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Interactional Metadiscourse Markers in the Abstract Sections of Arabic Patents

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Abstract
This study aims to investigate interactional metadiscourse markers (IMDMs) in 60 patent abstracts written in Arabic by Arabic-native drafters within the field of human necessity. Specifically, the objectives are to identify which categories of IMDMs are predominant in Arabic patent abstract and to explain how metadiscourse markers function in these abstracts. To achieve these objectives, data were analyzed quantitatively to count the frequency of IMDMs, and qualitatively to examine the functions of these markers within Arabic patent abstracts based on Hyland's model (2005). The results indicate that boosters, hedges and attitude markers are the most frequently employed markers while the remaining categories show a low frequency of occurrence. Moreover, the analysis also reveals that IMDMs fulfill different functions, such as providing data in a truthful manner, avoiding commitment to precise figures and persuasion among others. The findings of this research are useful for Arabic-speaking drafters and novice inventors for a better understanding of IMDMs commonly applied in their patent abstracts. A better understanding of the pragmatic functions of IMDMs can improve not only patent drafting skills, but also the chance for successful patent grants. It is recommended that future research investigate IMDMs within other patent sections such as claims, description, and background among different disciplines in order to achieve better insights of the use of such rhetorical metadiscourse features.
Keywords: Abstract section, Arabic, interactional resources, metadiscourse markers, patent

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Introduction

Patents are documents granted by a government to inventors giving them the sole right to make, use, and sell their invention. Regardless its language, patent is a structured document, which typically consists of several sections, such as title, abstract, background of the invention and claims. The abstract section, which is the focus of this study, is an essential component of the entire patent documentation that consists of a concise summary of the invention and serves a common communicative purpose of introducing an invention. Its communicative purpose is informative as well as persuasive. Through patent abstracts, readers can predict the quality of the invention and decide if the other sections of the patent are worth scanning or not. Quinn (2014) confirms that in writing patent abstracts, it is not enough for drafters to represent the object of their invention; they must also try to persuade the examiners to accept their invention and to establish the importance of their new ideas. Patent drafters have to persuade the readers _in particular, patent examiners that their inventions are useful and new. If not, the application faces an increased opportunity of being rejected. Persuading a patent examiner of the usefulness of an invention is the ultimate goal of a patent application.

Drafting well-organized Arabic patent abstract poses difficulties for patent drafters (Alrahman, 2015), even for the native Arabic drafters because they need to be acquainted with persuading linguistics devices commonly employed to make their abstracts acceptable by their target discourse community. Overall, patent drafting certainly necessitates not only a sufficient command of the terminology of the language since it is mostly "acquired by imitation"of other patent documents" (Sancho-Guinda & Arinas-Pellón, 2011, p.13), but also the rhetorical strategies typically deployed to achieve persuasion (Berkenkotter & Huckin, 1995; Sancho-Guinda, 2012). Such persuasion could be achieved through a skillful manipulation of rhetorical features that create successful abstracts such as metadiscourse which are essential for persuading the reader (Breeze, 2009).

Literature Review

Metadiscourse

The concept 'metadiscourse' is not a well-defined term and it has been defined consequently by several scholars (William, 1981; Vande-Kopple, 1985, 2002; Crismore & Fansworth, 1990; Markkanen et al., 1993; Luuka, 1994; Bunton, 1999; Hyland, 2000, 2005; Dafouz, 2003; Hyland & Tse, 2004). Williams (1981) views metadiscourse as "whatever does not refer to the subject matter being addressed"(p.212). Similarly Vande- Kopple (1985) defines it as "discourse that people use not to expand referential material but to help their readers connect, organize, interpret, evaluate, and develop attitudes toward that material."(p.83), and Crismore et al. (1993, as cited in González, 2005, p.37) have viewed metadiscourse as "non-propositional aspects of discourse which help to organize the prose as a coherent text and convey a writer's personality, credibility, reader sensitivity and relationship to the message". More recently, Williams (2007) views metadiscourse as "the language that refers not to the substance of your ideas, but to yourself, your reader, or your writing."(p.65) However, Hyland (2004, 2005) presents a more comprehensive interpersonal view of metadiscourse: Hyland (2000) defines metadiscourse as "the linguistic resources used to organize a discourse or the writer's stance towards either its content or the reader" (p. 109). The clear point with these interrelated definitions is that the appropriate

employment of metadiscourse assists the writer to skillfully manipulate his writing to achieve the demands and expectations of the discourse community (Nasiri, 2012; Hyland, 2005).

