МАТЕРИАЛЫ И СООБЩЕНИЯ

INTERACTIONAL METADISCOURSE MARKERS IN SCIENTIFIC TEXTS
(BASED ON RESEARCH ARTICLES
WRITTEN BY NATIVE AND NON-NATIVE SPEAKERS)

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Abstract. The present research investigated textual representations of writer-reader interaction in academic writing. The focus of the study was on the use of metadiscourse markers, i.e., stance and engagement markers, in applied linguistics research articles (RAs) published in English and Persian, the former written by Persian and English-speaking researchers, and the latter by Persian-speaking researchers. A cross-cultural analysis of RAs revealed similarities and differences in how academic writers express their stance and interact with their readers. Among the stance markers, hedging devices were found to be more frequently used in English RAs for expressing the authors' position, regardless of their native language. Persian RAs, on the other hand, predominantly used attitude markers for that purpose. In terms of the engagement markers, directives were the most prominent linguistic features employed by the writers in their native language. However, they were significantly less frequent in English RAs written by Iranian scholars. Compared to native English writers, Iranian writers showed a slightly stronger tendency to use reader pronouns and personal asides in their native language. This study reinforces the impact of the writers' linguistic and contextual awareness of the first- and second-language academic discourse conventions on the establishment of a successful writer-reader interaction and effective communication of arguments in academic writing.

Key words: metadiscourse, academic writing, research article, academic discourse, writer, reader, English, Persian.

МЕТАДИСКУРСИВНЫЕ МАРКЕРЫ ОТНОШЕНИЯ
«ОТПРАВИТЕЛЬ – РЕЦИПИЕНТ» В НАУЧНОМ ТЕКСТЕ
(НА МАТЕРИАЛЕ НАУЧНЫХ СТАТЕЙ НОСИТЕЛЕЙ И НЕНОСИТЕЛЕЙ ЯЗЫКА)

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Аннотация. Статья посвящена изучению текстовых репрезентаций интенций отправителя по отношению к получателю научного текста. Материалом для работы послужили научные статьи по прикладной лингвистике, написанные носителями английского языка и иранскими англоговорящими авторами, а также

научные статьи на персидском языке, написанные иранскими авторами. Цель исследования заключалась в выявлении метадискурсивных маркеров позиции автора научной статьи и его обращенности к читателю. В результате кросс-культурного анализа научных публикаций на персидском и английском языках установлены сходства и различия в выражении авторской позиции и взаимодействии с читателями. Определено, что для указания на свою позицию по обсуждаемым вопросам англоязычными авторами-носителями языка и иранскими учеными в англоязычных статьях чаще используются средства хеджирования. В научных статьях на персидском языке с этой целью в основном используются средства, выражающие обращение автора публикации к потенциальному читателю. Показано, что привлечение внимания читателя осуществляется авторами научных статей, созданных на их родном языке, посредством директивов. Кроме того, иранскими учеными в статьях на персидском языке часто употребляются личные местоимения, называющие адресата. Проведенное исследование подтверждает важность владения иностранным языком, в частности английским, для успешного взаимодействия между автором и реципиентом научной статьи, а также для адекватного выражения авторской позиции и вербализации авторской аргументации.

Ключевые слова: метадискурс, академическое письмо, научная статья, научный дискурс, адресат, адресант, английский язык, персидский язык.

Introduction

Writing has a critical role in the widespread dissemination of knowledge and information in academia; the academic contributions are presented and communicated through research and publication. Research articles (hereinafter RAs) have thus received significant attention in the studies of academic writing during the past decades. These studies are conducted on the grounds of substantiating quality research publication since, as noted by Hyland, it is the discipline-approved social and interactive practices, "not abstract and disengaged beliefs and theories that principally define what disciplines are" [Hyland, 2018, p. 113]; that is to say, successful academic writing is as much achieved by the proper linguistic choices as it is by the quality of content. Academic writers make conscious semantic and syntactic choices to communicate their standpoint effectively and bring the readers into their research. By asserting solidarity with their audience, assessing their writing production, and taking alternative perspectives into consideration, academic writers establish a credible identity, represent themselves, engage their readers, and express their arguments [Hyland, 2001; Yang, 2014].

