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**An Intercultural Investigation of Meta-Discourse Features in Research Articles
by American and Turkish Academic Writers**

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ABSTRACT

This corpus-based study compares the use of hedges and boosters in English academic research articles by Turkish and American academic writers. The data come from 40 research articles collected from well-known international journals of Applied Linguistics. Quantitative and textual analyses reveal that the American academic writers preferred to be visible in their texts by employing a lot more hedges and boosters, while Turkish academic writers opted to be invisible, preferring their studies to speak for themselves. Our results indicate, among other things, the influence of rhetorical practices, and epistemological beliefs, and the cultural, linguistic, and educational backgrounds of academic writers on their use of hedges and boosters. The findings of the study are discussed in relation to these aspects.

Key Words: Academic writing, Research article, Metadiscourse, Hedge, Booster.

1. Introduction

This corpus-based quantitative study investigates the employment of hedges and boosters as metadiscourse markers in the research article (RA) from a comparative perspective. Often considered a fuzzy concept, metadiscourse has been defined by Vande Kopple as “discourse about discourse or communication about communication” (1985, p. 83), while Hyland describes it as consisting of “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). Central to Hyland’s (2005a) often-quoted definition of metadiscourse are the interactive and interactional roles of the writer. In recent years, scholars have paid ever-increasing attention to metadiscourse (e.g., Vande Kopple, 1985; Bazerman, 1988; Crismore, Markkanen, and Steffensen, 1993; Flowerdew, 1997; Hyland, 2005a) as well as report their findings objectively, metadiscourse has drawn ever-increasing attention in recent years (e.g., Vande Kopple, 1985; Mauranen, 1993; Bunton, 1999; Hyland, 1998b, 1999, 2005 a, b, 2017; Abdi, 2002; Dahl, 2004; Hyland and Tse, 2004; Lindeberg, 2004; Peterlin, 2005; Adel, 2006; Abdi et al., 2010; Gillaerts and Van de Velde, 2010; Del Saz Rubio, 2011; Mur Duennas, 2011; McGrath and Kuteeva, 2012; Khedri, Ebrahimi and Heng, 2013; Cao and Hu, 2014; Estaji and Vafaeimehr, 2015; Jiang, and Hyland, 2016, 2017), as

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they have come to recognize the crucial role that metadiscourse plays in the work of academic writers, who deploy a range of discursive strategies to organize their arguments, present proofs and persuade their readers (Vande Kopple, 1985; Bazerman, 1988; Crismore et al., 1993; Flowerdew, 1997; Hyland, 2005a), as well as to report their findings in a seemingly more objective manner.

Most of these studies of metadiscourse, starting with Harris' (1959) pioneering work, make use of the Hallidayan distinction between the textual and interpersonal macro-functions of language (Halliday, 1973). Textual metadiscourse refers to devices, which mainly play the role of organizing the text for the benefit of the reader. In contrast, inter-personal metadiscourse helps the writer interact with the reader about the propositional content (Vande Kopple, 1985).

Viewing knowledge as a cultural product, the construction of which is shaped by practices of discourse communities (Hyland 1998), academic writers organize their texts in accordance with the needs of their readers. They facilitate readers' comprehension by guiding them through the text, actively employing interactive metadiscourse markers in the knowledge-making process. As this process is closely related with the writer's awareness of his/her participating audience, it is based on "the writer's assessment of the reader's assumed comprehension capacities, understandings of related texts, and need for interpretive guidance, as well as the relationship between the writer and reader" (Hyland, 2005a, p. 50). In addition to organizing their texts considering their readers' needs, writers also orient and guide their readers towards their own perspectives on propositional content so as to involve them in the joint construction of the text; this is the point at which the use of interactional metadiscourse markers becomes salient (Thompson, 2001; Hyland & Tse, 2004; Hyland, 2005a). While intervening and, commenting on their own messages, writers, at the same time, express their textual voice or community-recognized personality. As such, the metadiscourse markers used here are essentially evaluative and engaging, expressing solidarity, anticipating objections, and responding to an imagined dialogue with others (Hyland, 2005a).