Metadiscourse assists to transmit propositional information in a clear, persuasive and attractive way in an endeavor to gain acceptance and understanding, as well as reader-writer involvement. It also helps to produce a coherent text and indicates the writers' "personality, credibility, considerateness of the reader, and relationship to the subject matter and to the readers" (Crismore et al., 1993, p. 40).

This study adopts the interactive definition of metadiscourse introduced by, for instance, Crismore et al. (1993) and Hyland (1998). In other words, for the present research, metadiscourse is viewed as a tool that writers employ for the purpose of affecting the reader's comprehension and evaluation of the text. In this respect, the abstract section of patent can be seen as a persuasive form of writing. According to Aragonés (2007), the rhetorical purpose of patent abstract is essentially persuasive; it seeks to persuade the reader that what is claimed is new and useful. Aragonés (2007) points out that besides providing technical information quickly, the patent abstract section convinces the readers that the patent is worth reading without disclose the whole invention. Drawing on this persuasive task, metadiscourse can assist patent drafters to realize their ultimate communicative purposes.

Metadiscourse Models

Several metadiscourse taxonomies have been proposed by metadiscourse theorists (Hyland,2005; Vande Kopple, 1985, 1997; Crismore, 1993). Vande Kopple(1985) provides the first taxonomy of metadiscourse. His model consists of "textual" and "interpersonal" metadiscoursal markers. In this taxonomy, textual metadiscourse consists of four categories: text connectives, code glosses, illocution markers and narrators, whereas the interpersonal metadiscourse constitutes three categories: validity markers, attitude markers and commentaries. Vande Kopple's taxonomy was particularly significant since it was the first organized and systematic endeavor for offering a model that paved the way to a number of studies and new taxonomies. However, this model has been subjected to many modifications due to some conceptual and practical deficiencies in this model as Hyland (2005) points out, particularly the overlapping functions between categories.

Crismore et al. (1993) propose a modified version of Vande Kopple's model. In this taxonomy, the two main categories of textual and interpersonal remained the same, but they divide, and reorganize the subcategories. Furthermore, they divide the textual metadiscourse into two main categories of "textual" and "interpretive" markers with a view to separate organizational and evaluative functions. Textual metadiscourse constitute markers which can assist the discourse to be organized, and interpretive markers help the reader to better interpret and comprehend the writer's intended message (Crismore et al., 1993).

Later taxonomies have differentiated between categories such as "interactional" and "interactive" (Hyland & Tse, 2004). Hyland (Hyland, 2000, 2005) offers the possibly most inclusive model for the study of metadiscourse. His model, developed from earlier works such as Vande-Kopple (1985) and Crismore et al.(1993), includes two main types of metadiscourse:

interactive and interactional (see Table 1). The former assists to organize the text as a whole while the later involves the reader in the text.

Table 1. *An Interpersonal Model of Metadiscourse*

Category	Function	Examples
Interactive	**Help to guide the reader through the text**	**Resources**
Transitions	express relations between main clauses	in addition, and, but, thus
Frame markers	refer to discourse acts, sequences or stages of parts of the text	first, next, finally, to conclude
Endophoric markers	refer to information in other parts of the text	as noted above, see Fig, in section ...
Evidentials	refer to information from other texts	according to X, Z states
Code glosses	elaborate propositional meanings	namely, for example, such as, in other words
Interactional	**Involve readers in the text**	**Resources**
Hedges	withhold certainty and open dialogue	might, perhaps, possible, about
Boosters	emphasize certainty or close dialogue	in fact, definitely, obviously, it is clear that, demonstrate
Attitude markers	express writer's attitude to proposition	unfortunately, hopefully, surprisingly, I agree
Self-mentions	explicit reference to author(s) in the text	I, we, my, me, our
Engagement markers	explicitly build relationship with reader	you, your, consider, note, you can see that