In the past few decades, the focus of research in academic discourse has shifted from structural to sociocultural aspects; hence more interest in the establishment of writer-reader relationships and the writers' linguistic skills to negotiate meaning and propose their arguments in the scientific community. Much research has been carried out in academic discourse, concentrating on its interactive dimension in light of interpersonal, rather than impersonal and ideational, communication (e.g.: [Candlin, Hyland, 2014; Fløttum, Kinn, Dahl, 2006; Hyland, 2000; 2005; 2015; 2019; Schiffrin, 1980; Thompson, Hunston, 2001; Vande Kopple, 1985; White, 2003]). The interaction in academic discourse can be achieved by the writers adopting a standpoint with the consideration of both the arguments and the readers who are of opinion on those arguments [Hyland, 2015]. Metadiscourse deliberates on interpersonal devices (*obviously*, *it is essential to note*) used in the text to establish interactive meanings. However, these linguistic features do not contribute to the propositional content and semantic meaning of the text; they rather assist the audience to construe and evaluate information [Crismore, Markkanen, Steffensen, 1993]. Therefore, the linguistic functions of metadiscourse can be deduced to be textual and interpersonal, not ideational [Halliday, 1973].

In the age of globalization, English is regarded as the universal bridge language in academia. With the growing number of non-native speakers of English, increasingly more research has been conducted on English writing skills and strategies for academic and research purposes. Previous research has indicated the lack of skills

in academic writing to be a formidable obstacle for non-native writers in the professional, perhaps due to the lack of comprehensive preparations for academic writing [Cargill, O'Connor, 2013; Leki, Carson, 1997]. Making anticipations about the potential rebuttals and approvals of the audience is a pivotal factor in creating interactions and thus communicating arguments more effectively in RAs.

The rapid progress of science and subsequently academic publications gave rise to the amount of research dedicated to the assessment of interactions in academic writing. The theoretical foundation of writer-reader interaction was laid by Halliday [1978; 1985], who proposed three macro-functions for language: ideational, interpersonal, and textual. Based on this classification, Vande Kopple [1985] identified distinctions between the interpersonal and textual functions and the ideational function, postulating the functionality of the former to be in metadiscourse, and develop interaction, and of the latter to be in the primary discourse of the language. Focusing on metadiscourse features, Hyland [1994] studied hedging in academic textbooks and demonstrated that hedging devices reduce writers' commitments to their propositions – a linguistic competence not held by many novice writers. Abdi [2002], using Vande Kopple's [1985] framework, analyzed the interpersonal metadiscourse features in English RAs published in natural and social science journals and found an approximately equal use of emphatics and hedges. Jalilifar [2011] investigated English and Persian RAs in psychiatry and Teaching English as a Foreign Language (TEFL). The results of their study indicated significant variations in the frequency, type, and function of metadiscourse markers between the two sets of RAs. Sultan [2011] examined linguistics RAs in Arabic and English and found an exaggerated inclination among Arab writers to use metadiscourse markers. In his study, Akbas [2014] found that Turkish writers made more use of metadiscourse resources in the RAs written in Turkish compared to the ones written in English.

Hyland proposed a framework of interactions in academic discourse, constituting two primary resources: stance and engagement. He postulated that writers form interactions in academic discourse using stance and engagement

markers (hereinafter SEMs) – the former referring to the 'voice' of the writers, that is, their attitude towards presenting their arguments and judgments, and the latter indicating the way writers connect with their readers, making them engaged with their arguments while "including them as discourse participants, and guiding them to interpretations" [Hyland, 2005, p. 176]. According to him, this interaction helps the success of RAs and the acknowledgment of writers in the related academic communities. Hyland [2005] subcategorized the stance markers into four linguistic features (hedges, boosters, attitude markers, and self-mentions), and the engagement markers into five linguistic features (reader pronouns, directives, appeals to shared knowledge, questions, and personal asides). The subcategories of SEMs are elaborated in the following sections. Using Hyland's [2005] model of academic interaction, Taki and Jafarpour [2012] investigated Persian and English RAs in two disciplines of chemistry and sociology. Their findings indicated a stronger tendency among sociologists to interact with their readers. A more recent study based on this framework was that of Alghazo, Al Salem, and Alrashdan [2021] which indicated less use of hedges and engagement markers by Arabic writers compared to their English counterparts.