Thus, the strategic employment of interactive and interactional metadiscourse markers enables writers to make judgments about what they write and to convince their readers about the significance of the position(s) they adopt (Crismore, et al., 1993). In doing so, writers negotiate their knowledge claims with other writers, and their success depends on how strategically they can use appropriate rhetorical devices and interactive elements as well as how effectively they can appeal to their disciplinary values (Bazerman, 1988; Bizzell, 1992). During the social and interpersonal engagement in the knowledge construction process, metadiscourse helps writers express their personality, credibility, reader sensitivity, and relationship to the message (Crismore et al., 1993). As such, metadiscourse can be perceived as the writer's linguistic and rhetorical manifestation of the writer in the text (Hyland, 1997).

Hedges and boosters, which comprise two of the sub-categories of interactional metadiscourse, are communicative strategies writers employ to respectively increase or reduce the force of their statements (Hyland, 1998). They enable writers to modify their claims, to tone down uncertain or potentially risky claims or to emphasize what they believe to be correct, while all the time conveying an appropriate collegial attitude to readers (Holmes, 1984, 1990). In this way, hedges and boosters help writers balance their convictions with caution. They give authors the opportunity to convey an appropriate disciplinary persona of modesty and assertiveness and in doing so to gain acceptance for their work (Hyland, 1996a).

Hedges, self-reflective linguistic expressions, are deployed to express epistemic modality and to modify the illocutionary force of speech acts (Holmes, 1982, 1988). Inherent in hedging is the assumption that a statement is based on reasoning rather than certain knowledge, so that readers are entitled to the freedom to dispute it. Hedges allow writers to mollify their opinion-driven claims, to indicate that they are not presenting accredited facts (Hyland, 1996b, 1998a). Besides guarding against an image of interpersonal imposition, they help writers anticipate the possible consequences of overstatements and the potential of their claims. In addition to being a powerful device in the hands of writers, they are also a great asset to readers, since they give readers the freedom to dispute statements based on plausible reasoning rather than knowledge (Hyland, 1996b).

Boosters, on the other hand, are a means through which writers express their beliefs, assert an opinion and/or a strong claim and mark their involvement and solidarity with their audience. Through them, writers engage with their colleagues and stress the existence of shared information and common group membership (Hyland, 1998ab), with the upshot being that boosters affect interpersonal and conversational solidarity (Holmes, 1982 and 1990).

With a few exceptions, most research on hedges and boosters has been carried out within the broader framework of the study of metadiscourse. Several taxonomies of metadiscourse have been introduced over the past three decades (e.g., Vande Kopple, 1985; Crismore et al., 1993; Luuka, 1994; Bunton, 1999; Dafouz-Milne, 2003; 2008; Mauranen, 2004; Hyland, 2005; Infantidou, 2005; Adel, 2006; Toumi, 2009). The majority of research on metadiscourse falls roughly into two categories: cross-disciplinary and cross-linguistic studies. Research on metadiscourse with a cross-disciplinary focus is based on the premise that academic writers belonging to different discourse communities adhere to different discourse conventions in knowledge production and communication (Hyland, 2000). These studies have consistently drawn attention to systematic differences between hard and soft disciplines in the use of metadiscourse (e.g., Hyland, 1998a, b, 1999, 2005b, 2007, 2017; Vassileva, 2001; Abdi, 2002; Dahl, 2004; Hyland and Tse, 2004; Vold, 2006a; Millan, 2008; Peacock, 2010; Khedri, Heng and Ebrahimi, 2013; Cao and Hu, 2014; Salas, 2014; Kawase, 2015).

