of non-native students in the academic genres. A sample unit was designed to provide varieties of options for those devoted teachers who are willing to use corpus-informed materials such as research articles in their courses to teach academic writing and the appropriate employment of metadiscourse to their students. It is believed that the findings of this study could also raise the awareness of those Iranian academics who are willing to publish in highstake international journals of the expectations of their audience and enable them to ultimately be accepted as successful members of the international community of architects.

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## **APPENDICES**

## Appendix A: English Architecture Articles

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## Appendix B: Persian Architecture Articles

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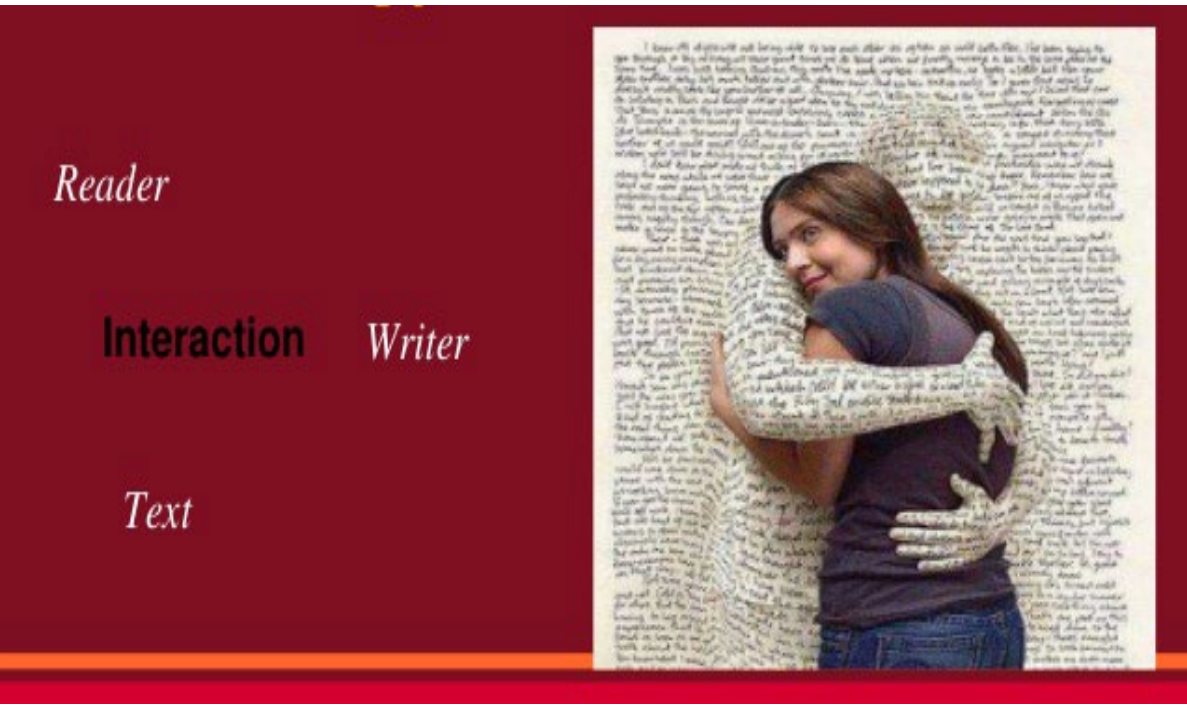
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## Appendix C: Teaching Metadiscourse - How to Teach Hedges