Amongst different sections of RAs, discussion is considered to be the most far-reaching and the most challenging part to produce [Basturkmen, 2012; Dudley-Evans, 1994], in which the writers communicate their arguments and establish the importance and contribution of their research findings [Le, Harrington, 2015; Ruiying, Allison, 2003]. Much research has been conducted on RAs discussions, however, mainly to examine the cross-linguistic and cross-disciplinary variations of their generic structures (e.g.: [Hirano, 2009; Hopkins, Dudley-Evans, 1988; Mur Duecas, 2009; Peacock, 2002; Ruiying, Allison, 2003]). Little research evidence is available about comparative, cross-linguistic, and cross-cultural studies to investigate the employment of SEMs in the Discussion sections of applied linguistics RAs written by native English speakers (hereinafter NES) and native Persian speakers (hereinafter NPS).

Considering the above gap in previous research, the present study aimed to investigate similarities and differences in the employment of

SEMs in terms of their frequency and type, using Hyland's [2005] framework, between the Discussions in applied linguistics RAs written in English by NES and NPS, as well as Persian RAs written by NPS. Additionally, attempts were made to analyze significant features from a sociocultural and contextual perspective. The results of this study are expected to have practical implications in the study of textual representation, academic argumentation, and publication of scientific texts by native and non-native English speakers.

Methodology

Data collection

The data for the present corpus-based comparative study consisted of a collection of 75 RAs in the field of applied linguistics published during the eight-year period of 2012 through 2020: 25 English RAs written by native English speakers (ENES), selected from international journals; 25 English RAs written by native Persian speakers (ENPS), selected from Iranian journals; 25 Persian RAs written by native Persian speakers (PNPS), selected from Iranian journals. The selection of Iranian journals was based on their national ranking assessed by the Ministry of Science, Research and Technology in Iran. The PNPS corpus was selected from the following top-ranking peer-reviewed local Iranian journals: *Journal of Language Research, Language Related Research, Journal of Foreign Language Research, Journal of Researches in Linguistics, Journal of Teaching Persian to Speakers of Other Languages*. The ENPS corpus was selected from the following top-ranking peer-reviewed local and international Iranian journals: *Journal of Research in Applied Linguistics, Iranian Journal of Applied Language Studies, Iranian Journal of Language Teaching Research, Journal of Modern Research in English Language Studies, Applied Research on English*

Language. The selection of international journals was based on their SCImago Journal Rank indicator as of 2020. The ENES corpus was selected from the following first quartile (Q1) journals: *Applied Linguistics, Journal of English for Academic Purposes, Language Learning & Technology, Language Teaching Research, The Modern Language Journal*.

The RAs were restricted to empirical studies, which conformed with the IMRDC (Introduction-Method-Results-Discussion-Conclusion) standard. The nationality of authors was judged by the authors' names, when in doubt an online search for their nationality was conducted. In case of uncertainty, the article was ignored. On the occasion that NES and NPS had co-authored with international scholars (other nationalities), the RAs were not selected. To ensure an unbiased sample, simple random sampling was employed. Table 1 presents a summary of the corpora.

Data analysis

To investigate SEMs in RAs discussions, a mixed-method approach including both quantitative and qualitative methods of analysis was employed – the former was used for the analysis of the frequency of occurrence of each feature in the corpora, and the latter was applied to scrutinize the content, find SEMs, and verify their functions. For the identification of SEMs in the corpora, Hyland's [2005] model of interaction in academic discourse was employed (see Fig. 1).

For quantitative analysis of the findings, the total number of effective words was calculated in the corpora. For an accurate calculation of effective words, all the digits and symbols, as well as the non-English words in the English RAs and non-Persian words in the Persian RAs, were removed from the discussions. Given the unequal number of words in the corpora, the frequency counts of SEMs were normalized to 1000 words. To analyze the data, initially, the datasets were

Table 1. **Summary of the corpora**

Corpus	Language of RA	Writer's first language	Number of RAs	Number of journals	Number of words
ENES	English	English	25	5	33425
ENPS	English	Persian	25	5	29724
PNPS	Persian	Persian	25	5	37641

studied for all the possible linguistic features that equated with SEMs. Accordingly, a list of such linguistic features was created for the Persian and English RAs. Using the lists created, the three corpora were analyzed for the occurrence of SEMs through a concordance program, i.e., *AntConc* [Anthony, 2020]. In addition to computer analysis, all the Discussions were carefully read by the researcher to investigate the implicit instances of SEMs. Even though writers can express their standpoint explicitly using lexical devices, as noted by Hyland [2005], it is also possible for them to do that in a less obvious manner through grammatical constructions such as subordination, contrast, and conjunction. Finally, the frequency of occurrence of SEMs was calculated in the three datasets.