Studies on metadiscourse with a cross-linguistic perspective have shown that the use of metadiscourse may vary from culture to culture and from language to language (Mauranen, 1993; Valero-Garces, 1996; Vassileva, 2001; Salager-Meyer et al., 2003; Martin-Martin and Burgess, 2004; Gabrielatos and Mcenery, 2005; Flottum et al., 2006b; Kong, 2006; Siepmann, 2006; Vold, 2006b; Martin-Martin, 2008; Mur Duenas, 2011; Akbas, 2012; Lee and Casal, 2014). It should be underlined that most of these studies are on metadiscourse in general, rather than looking exclusively at hedges and boosters in academic writing. These studies have focused largely on the most frequent metadiscourse markers from each sub-category, markers that amply manifest the interactive and interactional dimensions of metadiscourse. Research exclusively on hedges and boosters is few and far between.

Three of the extant studies on hedges and boosters merit particular consideration, above all those of Hyland (1998, 2000). While the former investigated how Cantonese L1 undergraduates responded to hedges and boosters in an academic text, the latter analyzed the use of hedges and boosters in research articles in eight disciplines: mechanical engineering, electrical engineering, marketing, philosophy, sociology, applied linguistics, physics, and microbiology. Another cross-linguistic study is Falahati's 2004 investigation of the use of hedging in English and Farsi academic discourse. This yielded the

finding that the use of hedges was more pronounced in English than in Farsi publications, a finding that-as shall be shown- bears a likeness to the Turkish academic context.

Despite the burgeoning international research on cross-disciplinary and cross-linguistic studies on metadiscourse, research on the use of metadiscourse by Turkish academic writers seems inconclusive and limited, not least when it comes to the question of hedges and boosters. One of these studies is a cross-disciplinary study by Doyuran (2009), who analyzed the use of hedges in Turkish in the field of geological engineering and linguistics and showed that there are disciplinary discrepancies in the use of hedges. In another study on the use of metadiscourse markers by Turkish academic writers in Turkish and English book reviews, Bal-Gezegin (2016) found that the total number of interpersonal metadiscourse features was considerably higher in the English corpus than in the Turkish corpus. In another similar study on the use of metadiscourse markers in master's dissertations (introductions and conclusions) by Turkish students written in Turkish and English, Akbas (2012b) found a statistically significant difference in introductions, but no statistically significant difference in conclusions. In another cross-cultural study on the use of metadiscourse markers in master's dissertation abstracts, Akbas (2012a) found that native speakers of English use metadiscourse markers in their abstracts more than do Turkish writers. Notwithstanding these studies, there have been very few academic explorations of hedges and boosters within the Turkish academic context.

One of these scarce studies is by Algı (2012). In her study on the use of hedges and boosters by Turkish learners of English in their L1 and L2 argumentative paragraphs, Algı (2012) found that the types, frequencies, and meanings of hedges and boosters are culture and language-specific, as well as being topic and genre-dependent. In their cross-linguistic study on the use of hedges by British and Turkish undergraduates in their English texts, Yüksel and Kavanoz (2015) discovered that British undergraduates' texts included a richer variety of hedges, whereas Turkish undergraduates' texts displayed an overuse of some of them. In another study on the employment of boosting in academic texts by Anglophone, Japanese, and Turkish writers, Yağiz and Demir (2015) showed that Turkish writers employed fewer boosters than their Anglophone and Japanese counterparts. However, they observed no difference between Anglophone and Japanese writers, which may cast doubt on the claim that the use of metadiscourse varies from culture to culture and from language to language. Another study with a focus on academic writers from different cultural backgrounds with a contradictory finding was by Deghan and Chalak (2015), who found no difference between Iranian and American academic writers with respect to the use of code glosses.

Despite the growing body of research emerging from Turkey on metadiscourse, very little research has been devoted to the use of hedges and boosters by Turkish academic writers (TWs) and American academic writers (AWs). The present article is the first study to examine the use of hedges and boosters in research articles (RAs) by Turkish academic writers with a background and expertise in English Language Teaching. It aims to compare the use of hedges and boosters in qualitative research articles published in leading US-and Turkey-based journals. The study mainly aims to examine;

- a. hedges and boosters in RAs by AWs and TWs in the discipline of applied linguistics quantitatively,
- b. hedges in RAs by AWs and TWs in the discipline of applied linguistics qualitatively,
- c. boosters in RAs by AWs and TWs in the discipline of applied linguistics qualitatively.