### New Insights into Academic Writing Skills *in the Field of Architecture*

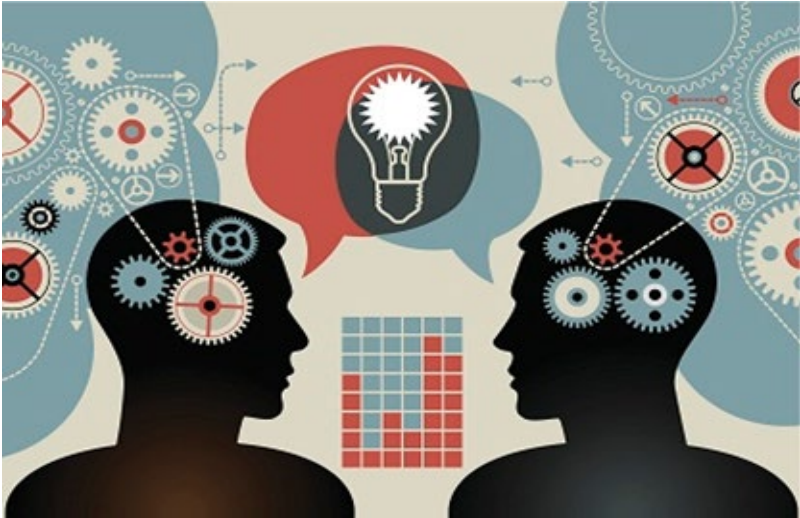




Is there any interaction between the writers and the readers?

How can a writer interact with his or her readers?

What about an architect who wants to transfer his knowledge through writing articles?



Identifying reader-writer relationship

## RECOGNIZING INTERACTIONAL MARKERS

Interactional markers are the words or phrases that inform the reader about the writer's personal views (1) to the presented data and the related discussions and (2) to the level and expectations of the readers. Moreover, interactional markers (3) reinforce the interaction between the reader and the writer.

In fact, interactional markers mainly emphasize interactional and evaluative aspects of a text. They acknowledge:

1. the writer's level of intimacy,
2. the writer's level of commitment to the claims presented in the text, and
3. the extent to which the reader is involved in the text.

Interactional markers are divided into the categories of hedges, boosters, attitude markers, self-mentions, and engagement markers.

<b>Category</b>	<b>Function</b>	<b>Examples/Signals</b>
<b>Hedges</b>	Withhold commitment and open dialogue	<i>might, perhaps, may, possible, suggest, estimate, probably</i>
<b>Boosters</b>	Emphasize certainty or close dialogue	<i>in fact, definitely, clear, certainly, show, think</i>
<b>Attitude Markers</b>	Express writer's attitudes to proposition	<i>interesting, agree, prefer, important, expected, surprisingly</i>
<b>Self-Mentions</b>	Explicitly build relationship with reader	<i>I, we, my, me, our, author</i>
<b>Engagement Markers</b>	Explicit reference to authors	<i>think of, note that, let us, it is essential that</i>

# module 1

## Hedges in Academic Texts

*Using hedges protects the writer from making strong claims. In fact, it indicates the writer's level of certainty regarding the presented evidence and support.*



**HEDGING LANGUAGE**

seems	usually	appears	suggests
	demonstrated that	It tends to be...	probable
possibly			often
One possible explanation is...	frequently	could / may / might	
It is widely agreed that...		indicates	conceivably
	It could be the case that...		

## I. Pre-reading



### Group Work

**A. In the following sentences the writer is cautious and takes subjective position to the presented information. Underline the hedging words which show the uncertainty of the writer.**

1. The number of designs is not exhaustive, and it is probable that the range of low-cost designs could be increased.
2. More complicated systems will become more demanding of maintenance and inevitably be less likely to keep their expected performance levels.
3. However, it is also not clear if the FM team would be able to cope with a higher demand and keep the quality of an occupant's environment at a satisfactory level.
4. It could be suggested that performance testing may be more valuable and thus should be awarded accordingly.
5. In 2006, about 1.7 million Canadians were living in the exurban districts of CMAs, where they comprised perhaps 8% of the total metropolitan population (see Table 2).
6. In general, thinner groin vaults tended to have larger displacement capacity, and thicker vaults tended to have smaller displacement capacity, when compared to the equivalent arch results.
7. It could be argued that it is the relatively high score for lighting overall which has helped to bring up the overall comfort score to its value of 4.91, despite all the other contributing environmental scores being clustered around 4.4.



## II. Reading 1

A. Read the text driven from the ‘**result**’ section of an architecture article.

Underline **six hedging features** used in the text.