Source: **(Hyland 2005, p. 49)**

Based on the table above, Hyland's model consists of two major categories of metadiscourse: interactive and interactional. The interactive category includes transitions, frame markers, endophoric markers, evidentials, and code glosses. The main aim of these features is to provide an organized and coherent text that helps guide the reader through the text in a way to meet the needs of the reader based on the writer's expectations. The interactional category includes hedges, boosters, attitude markers, self-mentions, and engagement markers. It essentially aims at offering a vivid text where the reader can easily find the writer's voice. It also aims at building a personal relationship with the readers as it is employed to convey the writer's reactions to the content.

For the present study, Hyland's (2005) taxonomy was adopted over the other models of metadiscourse (e.g, Crismore et al., 1993; Vande-Kopple, 2002) because the categorization is concise and inclusive (Vazquez et al., 2006). It was also found to be uncomplicated, clear and comprehensive (Abdi et al., 2010).Besides, this framework was noted to be successful in existing studies that investigate the Arabic abstract such as Rashidi and Alihosseini (2012) and Salek (2014). As Hyland (2005) points out, the taxonomy has overcome some flaws and overlaps in previous taxonomies such as Crismore et al. (1993) and Vande-Kopple (1985).

The focus of this research is to examine the second function of metadiscourse, that is, the interactional metadiscourse since it is "more personal" (Hyland, 2005) and involves the reader more directly compared with interactive metadiscourse. Interactive markers comprise self-reflective resources (e.g., *for instance*, *therefore*) to shape and order the text to make it coherent, while interactional markers refer to linguistic resources (e.g., *surprisingly*, *you can see that*) for writers to make comments and to involve readers in the text. Since the latter is a pivotal device to reflect writers' credibility, personality, relationship to the ideational materials (Crismore et al., 1993), the exploration of this category of metadiscourse will assist to reveal how patent drafters can manipulate these devices to make their abstracts more effective and persuasive. The interactional resources particularly include the use of self-mention, hedges, boosters and attitude markers.

Hedges are lexical devices used to refer to uncertainty about the propositional information , such as 'suggest, 'seem', 'may' and 'indicate'. "Hedging enables writers to express a perspective on their statements, to present unproven claims with caution, and to enter into a dialogue with their audiences." (Hyland, 2005,p. 112). Boosters, on the other hand, are linguistic means that raise certainty about the truth in communication such as 'obviously, very and clearly'. Engagement markers are linguistic resources employed by writers to explicitly address the readers and involve them in the dialogue. This can be achieved by the use of 'we, our and us', reader pronouns such as 'you and your' besides the question mark. Self-mention "refers to the degree of explicit author presence in the text" (Hyland, 2005, p. 53), which can be realized by the use of the possessive adjectives and first person pronouns 'my, me, I, mine, our and us'. The last interactional markers are attitude markers. Hyland (2005) states that they "indicate the writer's affective, rather than epistemic, attitude to proposition"(p.53). Examples are 'I agree, interestingly and unfortunately'.

A number of research have been incorporated to the notion of metadiscourse in patents (Aragonés, 2007, 2010; Kim, 2015& Patience, 2015). Arinas-Pellón &Sancho-Guinda (2010) examine the use of two interactional metadiscourse markers (hedges and boosters) in U.S. patents from various technical fields while Sancho-Guinda (2012) establishes the curial role of metadiscourse in achieving flexibility in patent texts. Through corpus analysis, and following Hyland's (2005) original taxonomy that embraces (hedges, boosters, attitudinal adverbials and self-mention) her study reveals how patent drafters employ metadiscourse elements to engage with their readers as persuasion strategies. Kim (2015) finds that rhetorical elements such as hedges, boosters, and evaluation play a crucial role in understanding patents and their implicit meanings, as well as persuading designated audiences in order to change their values, opinions, or behavior.