2. Methodology

To address the above issues, a corpus of RAs by AWs and TWs was assembled, drawing on articles on applied linguistics with that a special emphasis on second and foreign language teaching and learning. Following Hu and Cao (2011), this discipline was chosen for two main reasons. For one thing, the choice of material from any discipline would have been a welcome innovation as, to the best of my knowledge; we have no existing study which has the same purpose and scope, comparing and contrasting the use of hedges and boosters in the abstract, introduction, methodology, results, discussion, and conclusion sections of RAs by AWs and TWs, leaving an obvious gap to fill in. Nonetheless, we also thought that it would be practical to focus on a single discipline in order to exclude the impact of disciplinary variation, so that thoroughly examine the effect of culture on the use of hedges and boosters could come to the fore and tease apart cultural effects from disciplinary ones on the use of hedges and boosters. Another rationale behind the choice of selecting only the discipline of second and foreign language teaching and learning was that Turkish writers are experts conspicuously active in this field and serve as language editors of the journals published in Turkey, as well as providing guidance and supervision to MA and PhD students. For this reason, they have left ample evidence of their development of this particular category of discourse, which they might be representative of Turkish academic writers at large. Finally, with a background in linguistics and teaching English as a foreign language, we, the present author, had insider knowledge of the discourse practices of this discipline, an obvious advantage in data coding and analysis.

2.1. Corpus and procedure

A parallel sub-corpora of RAs was constructed from Turkey and USA-based English journals displaying maximum similarity. The corpus constructed for this study consists of 40 RAs; 20 RAs by AWs and 20 by TWs. The AWs corpus was formed using articles appearing in well-known international journals indexed in the SSCI. It consists of articles published in *Applied Linguistics*, *Journal of Pragmatics*, *Journal of Second Language Writing*, *English for Academic Purposes*, *English for Specific Purposes*, *TESOL Quarterly*, and *Written Communication*. These journals were chosen because of their impact factor, reputation, and online availability. In deciding on which American writers to choose, their names and surnames, the location of their institutions, and the information provided in their CVs were taken into consideration. As there was not sufficient number of relevant articles by Turkish academic writers in the above-mentioned journals, the TWs corpus was chosen from Turkey-based journals. This corpus comprises various Turkey-based journals indexed in ULAKBIM, the Turkish Academic Network and Information Center (see Appendix A). The Turkish writers in the corpus are all speakers and writers of English as a Foreign Language, and obtained their MA and PhD degrees in applied linguistics in English-medium institutions. The corpora were quite comparable in some major aspects. First, both groups included the leading academic journals and were widely read by their respective communities of scholars. Second, in terms of genre and subject matter, both groups published empirical and non-empirical academic articles in second or foreign language teaching and learning. Finally, both corpora consisted of empirical RAs.

Initially, a corpus of 100 single-authored RAs by AWs and a corpus of 100 single-authored RAs by TWs were formed from issues of the afore-mentioned journals, published between 2000 and 2014. Then, 20 quantitative articles from each corpus were selected at random. Once the corpus was

compiled, the present researcher and a coder with a PhD in linguistics, working independently, analyzed and coded all of the articles in both corpora independently of each other, with a specific focus on hedges and boosters identified by Hyland (1998) and Mur Duenas (2011). Over 140 hedging devices and 80 boosters were coded. When deciding on hedges and boosters, mostly the immediate context of the linguistic item was also considered in order to differentiate the epistemic meanings of certain lexical verbs from their root meanings. In following the coding process, both qualitative and quantitative approaches were used to analyze the corpora. Given the highly contextual nature of some hedges and boosters and the fact that some lexical items can have both epistemic and root meaning, items were coded manually rather than by a computer. Following Hu and Cao (2011, p. 2799), in order to facilitate the data coding process, hedges and boosters were taken as

- i) Metadiscourse markers being explicitly used in a text,
- ii) Signaling writers' stance over entire propositions rather than modify individual lexis, and
- iii) Not only communicating writers' epistemic stance but also expressing affective meaning by modifying the illocutionary force of speech acts. The inter-coder reliability was assessed using Cohen's Kappa. The inter-coder reliability agreement was 90%. The remaining discrepancies were resolved through discussion.