In reflected light optical microscopy at  $\times 20$  magnification, the soiling layer became visible as a very thin, distinct band. It appeared to closely match the profile of the substrate and was of almost uniform thickness throughout. The internal pore structure of the terracotta showed no evidence of leaching of soluble migratory precipitates, even in the region immediately below the soiling layer and the fireskin (Figure 5). This finding suggested that the soiling layer had most likely been externally deposited. With reference to the externally-deposited soiling mechanisms discussed in Section 3, the extent to which this observation could be attributed to brittle ferric oxide layer or gypsum crust formation was unclear at this stage.

Hall, R. M. (2011). Characterization of irreversible black soiling layer formation on historic unglazed terracotta substrates using analytical scanning electron microscopy (ASEM) with energy dispersive X-Ray (EDX) analysis. *International Journal of Architectural Heritage: Conservation, Analysis, and Restoration*, 5 (2), 172-187.

Keep in mind that writers use hedging features to **report the results cautiously** and to negotiate his or her claim with the readers.



B. Match the definitions on the left with the words on the right column.

- |   |         |
|---|---------|
| 1. cause one to think that (something) exists or is the case. | likely  |
| 2. seem; give the impression of being.                        | suggest |
| 3. might happen or be true; probable.                         | unclear |
| 4. indicate possibility.                                      | appear  |
| 5. not obvious; uncertain                                     | could   |

C. Put the words in order.

1. important/for/factors/likely/the/both/are/users.

.....

2. issue/could/research/tackle/the/future.

.....

3. the/difference/that/the/test/suggests/is/significant.

.....

4. divided/participants/were/equally/the/almost.

.....

5. technique/be/not/useful/appear/does/this/to.

.....



### III. Reading 2

A. Read and underline five hedging features used in this piece of ‘**discussion**’ about the issues of population decline and smart decline.

#### DISCUSSION

While a considerable number of smart decline key words and phrases appear in the Framework Plan, it seems clear from the results of the content analysis and contextual reading that the appearance of smart decline strategies in the Framework Plan is not due to the authors’ embrace of smart decline but is, instead, more likely due to some overlap between smart growth and smart decline strategies. Therefore, the fact that these policies for smart growth are also good smart decline strategies to cope with continued regional shrinkage appears to be an unintentional side effect of the plan. Perhaps then, the Framework Plan can be read not as a plan to deal directly with urban shrinkage but rather as a way to address the negative externalities created by sprawl.

Hollander, J. B. & Cahill, B. (2011). Confronting population decline in the buffalo, New York region: A close reading of the ‘erie-Niagara framework for regional growth’. *Journal of architectural and planning research*, 28(3), 252-268.

Note that in the **discussion sections**, the writers use hedges to **interpret the results** and leave enough space for the readers to judge the propositions themselves.



**B.** Choose the appropriate hedging word.

1. In the pilot study, occupants **appear/argue** to be aware and considerate of the needs and preferences of others.
2. At All Souls College (Figure 4), for instance, the top of the two towers are blacker, which **could/tend to** be attributable to the type of limestone used or to higher-up exposure to air-borne pollutants.
3. **Perhaps/Almost** none of the interviewees were sure if the buildings were 'green', although most of them had heard about this quality.
4. This **suggests/assumes** that differences between conditions on the first trial illuminance were statistically significant ( $H(3) = 14.59, p < 0.01$ ).
5. These repairs are **likely/approximately** to be the most useful and long-lasting result of theWells campaign.

**C.** Complete the sentences with the hedges you found in Reading 2.

1. .... one of the drivers for the high levels of environmental knowledge may be lived experience.
2. Thus, in the hierarchy of colors, the average blue pane ..... to have gained some clarity.
3. The facade ..... to be seriously damaged by surface erosion, together with thick black crusts, biological crusts, microfractures and detachment.
4. As a result, sensation, comfort, and acceptability responses may be more ..... to be overstated as protest votes.



## IV. Reading 3

A. Read the following text taken from the ‘**conclusion**’ section of an article on the safety of streetscapes and underline eight hedging features used in the text.