The most relevant study to the present study is Aragonés (2009) who investigates the function of hedges and boosters in patent abstracts in four languages (Chinese, Spanish, French and English) and four fields (medicine, chemistry, telecommunications and IT), the study reveals that boosters and hedges are both rhetorical strategies to convince the readers of the usefulness of the invention, and they are rhetorical devices for modifying tone in the patent abstract genre.

Although these studies have undoubtedly provided a preliminary understanding of patents, the focus is on patents produced in different languages apart from Arabic such as Chinese, Spanish, French and English. Information on how these markers are employed in Arabic patent abstracts to raise drafters' awareness of what makes acceptable patent abstracts is scanty. This study, thus, aims to achieve the following objectives:

1- To identify the predominate interactional metadiscourse markers in Arabic patent abstracts written by native Arabic drafters.
2- To explain how metadiscourse markers function in Arabic patent abstracts.

Methodology

Data Collection

This study is a descriptive study which aims to examine the use of metadiscourse in Arabic patent abstracts both qualitatively and quantitatively. Sixty Arabic Patents drafted during the years 2008-2018 by native Arabic drafters in the field of human necessity were selected. This discipline was chosen since it is of interest to different patent readers as it includes patents related to social life and covers the following subsections: agriculture, foodstuffs, tobacco, personal or domestic articles, health, life savings and amusement. A decision was made to choose abstracts from a single discipline since it has been confirmed that different disciplines have their own writing conventions (Anthony,1999; Samraj, 2002, 2004). The Arabic patents are retrieved from the Gulf Cooperation Council Patent Office (GCCPO) website (https://www.gccpo.org) which is the only website that represents a regional Arab patent office at the time of research. These patents are considered standard and accepted ones because they are the final revised versions officially published in the website. To create a corpus, the *abstracts of* these patents were copied and pasted onto a separate file. Then they were randomly coded and classified according to the year of publication. Only abstracts drafted by native Arabic drafters were picked up from the identified discipline. In cases where abstracts written by more than one drafter, it was assured that all drafters share similar nationality and language backgrounds. This criterion was essential in order to keep to a minimum the rhetorical influence from other languages on those of the Arabic patents. Evidence was gathered from short biodata entries such as the name and affiliation of the drafters since drafters with Arab names are likely to be Arabic native speakers. The number of words used in each abstract ranged from 50 to 200 words. The total number of words for the present study of patent abstracts consists of 7,045 words. The size of corpus should be considered carefully. This small-sized corpus can be assumed, to a certain extent, to be sufficient since it complies with Aragonés (2009) study in which a similar number of corpus was chosen in order to validate the findings across four languages. More specifically, the size of this corpus is sufficient since a manual examination is performed. Generally, the smallest number of abstracts to be valid is about 30 (Stollera, 2013).

Data Analysis

Before analyzing each patent's Abstract section, the whole patent was read several times in order to get a rough understanding of the proposed invention. The types of Arabic IMDMs in the selected patents were investigated in terms of frequency, forms and functions. It is worth noting that both Hyland's *Interpersonal Model of Metadiscourse* and previous literature on IMDMs in Arabic context (e.g., Abbas, 2011; El-Seidi; 2000; Taweel et al., 2011) have been consulted to help in the process of IMDMs identification. Additionally, each IMDMs was identified and counted manually as Hyland(2005) points out that "metadiscourse is a relative concept so what might be metadiscourse in one rhetorical context may be expressing propositional material in another, and analysis must always examine each item individually to determine its function" (p. 24). Therefore, each marker was double checked carefully in context to make sure it functioned as a metadiscourse marker. After identifying and classifying the metadiscourse markers, a quantitative analysis was conducted. The main focus of this quantitative analysis is on type, frequency, and form of these markers. The information obtained from the quantitative analysis is essential for the qualitative analysis to examine the function of each interactional metadiscourse category to reveal the persuasive effect of these markers.

Results and Discussion

Frequency of Use of the Different Categories of Interactional Metadiscourse

Table 2 shows the type, frequency and percentage of each interactional metadiscourse markers employed in the abstract section of Arabic patents in the field of human necessity. As the size of the Arabic abstracts is definitely unequal, the frequency of IMDMs was calculated per 1000 words in order to make the length of the abstracts consistent and to ensure accurate comparison between the IMDMs.