3. Findings

To address the issues mentioned above, quantitative, qualitative and textual analyses were conducted. We first present the results of the quantitative analyses, and then summarize prominent patterns identified by the qualitative analyses.

3.1. Quantitative analysis of hedges and boosters in RAs by AWs and TWs

Table 1 presents descriptive statistics and percentages for the use of hedges and boosters by AWs and TWs in their RAs. The quantitative results indicate the prevalence and importance of hedges and boosters in academic writing, with an average of 184.65 of occurrences of hedges per paper and an average of 71.9 occurrences of boosters per paper by AWs. In contrast to AWs, TWs employed hedges with an average of 62 times per paper and boosters of 28.2 times per paper. The difference observed in the frequency of the hedges and boosters employed is also reflected in the total number of hedging devices and boosters used. While AWs used a total of 139 hedging devices 3693 times and 77 boosters 1438 times, TWs used 73 hedging devices 1240 times and 54 boosters 564 times. As can be seen, AWs employed hedges and boosters almost two times more than TWs. Also, the total number of hedges AWs used exceeded the total number of boosters they used by nearly 3 to 1. A similar tendency can be seen in the TWs' corpus. In the TWs' corpus, the use of hedges exceeded the use of boosters more than 2 to 1. This result is in line with the findings of Hyland's (1998), del Saz Rubio (2011), Hu and Cao's (2011), and Mur Duena's (2011) in that the use of hedges by writers from an Anglo-American tradition exceeded their use of boosters almost 3 to 1.

Table 1. The frequency distribution of hedges and boosters

	# RAs	# hedges	# occurrences per paper	# boosters	# occurrences per paper
AWs	20	3693	184.65	1438	71.9
TWs	20	1240	62	564	28.2

3.2. Qualitative analysis of hedges in RAs by AWs and TWs

Overall, the above-mentioned quantitative results reflect the critical importance writers have attached to distinguishing fact from opinion in academic discourse and the need to present claims provisionally rather than assertively. As these preliminary results point out, the use of hedges to mitigate claims and soften assertions is an important feature of academic writing, especially in a soft discipline such as Applied Linguistics where “dealing with human subjects and relying on qualitative analyses or statistical probabilities to construct knowledge requires considerable tentativeness in expressing claims” (Highland, 2004, p. 145). Our findings concur with Dahl’s (2004) argument that the data gathered in disciplines such as Applied Linguistics must be subjectively interpreted. As fields like linguistics deal solely with human subjects and rely on qualitative analyses or probabilities to create knowledge, they necessitate considerable tentativeness when expressing claims and so they contain a lot of hedges.

In addition to exposing quantitative differences, the analysis has revealed some subtle though important differences in the manner of usage. Although the ten most frequently deployed hedging devices in the two corpora were almost the same, their ranks and frequencies vary, as can be seen in Table 2. Modal verb use makes up 26.6% of the hedges employed by AWs whereas it accounted for no less than 42.9% of the hedging by TWs, pointing to an overreliance on modal verbs on their part. A similar overreliance by TWs on certain modal verbs is also evident. While the modal verb ‘may’ makes up 8.2% of hedging devices by AWs, ‘can’ accounts for 20.8% of the hedges by TWs. This observation supports Hyland’s (1998) finding in that ‘may’ is the most common modal verb among the hedging devices used in RAs by academic writers with an Anglo-American background in their RAs. TWs, on the other hand, employed the modal verb ‘can’ primarily to express epistemic possibility. This finding, over-reliance on this modal verb by TWs, is in line with earlier findings by Kafes (2009). In his study on authorial stance by American, Spanish, and Turkish academic writers in RAs, Kafes (2009) found that Turkish academic writers displayed over-reliance on the modal verb ‘can’, while American academic writers used the epistemic modal verb ‘may’ the most. Yet another observation concerning modal verb use is TWs’ use of the modal verb ‘should’ with a higher frequency and percentage than that of AWs. Closely related with the use of modal verbs is also the finding that AWs used different modal verbs in a relatively balanced way while TWs displayed an overreliance on ‘can’ and ‘should’. In contrast to the case with AWs, ‘should’ is the second frequent second hedging device in the TWs’ corpus.