Our models suggest that the skeletal proportions of streetscapes across New York City accounted for approximately 42% of variability in perceived safety. In general, streetscapes with the greatest enclosure, fostered by substantial tree canopy, many individual buildings, and large cross-sectional proportions, were perceived as safest (Fig. 6). Tree canopy offered the strongest positive effect. Importantly, Walk Score® had far less predictive power than skeleton variables, indicating a clear distinction between the block-scale design of streetscapes and neighborhood-scale urban form. Both factors are likely important to the vitality of urban places, but are inadequate proxies for one another. Household income also had a relatively minor effect on perceived safety. This suggests that enclosing buildings and trees may have provided a baseline degree of perceived safety, even in less affluent places.

Harvey, C., Aultman-Hall, A., S. E. Hurley, & Troy, A. (2015). Effects of skeletal streetscape design on perceived safety. *Landscape and Urban planning*, 142, 18-28.

Bear in mind that in **conclusion** sections, the writers try to provide a **summary** of their findings, offer some **implementation** and **suggestions for future research**, and explain **the limitations** of their study.

B. Unscramble the given words.

- |                  |       |             |       |
|------------------|-------|-------------|-------|
| 1. mapxoietlpayr | ..... | 4. lyeikl   | ..... |
| 2. evtryliael    | ..... | 5. caitiedn | ..... |
| 3. rgieaennl     | ..... | 6. cnraeul  | ..... |

C. Complete the following sentences using the words given. (Make changes if necessary).

1. indicate (verb)

The major findings .....

2. approximately (adverb of quantity)

According to the results .....

3. relatively (adverb)

The test showed .....

4. may (auxiliary verb)

Differences between the findings .....



D. Translate the last three sentences of Reading 3 to your first language.

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## V. Cloze Test



A. Read the following text taken from the conclusion section of an article about ‘ the effects of street trees on the sales price and the time-on-market of houses’ in the area of Portland.

**Choose the correct option in each blank space** to show the way the writer relates the findings of the study to some suggestions for further research.

Extrapolating study results to other cities ....(1).... problematic. Ideally, similar hedonic studies ....(2).... carried out in cities of different size, climate, demographic makeup, etc. Absent such studies, it ....(3).... probably be safer to extrapolate results to cities with similar housing markets, demographics, and stocks of street trees. ....(4)...., the relative size of the costs and benefits of street trees in Portland, and the consistency of our results with other studies, ....(5).... that urban forestry investments are likely to yield substantial benefits. In addition, street trees in other cities ....(6).... have positive spillover effects, although the extent and size of the spillover ....(7).... differ.

- |                     |              |              |                  |
|---------------------|--------------|--------------|------------------|
| 1. a) must be       | b) likely    | C) may be    | D) probably      |
| 2. a) can be        | b) would be  | C) may be    | D) will be       |
| 3. a) must          | b) would     | C) should    | D) can           |
| 4. a) Consequently  | b) therefore | C) similarly | D) however       |
| 5. a) estimate      | b) suppose   | C) claim     | D) suggest       |
| 6. a) are likely to | b) roughly   | C) tend to   | D) approximately |
| 7) a) may           | b) must      | C) can       | D) should        |



## VI. Overview

A. Complete the following sentences using the words given. (Make changes if necessary).

1. **suggest (verb)**

This finding .....

2. **probably (adverb)**

This result .....

3. **around (adverb of quantity)**

According to the data, .....

4. **could (auxiliary modal)**

Urban planners .....

5. **possible (adjective)**

The study has shown that .....

6. **would (auxiliary modal)**

The data suggest that .....

7. **likely (adverb)**

The study has shown that .....



### B. Pair Work

Make a list of hedges used in Reading 1, Reading 2, and Reading 3. To which grammatical category, each of the above written hedging features belong to?

Adjective	Adverb	Adverbs of quantity	Modals of auxiliary	verbs
possible .....	almost .....	around .....	might .....	appear .....
..... .....	..... .....	..... .....	..... .....	..... .....
..... .....	..... .....	..... .....	..... .....	..... .....
	..... .....	..... .....	..... .....	..... .....
	..... .....	..... .....	..... .....	..... .....