Table 2 *Frequency and Percentage of IMDMs in Arabic Patent Abstracts*

Interactional metadiscourse type	frequency	Percentage
Boosters	376	53.37%
Hedges	300	42.58%
Attitude markers	74	11%
Self-mentions	13	2%
Engagement markers	0	0%
Total number of occurrences:	763	

Table 2 indicates that Arabic patent drafters do use IMDMs while drafting their patent abstracts to show their attitudes in the texts and engage with readers, through the employment of hedges, boosters, attitude markers and self-mention, which Hyland (2005,p.177) referred to as "stance markers". According to the statistical analysis presented in Table 2, boosters are the most frequently used IMDMs in the present corpus (53.37%). This suggests that Arabic patent drafters resort to emphasize on what they have invented with certainty to persuade readers of the

importance of their invention. Likewise, hedges, which are used to express the writers' uncertainty, have also shown to be essential elements used in the Arabic patent abstracts with 300 instances (42.58%). Attitude markers are very uncommon in the present corpus with only 11%, while the type of self-mentions (2%) is the least common markers among all categories. The most remarkable result is the absence of engagement markers. Their absence may signal that Arabic native drafters tend to avoid explicit engagement with the reader as this may indicate a conversational and an informal tone. Their absence is consistence with Alotaibi's (2015) findings who finds that engagement markers are absent in Arabic research articles. Sultan(2011) also finds that they are the least interactional metadiscourse marker within Arabic discussions.

Forms and Functions of Interactional Metadiscourse Use

In this section, each subcategory of IMDMs will be discussed in terms of lexical forms and function in order to reveal the persuasive effect of these markers within Arabic patent abstracts.

Boosters

As indicated earlier, boosters dominate among all the IMDMs categories analyzed in the Arabic patent abstracts. It includes slightly over 53% of the total markers identified in the corpus (see Table 2). These quantitative results are in line with other studies where Arabic boosters are found to be predominate, irrespective of the genre and the discipline analyzed. Boosting constitutes an essential characteristic of Arabic academic discourse in college essays (Alhumidi,2016), newspaper articles (Abdelmoneim, 2009; Al-Ghoweri, 2019), or argumentative texts (El-Seidi, 2000), where strong emphatics and assertiveness are highly valued.

As Hyland (1994) asserts, boosting can be conveyed across different syntactic frames such as modals, verbs and adverbials. In this research, nouns such as ضمان, تحسين, قضاء and adverbs such as بسهولة, خاصة are the most popular grammatical items utilized to boost inventions. Boosting nouns are mainly employed to praise the current invention and they are associated with certainty. This finding is consistent with Arinas-Pellón & Sancho-Guinda (2010) who note that nouns such as *advantage*, *solution*, *efficiency* and *improvement* are mostly noticed as boosting devices in U.S patents from various technical fields. This study also confirms the tendency of Arabic native drafters to extensively use these nouns to emphasize the usefulness of their invention. Findings of this study reveal that Arabic native drafters employ boosters for different purposes including justifying the usefulness of their invention as well as presenting its merits in a strong positive light(Example 1) and providing a more assertive tone in explaining the utility of the invention (Example 2).

1- الاختراع المطروح يحاول **التغلب** على الأضرار التي تلحق بغير المدخنين لظروف وجودهم مع المدخنين ولم يحاول **التغلب** على ضرر الدخان على المجتمع وا فإن الاختراع المطروح يساعد على **القضاء** على الأضرار الناتجة عن التدخين بشكل وسط ا.