Table 2. The most frequent five hedging devices by AWs and TWs and their frequencies and percentages

	Hedging devices	AWs		TWs		
		Frequency	% among the hedging devices	Hedging devices	Frequency	% among the hedging devices
1	may	305	8.2	can	259	20.8
2	can	274	7.4	should	147	11.8
3	would	177	4.7	may	86	6.9
4	could	126	3.4	indicate	51	4.1
5	most	122	3.3	most	49	3.9

A similar tendency is seen in the use of lexical verbs. While lexical verbs make up 24.3% of all the hedging devices by AWs, they account for 30.2% of all the hedging devices by TWs. These lexical verbs not only appear in quite different quantities in proportion to other hedging devices; their usage across the groups also differs. In the TWs' corpus, almost all of the lexical verbs (97%) were used to express impersonality, with the inclusion of abstract subjects like 'the study', 'the results', 'or the findings', the use of deleted agent passives, and a heavy use of dummy 'it' subjects, such as, "it was found", 'it has been shown', and 'it is generally believed'. In the following excerpt taken from the introduction section of an article by a Turkish academic writer, the writer uses the lexical verb in a passive construction.

(1)...*It is seen* that Krashen's strategies sum up what Grellet says. Foreign language teachers can be advised to follow these strategies in the classroom. Generally teachers often use ... (TWs) (Italics added)

These passive constructions were mostly used in conjunction with a dummy subject 'It'. By using lexical verbs in a passive construction with a dummy subject, writers made generalizations, minimizing their roles as researchers and taking no responsibility on themselves, as can be seen in the excerpt below:

(2)...In our schools, *it is believed* that the most important thing that students should know is grammar but in most cases, students can not communicate in real life although... (TWs) (Italics added)

In addition to resorting to passives, TWs used inanimate subjects like 'the results', 'the findings', and 'the study' in the subject position with lexical verbs. In the following excerpt from the results sections of an article by a Turkish academic writer, the writer prefers to be invisible and wishes the facts, in this case the findings of her study, to speak for themselves, mitigating the writer's commitment to his/her knowledge claims or conclusions.

(3)...*The results* of the phased regression analysis of the collected data *indicate* that there is a meaningful correlation between the teacher trainees' perceived self-efficacy in their field of study and their perceived control on their lives in general...(TWs) (Italics added)

By using inanimate nouns with epistemic verbs (e.g., suggest, indicate), writers preferred to conceal their subjectivity behind their data and findings and present the knowledge claims as if the data could speak for themselves. Another rhetorical strategy Turkish writers employed to sound objective and impersonal is using discourse-oriented verbs like 'indicate', 'show', 'determine', and 'demonstrate'. Turkish academic writers employed them all in passives, nominalization, and in constructions with inanimate subjects like 'the study', 'the results', 'the findings', which fortified the already objective connotations these verbs carry.

In addition to using passives and nominal constructions, contrary to their Turkish counterparts, AWs diverged from their Turkish counterparts in employing self-mention singular pronoun 'I' and the self-mention exclusive plural pronoun 'we' and its derivative form 'our' with more than half of the lexical verbs referred to above. In the following excerpt, taken from the conclusions section of a paper by an American writer, the writer prefers to be visible and to take full responsibility on himself/herself.