C. Write down the translation of the words, you added to the table above, to your first language.



D. Translate the following paragraph to your own language.

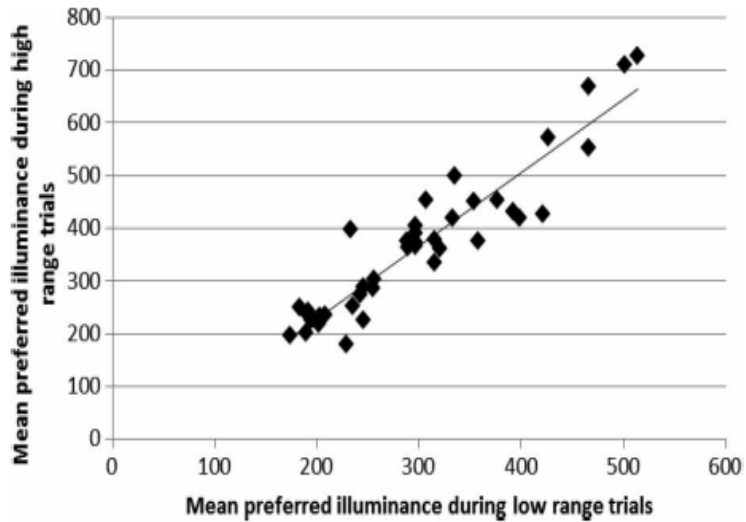


Figure 5. Correlation between mean illuminance settings with low and high stimulus ranges.

Figure 5 shows the correlation between the mean preferred illuminance settings made by participants when presented with the low stimulus range and the high stimulus range. As can be seen this correlation was positive, and Spearman's correlation coefficient suggests it to be significant ( $r = 0.906, p < 0.001$ ). This suggests that a participant who set their preferred illuminance relatively high on one of the stimulus ranges would tend also to set it relatively high on the other stimulus range.

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### E. Group Discussion

Did you notice any difference between the ways this piece of text is written in your own language with that of English? What are the grammatical and semantic similarities and differences in the way this diagram is described in these two languages?



### F. Find 12 'hedges' which hide in the word square.

a	b	y	a	l	m	o	s	t	b	t	p
r	g	e	s	t	i	m	a	t	e	f	o
o	t	b	k	u	w	r	w	o	u	l	d
u	l	f	i	n	g	e	n	e	r	a	l
n	i	p	b	j	u	g	r	b	o	c	p
d	k	o	w	y	m	k	e	t	c	t	r
b	e	s	f	i	y	i	l	s	f	i	o
a	l	s	o	s	t	l	g	k	t	c	b
u	y	i	i	e	j	b	v	h	q	f	a
v	b	b	c	e	b	d	n	e	t	y	b
c	o	l	b	m	q	v	j	h	b	k	l
t	b	e	s	d	c	o	u	l	d	b	e