2- يركب الوقي على المرحاض ويثبت على أرضية الحمام ويتيسر لكل شخص عملية التركيب والفك **بسهولة**

Hedges

Hedges are functionally the counterparts of boosters since they indicate the uncertain evaluation of the truth of the informational content. As indicated in Table 2, hedges are one of the most commonly used IMDMs in this study. They constitute slightly over 42% of the total IMDMs examined in this research. This is due to the importance of hedges that signal the writer's preference to withhold overall commitment to a proposition. The results reveal that some specific types of hedges are most commonly employed by native Arabic drafters such as approximators عدد تقريبا, احيانا and modals, قد يمكن to convince readers about the value of the proposed invention. This finding is in agreement with Al-Ghoweri's(2019) study which reveals that approximates of degree, quantity and frequency are the most commonly used hedging devices across Arabic articles. Similarly, in Arinas-Pellón's (2010) corpus of electro-mechanical patents, vague quantifications of *many, most, several* or *certain* are found as one of the common categories to express tentativeness too.

Hedges in the present research are used to provide data in a truthful manner and to avoid commitment to precise figures (Example 3) and to indicate probability while indicating that the drafter's statement is not to be taken universally true. This means that readers, due to the influence of such probability, are left to evaluate the information provided (Example 4).

3- وهذا الاختراع هو عبارة عن قارورة تصنع من البلاستيك القوي والمرن له تجويف مقطره 20سم تقريبا.
4- يعتمد الاختراع الحالي على امرار تيار هواء فلتر أو حار نسبيا على المواد المراد تجفيفها واخراجه من موضع اخر قد يكون مكبس له حتى يتم التجفيف ويتألف الجهاز من حاوية للمواد المراد تجفيفها ومصدر لدخول الهواء الساخن ومصدر اخر لخروج الهواء قد يكون مكبس لحصر دخول الهواء مما يسمح بالتجفيف بفعالية وسرعة.

Attitude Markers

Attitude markers "indicate the writer's affective, rather than epistemic, attitudes, encoding an explicit positive or negative value that is gradable (e.g. important/very important to propositions" (Hyland, 2005, p.149). Because of its persuasive aim, the style of patent abstracts genre is characterized by evaluative function. This means that it employs linguistic devices that express the drafter's stance towards the invention s/he presents as well as establish interactional relations with his/her readers. Identifying the attitude markers of the Arabic patent abstracts reveals that unlike boosters and hedges, Arabic native drafters utilize limited lexicons to express their attitudes. They represent 11% of IMDMs in the corpus. The low frequency of attitude markers is similarly found in related studies in literature (see e.g., Sultan, 2011; El-Seidi, 2000; &Alotaibi, 2015)which indicat that the employment of attitude markers is low among Arabic texts. The possible reasons might be due to the nature of the abstract section where drafters are not too certain in presenting their stance nor too critical in providing information.

Although the occurrence of use of *attitude markers* is low, some attitudinal adjectives and adverbs such as *جيد, سهل* and *فعالية* are common in Arabic patent abstracts. The interaction achieved

in Example 5 is conveyed by utilizing the attitude adjective جديد which can be considered an affective strategy to persuade the reader of the novelty of the invention. Similarly, the attitude marker متميز *unique* here expresses the drafters' own personal assessment, that is, this invention is really rewarding and deserves being patent.

5- فهو نوع جديد وشكله جذاب ومتميز ليس له شبيه و في جميع ا من حيث الجودة والشكل والتصنيع.

Overall, Arabic patent abstracts appear to make use of limited range of attitude markers to provide readers with an opportunity to understand the propositional content and to present their attitude towards the informational contents of their texts. Accordingly, attitude markers are important in persuasive writing "otherwise a text would be dry and impersonal" (Heng &Tan, 2010, p.139). These findings might be comparable to Arinas-Pellón's (2010) study which reveals that attitude markers are used in US patents for persuasive values, yet with a preference of different lexical markers.

Self-Mention

Hyland(2005) states that self-mentions refer "to the degree of explicit author presence in the text measured by the frequency of first-person pronouns and possessive adjectives" (p.53). As for the present study, 13 instances are utilized by Arabic patent drafters. They represent two percent (2%) of IMDMs found in the corpus. Apparently, they cannot be considered as an essential rhetorical strategy for establishing stance for the patent drafters in concern. This finding is in agreement with the findings of other studies investigating self-mention across different genres or disciplines (e.g. Al-harbi & Swales, 2011; Sultan, 2011; Alotaibi, 2015) which reveal a limited number of self-mention in Arabic texts written by Arabic native writers. These findings altogether show the tendency among native Arabic-speaking writers to avoid self-mentions whether they are writing in their first language or in English. Similarly, this finding is consistent with existing research on patents within different languages. Arinas-Pellón (2014) for example, argues that U.S patents are not characterized by self-mention since the focus is on the invention not the inventor.