Reliability measures

To establish the reliability of the results, the three corpora were analyzed and coded on two occasions within a one month interval. The intra-rater reliability was measured using Cohen's kappa test for each corpus, both of which were calculated to be above 0.95.

Results and discussion

In this section, the linguistic features employed by the academic writers to express their stance and engage the readers are descriptively analyzed. According to Hyland's [2005] framework, there are four key resources by which the writers' stance is realized: *hedges*, which indicate the writers' decision not to fully commit to their propositions; *boosters*, through which writers express their certainty and maintain their solidarity with their readers; *attitude markers*, which are used to show the writers' emotions such as surprise, agreement, frustration, etc.; *self-*

mention, which refers to the use of first-person pronouns or possessive adjectives by the writers to present their discoursal selves and convey interpersonal information. In addition, writers bring readers into the discourse and engage them through five main linguistic elements: *reader pronouns*, including *you*, *your*, as well as the inclusive *we* which sends a "signal of membership" to both the writer and the reader; *directives*, through which they instruct the reader to perform a textual (*see Table 2*), cognitive (*consider it*), or physical (*set the amplitude*) activity; *questions*, which are used to create a dialogue and lead the discussion; *appeals to shared knowledge*, which asserts the notion of shared disciplinary understanding; *personal asides*, through which writers briefly interrupt their argument to offer a view or comment (see Fig. 1). Below are some examples of SEMs found in RAs discussions (Persian examples are literally translated):

(1) Furthermore, the interview findings **suggest** that students in search of a proofreader **may** seek a referral or search online for a proofreader only if they do not already know someone willing to proofread their writing (Hedging – ENES);

(2) **Evidently**, the prevalence of second-person pronouns held a **significant** measurable capacity to predict GMTQ (Booster – ENES);

(3) **Hopefully**, mastering integrated reflective skills in teacher education courses can help EFL teachers to form a productive version of language teacher immunity (Attitude marker – ENPS);

(4) **We** suggest that the source of this problem could be morphological feature combination... (Self-mention – ENPS);

(5) Indeed, it could be the case of not seeing the trees for the forest, in which **you** get the main idea and do not see the small details, such as the vocabulary (Reader pronoun – ENPS);

(6) Then the key question is what are they showing a formulaic advantage to – is this actually authentic language**?** (Question – ENES);
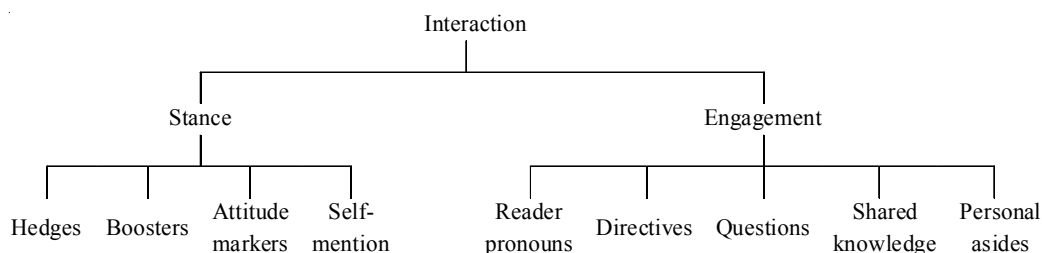

Fig. 1. Hyland's (2005) model of academic interaction

در اسـتفاده از نتایـج ایـن پژوهـش، سـطح توانایـی زبانـی (7)
دانش‌آموزان را نیز **باید در نظر گرفت.**

'In using the results of this research, the level of the students' language ability **should** also **be considered**' (Directive – PNPS);

میدانیـــم کـــه شـــمار قابـــل توجهـــی دانشـــجوی غیـــر (8)
فارسـی‌زبان در دانشـگاه‌های کشـور بــه تحصیــل علــوم
گوناگون مشغولند.