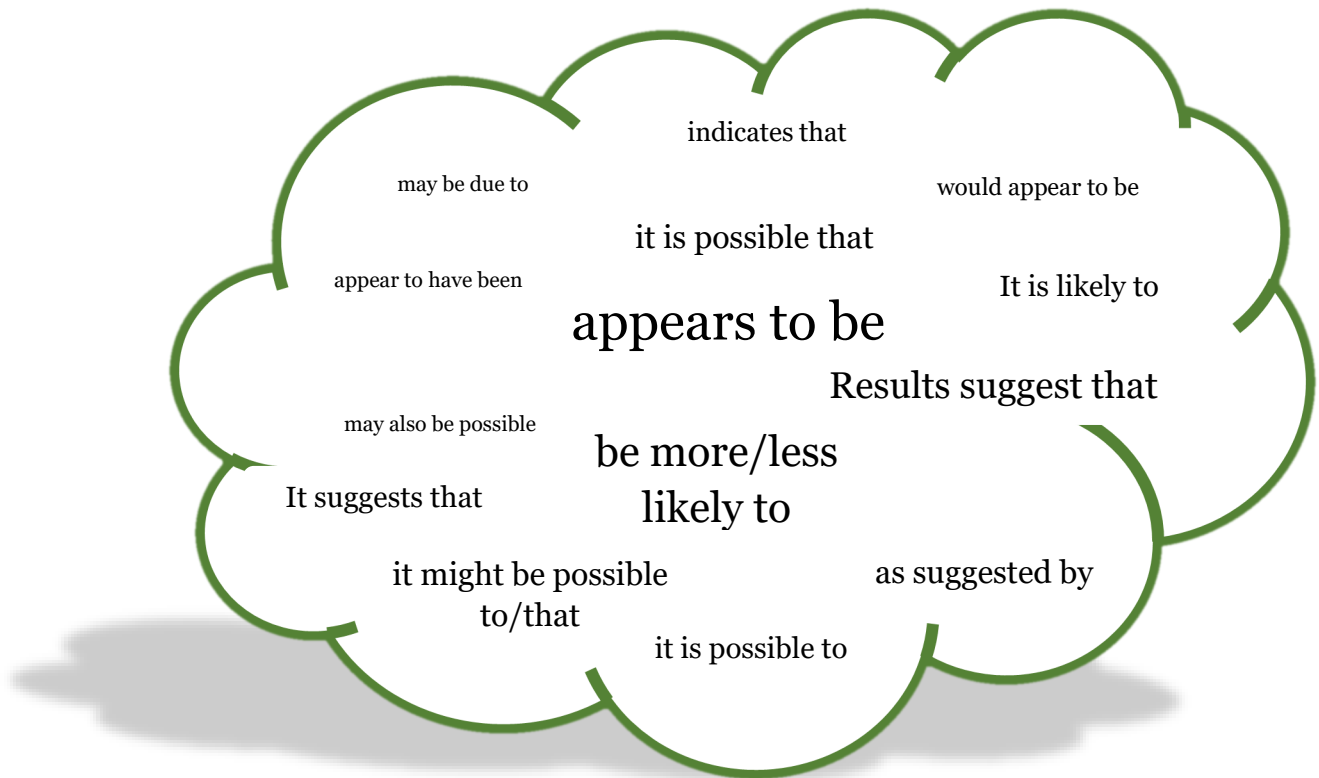
#### Word List

- |            |         |          |          |
|------------|---------|----------|----------|
| in general | would   | seem     | estimate |
| could      | suggest | possible | almost   |
| probable   | around  | likely   | might    |



## VII. Language Review

**Lexical Bundles** are groups of words that occur repeatedly together within the same register, such as academic essays or articles. Examples are:



A. Complete the sentences with the appropriate lexical bundles given in the box.

more likely to	appears to	it is possible that
as suggested by	indicates that	may be due to

1. One reason for the lack of attention to indoor air quality ..... the intangibility of health and the problems associated with measuring quantifiable benefits.
2. .... Yu and Kim (2011), there is a need for criteria on the certification of materials with regards to their potential impact on the quality of indoor air.
3. Without the impact on work rate, discomfort was ..... be tolerated.

4. Commuting from rural areas to employment in the central city ..... be substantially easier in areas like Thunder Bay and Saguenay.
5. .... the results from the current research indicate a shift in the environmental values of the generation currently reaching adult-hood.
6. The mean score ..... the sample was leaning slightly to a high level of personal efficacy among respondents.

**B.** Complete the following sentences using the given lexical bundles. (Make changes if necessary).

1. appear to

The façade .....

2. it is possible that

According to the results, .....

3. (be) likely to

The participants .....

4. may be due to

The difference .....

5. suggest that

Our model further .....



## VII. Practice Writing

This figure is derived from Dawkin's (2014) article "Perceptions of Architects Who Choose to Practice Interior Design". In this article, the author aims to investigate the relationship between architects and interior designer by asking architects how they think interior designers perceive architects who practice interior design. Figure 1 reveals the participants' responses to a statement in a questionnaire used in this study "architects respect interior designers".