However, a close investigation of the forms of self-mentions in the present corpus shows that self-mentions are mainly utilized to state patent utility and offer readers a clear picture of what the invention will cover and what they can obtain from it:

6- وهو يقلل من الكثير من الحرائق التي تقع بأماكن مرتفعة كما انه يختصر عدد راد وك مما يضاف إلى أنه يساعد الطفايين
بالبعد عن حرارة النار وذلك من للتحكم عن بعد بطريقتنا

It is essential to note that all the instances of self- mentions in the present corpus are only in the form of plural possessive pronouns even in single-authored patents. It seems that Arabic

patent drafters tend to use the pronoun انا" our" to avoid addressing their readers directly and make their patents more objective in order to avoid criticism and being rejected.

As for the category engagement markers, their absence suggests that there is no place for the drafters to interact directly with their readers or engaging them in the patent abstracts. The absence of engagement markers in the abstract sections is in line with existing research(see e.g. Sultan, 2011 & Alotaibi, 2015) which reveal that engagement markers are to be the least employed IMDMs or even absent in Arabic abstracts written by native Arabic writers "as they may indicate a conversational and an informal tone"(Alotaibi, 2015, p.8).

Conclusion

The present study analyzed Arabic patent abstracts written by native Arabic drafters. Based on Hyland's (2005) taxonomy. The analysis reveals that boosters and hedges are the most frequent IMDMs within Arabic patent abstracts. Arabic patent drafters utilize boosters to assert on what they have invented with certainty in order to persuade readers of the importance of their invention. Hedges, on the other hand, are mainly used to convince readers about the value of the proposed invention as well as providing readers with the possibility of accepting or rejecting the invention. Unlike boosters and hedges, Arabic native drafters utilize limited lexicons to express their attitudes. However, they prove to be a persuasive device in the present study. They are strengthening expressions alongside boosters (Dafouz-Milne, 2008). Given the relatively high number of boosters and hedges found in the present corpus. It can be concluded that the skillful combination of strengthen expressions(i.e. boosters) and weakening ones(i.e. hedges) is the key to produce a persuasive acceptable patents in the eyes of the reader. According to Dafouz-Milne (2008), the final goal of a persuasive text should be to create "a discourse that is neither too assertive nor too vague"(p. 108).

In relation to the categories of self-mention and engagement markers, it is again clear that they are scarcely employed by the drafters; it was even observed that engagement markers are absent in the Arabic patent abstracts. The little use of self-mentions indicates that Arabic native drafters in general consider boosters, hedges, and attitudinal markers as more useful persuasive devices, when they create their patent abstracts. The low frequency of this IMDMs also indicates that drafters of the Arabic patent abstracts prefer to focus on the invention instead of making references to the inventors.

In summary, this study indicates that Arabic patent abstracts are a persuasive genre representing an interaction between drafters and readers. They employ various metadiscourse markers to reach their persuasive function since the communicative function of these abstracts is to summarize the invention and most importantly, to persuade readers of the usefulness of an invention. Through the use of boosters, hedges and attitude markers, patent drafters try to obtain a

balance between convincing and informing as well as building a reader-writer relationship to interact with their expected readers. While the remaining categories (i.e. self-mentions and engagement markers) show a low frequency of occurrence. Therefore, they could not be considered as effective persuasive tools within Arabic patent abstracts.

This study examined the use of IMDMs within Arabic patent abstracts written by native Arabic drafters in the field of human necessity; it was conducted on a small corpus. Therefore, further research with a larger corpus size and on other sections of patents should be conducted in order to offer a clear picture of the use of such rhetorical metadiscourse features. Furthermore, patent abstracts written by native Arabic drafters across different disciplines can be compared to examine whether the rhetorical features examined in this study can be extended to other disciplines as well.

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