'**We know that** a significant number of non-Persian language students are studying various sciences in the universities of the country' (Shared knowledge – PNPS);

تنهــا مولفه‌هــای موســیقایی متــن (**کــه بخشـــی از** (9)
سطح ادبی آن را شکل میدهند) مد نظر بوده...

'Only the musical components of the text (**which form part of its literary level**) have been considered' (Personal aside – PNPS).

Corpus-based analysis of SEMs

The raw and normalized frequencies of SEMs through which NES interacted with their readers are presented in Table 2. As illustrated, hedges were the most frequent stance features in this corpus, followed by boosters and, slightly less frequently, attitude markers. These findings are in line with that of Hyland [2005]. However, there is a slight difference with the findings of Hyland [2019] which has studied the metadiscourse in the applied linguistics RAs. In his research, hedges – as the most frequent stance

markers across the RAs, were followed by attitude markers and subsequently boosters, in terms of their normalized frequency. As for the engagement markers, the current analysis revealed that NES were more inclined to engage their readers by directing them to get involved in textual and cognitive activities. Even though used considerably less often, reader pronouns were the second most frequent engagement markers employed by NES. Further analysis revealed that they primarily used inclusive *we* to voice solidarity with their readers. This finding is in line with that of Kochetova and Kononova [2018], who indicated that English speakers used inclusive *we* "to construe solidarity based on common background, shared beliefs and opinions" (as cited in: [Kochetova, Ilyinova, 2020, p. 29]).

Table 3 presents the raw and normalized frequencies of SEMs across the ENPS corpus (English articles written by Iranian scholars). It can be seen that similar to NES, Iranian scholars, NPS, utilized hedging devices markedly more than other stance markers and were the least inclined to use self-mentions. With regard to the engagement markers, it was observed that the directives and reader pronouns were the most frequent engagement markers used by NPS in English RAs. Nevertheless, it is important to note the overall low frequency of these markers across the corpus. Previous research has shown that the

Table 2. **Stance and engagement markers in the ENES corpus**

Stance	f	$\%f$	$f_{/1000}$	Engagement	f	$\%f$	$f_{/1000}$
Hedges	575	54.50	17.20	Reader pronouns	15	20.83	0.45
Boosters	175	16.59	5.24	Directives	39	54.17	1.17
Attitude markers	167	15.83	5.00	Questions	2	2.78	0.06
Self-mentions	138	13.08	4.13	Shared knowledge	12	16.67	0.36
				Personal asides	4	5.56	0.12
Totals	1055	100.00	31.56	*Totals*	72	100.00	2.15

Note. Tables 2 to 4 use the following symbols: f = raw frequency; $\%f$ = percentage of frequency per category; $f_{/1000}$ = frequency per 1000 words.

Table 3. **Stance and engagement markers in the ENPS corpus**

Stance	f	$\%f$	$f_{/1000}$	Engagement	f	$\%f$	$f_{/1000}$
Hedges	242	51.84	8.15	Reader pronouns	14	41.67	0.46
Boosters	107	22.90	3.60	Directives	12	37.50	0.41
Attitude markers	76	16.27	2.56	Questions	0	0.00	0.00
Self-mentions	42	8.99	1.41	Shared knowledge	3	8.33	0.09
				Personal asides	4	12.50	0.14
Totals	467	100.00	15.72	*Totals*	33	100.00	1.10

inclination of Iranian scholars toward using engagement markers may depend on the academic discipline. A case in point is Ansarin and Tarlani Aliabdi [2011] who have reported similar findings in the applied linguistics RAs. Contrastingly, Ebadi, Salman Rawdhan, and Ebrahimi Marjal [2015] who have investigated RAs in the field of biology have found NES to use remarkably fewer engagement markers than Iranian writers in the English RAs.

The frequency details of SEMs in the PNPS corpus (Persian articles written by Iranian scholars), are tabulated in Table 4. The findings were indicative of the strong preference of NPS as to the use of attitude markers to express their stance in the Persian RAs. This finding supports previous research indicating attitude markers as the most frequent stance markers used by NPS in Persian RAs (e.g.: [Hashemi, Hosseini, 2019; Taki, Jafarpour, 2012]). As illustrated, NPS writers, primarily tended to direct their readers to engage mainly in textual (*pay attention to*) or cognitive (*it is important to consider*) activities.