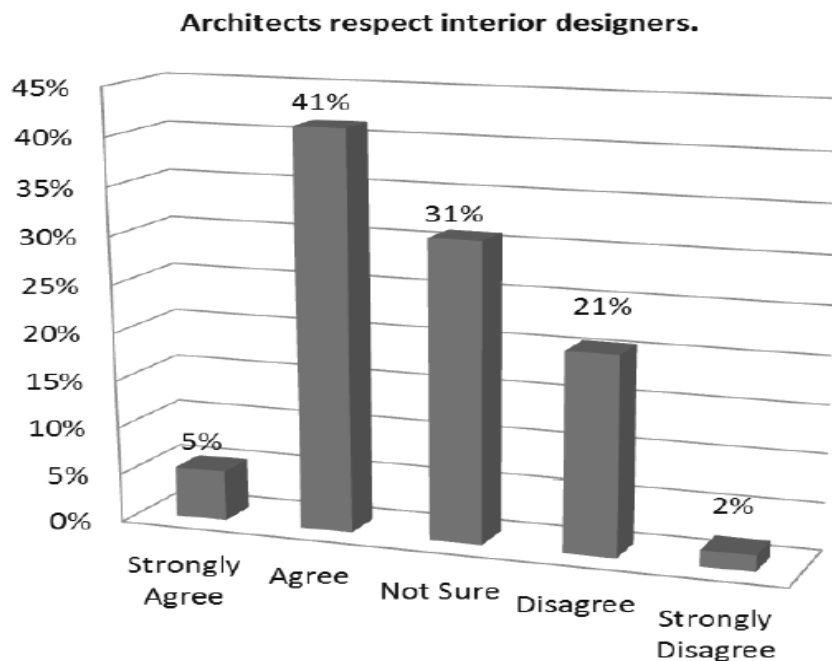


FIGURE 1. Participants' responses to the statement "Architects respect interior designers."

A. **Scramble** the following sentences to come up with a coherent paragraph.

1. Thirty one percent of the architects seem to be uncertain about the perceptions of architects towards interior designers.

2. Nearly half of the participants either 'agree' or 'strongly agree' with the statement (combined 41% and 5% of responses, respectively).

3. Figure 1 shows the participating architects' responses to the statement "architects respect interior designers".

4. It is probable that for this group of architects the relationship between the two professions is still unclear.

5. On the other hand, about 23% of the architects participating in the survey are shown to 'disagree' or 'strongly disagree' with the statement.



### Pair Work

**B.** In which of the sentences above, does the writer try to **report** the given data?

In which sentence, does the writer **interpret** and try to explain the reason which caused such results?

**C.** Complete the following sentences to further **interpret** the described data.

1. The participants who agree are more likely to .....

2. The disagreement of participants with the statement "architects respect interior designers" might be due .....

3. It is likely that .....

4. The results suggest that .....



### Group Work

**D.** What rule could you make about the steps taken in reporting and interpreting the results? Discuss.



## Writing

E. In his article, Dawkin (2014) have also investigated the participants' responses to the statement "interior designers respect architects". The results are shown in Figure 2.

Write a 150-word paragraph, which contains at least six hedges (likely, suggest, ...) and four hedge-containing lexical bundles (it seems that, may be due to, ....) to report and interpret the presented data in the diagram.

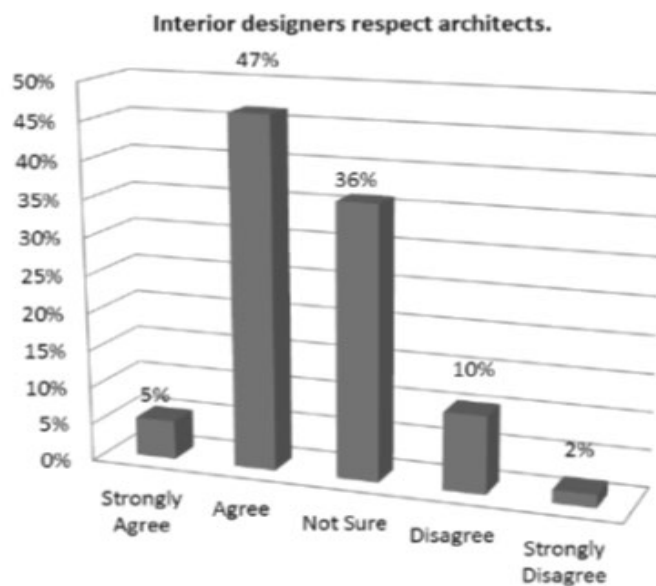


FIGURE 2. Participants' responses to the statement "Interior designers respect architects."

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**The most common interactional metadiscourse markers in architectural articles**

<b>Hedges</b>	<b>Boosters</b>	<b>Attitude Markers</b>	<b>Self-mentions</b>	<b>Engagement Markers</b>
about (adverb of quantity) almost apparently approximately argue around (adverb of quantity) assume could essentially estimate estimated feel felt feels generally indicate indicated indicates in general in most cases likely mainly may maybe might mostly often perhaps possible possibly probable probably rather x relatively seems should sometimes suggest suggested suggests tend to tends to tended to tends to unlikely usually would	believe believed believes certainly clear clearly demonstrate demonstrated demonstrates evident evidently find finds found in fact indeed must (possibility) never obvious obviously of course prove proved proves really show showed shows sure surely think thinks thought undoubtedly	agree agrees agreed appropriate appropriately desirable desirably disagree disagrees disagreed dramatic dramatically essential essentially even x expected expectedly important importantly inappropriate inappropriately interesting interestingly prefer prefers preferable preferably preferred remarkable remarkably surprised surprising surprisingly understandable understandably unexpected unexpectedly unusual unusually usual	I we (exclusive) me my our (exclusive) mine us (exclusive) the author the author's the writer the writer's	must be + p.p should be + p.p. it is important that/to it is essential that/to it is vital that/to it is necessary that/to it is required that/to one's we (inclusive) us (inclusive) our (inclusive)

## **ANSWER KEY:**

### **I. Pre-Reading**

- A.** 1. it is probable that  
2. less likely to  
3. it is not clear/would be able to/  
4. It could be suggested that/may be  
5. perhaps  
6. In general/ tended to/tended to  
7. It could be argued that/ relatively/around

### **II. Reading 1**

**A.** appeared to/almost/suggested/likely/could/unclear

- B.** 1. Suggest  
2. appear  
3. likely  
4. could  
5. unclear

- C.** 1. Both factors are likely important for the users.  
2. The issue could tackle the future research.  
3. The test suggests that the difference is significant.  
4. The participants were almost equally divided.  
5. This technique does not appear to be useful.

### **III. Reading 2**

**A.** appear/seems/more likely due to/appears to/perhaps/can

- B.** 1. Appear  
2. could  
3. Almost  
4. suggests  
5. likely

- C.** 1. Perhaps  
2. appears  
3. seems  
4. likely

### **IV. Reading 3**

**A.** suggest that/ approximately/ In general/ indicating/ likely/relatively/ suggests  
that/ may

- B.** 1. Approximately  
2. relatively  
3. in general  
4. likely  
5. indicate  
6. unclear

**V. Cloze Test**

- |      |      |      |      |
|------|------|------|------|
| 1. C | 2. B | 3. B | 4. D |
| 5. D | 6. A | 7. A |      |

**VI. Overview**

- A.** 1. May be due to  
2. As suggested by  
3. more likely to  
4. appears to  
5. it is possible that  
6. indicates that

**VII. Language Review**

- A.** 1. may be due to  
2. as suggested by  
3. more likely to  
4. appears to  
5. it is possible that  
6. indicates that

**VIII. Practice Writing**

- A.** 1. 4                      2. 2                      3. 1                      4. 3

- B.** reporting sentences are: 1., 2., 3., (indicating the figures)  
Interpreting sentence is: 4. (describing the reason)