The findings evidently demonstrate that NPS generally refrained from posing questions in Discussions. Previous research on argumentative articles has also shown no sign of questions as resources for engaging the readers [Yazdani, Sharifi, Elyassi, 2014]. Ansarin and Tarlani Aliabdi [2011] have also found questions to be the least frequently used linguistic features in their corpus of applied linguistics RAs.

Comparative analysis of SEMs in the corpora

Overall, the results indicated a substantially higher tendency amongst NES to use stance markers in order to put forward their arguments in applied linguistics RAs discussions (Fig. 2). It can be seen that, regardless of the language of RAs, compared to NES, Iranian scholars were less inclined to use these markers. Moreover, the results showed an approximate similarity between the overall use of stance markers by Iranian scholars in English and Persian RAs. This may

Table 4. **Stance and engagement markers in the PNPS corpus**

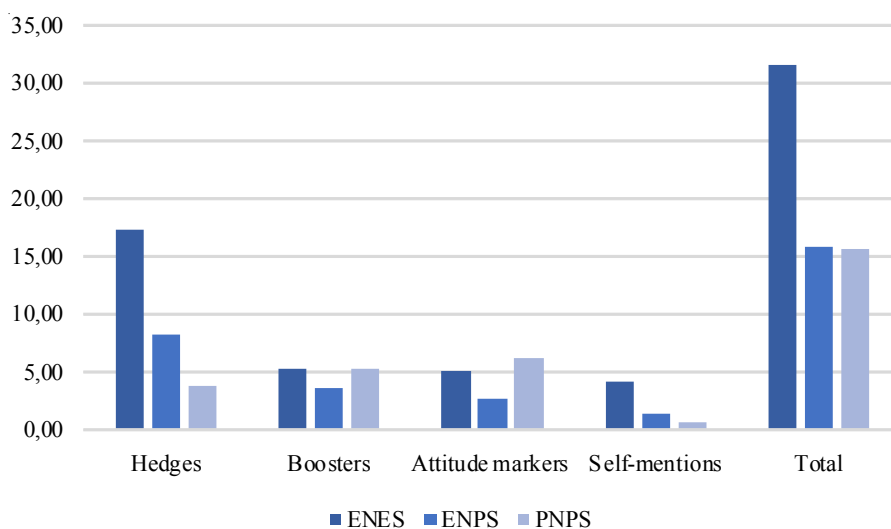| Stance	*f*	*%f*	*f/1000*	Engagement	*f*	*%f*	*f/1000*
Hedges	138	23.39	3.67	Reader pronouns	22	26.83	0.58
Boosters	197	33.39	5.23	Directives	42	51.22	1.12
Attitude markers	234	39.66	6.22	Questions	0	0.00	0.00
Self-mentions	21	3.56	0.56	Shared knowledge	10	12.20	0.27
				Personal asides	8	9.76	0.21
Totals	590	100.00	15.67	*Totals*	82	100.00	2.18

Fig. 2. Frequency of stance markers across the three corpora per 1000 words

reflect the influence of the discoursal patterns typical to the writers' first language on their academic writing, irrespective of the language of composition. Previous studies have also found cultural and contextual conventions to be impactful on the written product of Iranian researchers (e.g.: [Marefat, Mohammadzadeh, 2013; Tahririan, Jalilifar, 2004]). Moreover, Zhang [2018] has identified past writing experiences, as well as writing strategies in the first and second language to be influential factors in second language writing.

The use of hedges in the English RAs, both ENES and ENPS, is a case in point for the effect of writing strategies in a given language, both as the writer's first and second language, on the style of writing in that language. As can be seen, hedging devices were the most frequently used stance markers across the English RAs, both by native and Iranian English speakers. This may be due to the English academic writing conventions which expect researchers to use hedging devices in order to address possible oppositions to their new claims and create a negotiating space [Hyland, 2019]. On the other hand, the findings indicated that Iranian scholars used hedges less frequently than attitude markers and boosters in Persian RAs. The low frequency of hedges in Persian RAs may be attributed to contextual conventions. In the Iranian context of scientific publication, writers are mainly expected to sound confident, rather than uncertain, about the results of the research; hence they may not feel the need to address the readers' refutation of their new claims. Undoubtedly, this hypothesis will require further

investigation from cultural and contextual perspectives.

With respect to the least frequent stance markers, as illustrated, academic writers in all the three corpora made the least use of self-mention to express their position in discussions. Nevertheless, it is evident that Iranian writers were significantly less inclined to mention themselves in the description of their arguments. With further analysis, it was observed that the passive voice in a detached impersonal style was more common in RAs written by Iranian scholars, irrespective of the language of writing (ENPS and PNPS corpora). This impersonalized approach to academic writing by Iranian writers has been also identified in other sections of RAs and dissertations by previous researchers. To name a few, Pourmohammdi and Kuhi [2016], Karimi, Maleki, and Farnia [2017], and Keshavarz and Kheirieh [2011] have found a significantly lower tendency among Iranian researchers, compared to their NES counterparts, to use self-mentions in the introduction and discussion sections of PhD dissertations, RA abstracts, and across the entire RAs, respectively.

The analysis revealed that Iranian writers had a stronger tendency to use engagement markers in Discussions written in their native language, i.e., PNPS, compared to the RAs written in their foreign language (see Fig. 3). The underlying reason for this issue may be, to some extent, the undeniable confidence and fluency of the writers in their native language, through which they can competently put forward their arguments
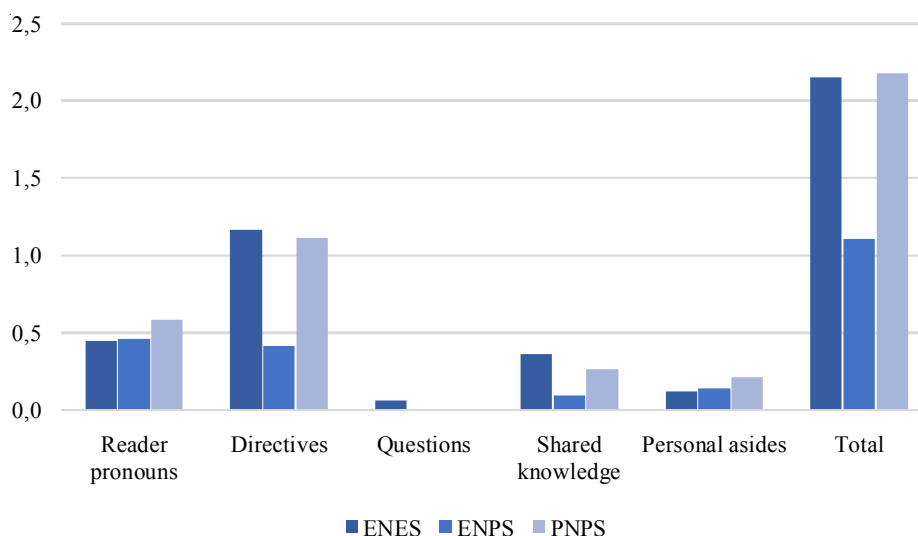
Fig. 3. Frequency of engagement markers across the three corpora per 1000 words

and hold the attention of their readers. This highlights the need for non-native writers to further familiarize themselves with the conventions and style of academic writing in English so that they can engage their readers just as effectively. In general, it can be seen that both NES and NPS used engagement markers in approximately the same proportion in their native languages. This finding is consistent with that of Esmaalizade and Sahraee [2015], who have found that, in a reverse situation, non-native Persian speakers have used engagement markers in RAs written in English notably more than in RAs written in Persian, their foreign language. Nonetheless, since their research has not specified whether non-native Persian speakers were NES, having a corpus of RAs written in Persian as a foreign language by NES would provide a more accurate comparison.

Furthermore, researchers were found to be more inclined to use directives in their native language, which may be due to the reasons discussed above. This is while NPS employed significantly fewer directives in ENPS discussions, even though it is the second most frequent engagement marker in the corpus. This finding is in line with the argument proposed earlier concerning the effect of language proficiency and academic writing competence on creating a writer-reader interaction in the second language. As illustrated, questions were noticeably the least common linguistic features used to raise readers' interests in all three corpora (see Fig. 3). The analysis showed that Iranian writers, regardless of the language of writing, refrained from posing any types of questions, including rhetorical, to engage their readers in Discussions. The findings lend support to previous research which has found questions to be the least frequent engagement markers in English and Persian RAs (e.g.: [Ansarin, Tarlani Aliabdi, 2011; Taki, Jafarpour, 2012]), as well as in other languages (e.g.: [Alghazo et al., 2021; Ma, 2021]).

The findings of the present research indicated both similarities and differences in the use of metadiscourse linguistic features (SEMs), among the three corpora. Regarding the stance markers, there were disagreements between the three sets of data in terms of the most predominant linguistic features employed by the writers to express their position. Both English corpora (ENES and ENPS), featured hedging devices,

whereas the Persian corpus indicated more significant use of attitude markers. Moreover, there were considerable differences in the use of self-mentions amongst the three corpora; ENES employed this linguistic feature remarkably more than the other two datasets (see Fig. 2). As for the engagement markers, it was observed that the RAs written in the writers' native language (ENES and PNPS), made significantly featured directives to engage readers, while the RAs written by non-native speakers (ENPS), showed the tendency of writers to refer to their readers in order to raise their attention (see Fig. 3). The results of the study indicate the need for non-native academic writers to refrain from conveying the writing conventions and styles of their first language to their second-language writing product. Nonetheless, academic writing can be a challenging task for both native and non-native speakers of a language. As noted by Hyland and Milton [1997], the use of linguistic markers to express the agent's confidence presents a challenge to both native and non-native writers.

It is important to acknowledge some limitations in the current study to avoid over-generalization of the findings. The present research focused on English and Persian RAs in one academic discipline (applied linguistics), and analyzed SEMs in one section of published RAs (discussions). Future research may expand upon the inclusion of different academic disciplines and other sections of RAs. In addition, the ENPS and PNPS datasets in this study were restricted to RAs published in local journals. Future research into the locally and internationally published ENPS and PNPS RAs may give better insight into the potential contextual factors affecting the employment of SEMs in presenting arguments in discussions. Moreover, the generalizability of the findings can be increased by expanding the size of the datasets. Future research may study cross-linguistic and cross-cultural variations in the rhetorical structure and discoursal patterns of RAs discussions and investigate their connection with the use of metadiscourse features (SEMs). The present research noted the effect of first- and second-language writing conventions on the writing products. Future research may reinforce this notion by including a corpus of RAs written by NES in their second language. Furthermore, interviews can be conducted with the RAs

authors to carry out a comparative analysis on the impact of their educational background, whether they have been taught academic writing, cultural background, and other influential factors on the use of metadiscourse linguistic features to frame their arguments.

Conclusion

Writers employ a variety of linguistic features and devices in their discourse in order to create an academically convincing identity and maintain the writer – reader interaction, with stance and engagement serving as the main resources. The present comparative cross-cultural study was aimed to gain insight into the use of SEMs in English and Persian RAs discussions, the former written by NES and NPS, and the latter written by NPS; the frequency and type of SEMs within the corpora were compared and contrasted.

The findings of this study substantiate the notion that the articulation of arguments in academic writing remains subjected to contextual and sociocultural conventions of the first and second language. To elucidate, the difference in the use of hedging devices suggests that NES are significantly more inclined to weaken the illocutionary force of their statement and are more cautious about making claims, whereas NPS have a higher tendency to avoid uncertainty. Moreover, the higher employment of attitude markers by NPS indicates the affective attitude of Persian writers in making their utterances. This is while they demonstrated a wider acknowledgement of the readers in their native language, which signifies the importance of the writers' awareness and knowledge of the second language conventions for the construction of an effective and persuasive argument.

Based on the empirical findings, we can confidently assert the necessity of building appropriate strategies for achieving a successful writer-reader interaction through the deliberate use of a wide range of linguistic features (SEMs) in agreement with the conventions of the target language, context, and culture. The results of the present research are of practical significance in the areas of textual representation, academic argumentation, and publication of scientific texts. Publishing RAs in English is an academic imperative of the present age for non-native

English-speaking scholars seeking to protect and enhance their professional status. Hence, to ensure effective communication, it is essential to refrain from carrying over the writing conventions of the first language into the second language and be mindful of the metadiscoursal, contextual, and sociocultural variations.

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