(4)...*I argue* that in order to document the wide range of language demands and language learning opportunities inherent in doing academic work, as well as to understand what students from language minority backgrounds are able to do to meet these demands, the notion of "academic English" must be expanded beyond the "academic" vs. "conversational" language distinction... (AWs) (Italics added)

Another striking finding about AWs is their use of cognition verbs such as 'think', 'believe', 'argue', and 'suspect' with self-mention words in subject position. When used together with self-mention words, cognition verbs, according to Hyland (1998), carry subjective connotations and a greater sense of personal conjecture. As seen in the following excerpts, by using a cognition verb with self-mention words, AWs imply that they accept personal responsibility and attribution.

(5)...Quantitative and qualitative analyses are undertaken using a corpus of published research articles in two disciplines as a model of advanced writing. *I hypothesize* that pronominal uses of this/these will be used more frequently when the demonstrative refers to longer stretches of discourse that cannot easily be summarized with a single nominal. In addition, because of the function of shell nouns in encapsulating complex information, *I hypothesize* that when compared to other abstract nouns, shell nouns will be used with longer antecedents. (AWs) (Italics added)

(6)...My reason for doing so is that *I do not believe* the motivations for either type of revision can be easily reconciled with the traditional category of a macrostructure edit...(AWs) (Italics added)

Examples of this kind prompt the conclusion that the American academic writers in question aimed to promote their scholarly identity and gain credit for their research claims by employing self-mention words, which plays a crucial role in mediating the relationship between writers' arguments and the expectations of their readers (Hyland, 2004). It follows from these findings that expressing new knowledge tentatively has a critical importance in determining the fate of claims within RAs, as hedges can play a crucial role in persuading readers as to the validity of a study and thus determining whether claims are accepted or rejected.

3.3. Qualitative analysis of boosters in RAs by AWs and TWs

When it comes to boosters, similar observations were made. As noted earlier, AWs used a total of 77 boosters 1438 times, whereas TWs employed a total of 54 boosters 564 times. 18 of the 77 boosters employed by AWs were verbs, accounting for the 35.8% of all the boosters. On the other hand, 13 of the 54 boosters used by TWs were verbs, making up the 45.2% of all the boosters, demonstrating a relatively heavier over-reliance on verbs. As was the case with the frequency of hedging devices, the frequency of the booster-use by AWs was almost three times more than that by TWs.

Table 3. Boosters used most frequently by AWs and TWs

		AWs		TWs		
	boosters	Frequency	% among the boosters	boosters	Frequency	% among the boosters
1	show	139	9.6	show	74	13.1
2	demonstrate	69	4.7	determine	40	7
3	must	62	4.3	know	36	6.3
4	reveal	49	3.4	clear	29	5.1
5	know	46	3.1	reveal	28	4.9

It is obvious that verbs account for a major share of the boosters used by both groups. What is interesting is the divergence in the way boosters were used by writers within the two groups. AWs used roughly 20% of these verbs in nominal constructions, 35% in passive constructions, 30% in constructions with an abstract subject like 'the results', 'the findings', and 15% in constructions with self-mention words. TWs did not employ any self-mention words with these verbs. In contrast, our analysis has revealed that AWs employed self-mention words for five rhetorical functions: to announce goals or purposes, to structure discourse, recount research procedures, state results, and elaborate arguments. In the following excerpt taken from the abstract of an American writer's article, the writer repeatedly uses a self-mention word as the subject of the clause in describing the procedures he followed in his study.

(8)...I describe a variety of transactions that students used to engage in group social studies tasks, and I *show* how students used language differently for discussing ideas within their groups and for preparing to present these ideas to their teacher and classmates... (Italics added) (AWs)

By using a self-mention word in combination with a booster, the writer presumably aimed to increase his/her commitment to his/her knowledge claims, asserting his/her authority and so positions himself/herself as a privileged figure in his/her disciplinary community (Hu & Cao, 2015). Contrary to AWs, TWs did not employ self-mention words at all. They used 15% of their verbs in nominal constructions, 44% in passive constructions, and 43% in constructions with an abstract subject like 'the results', 'the findings', preferring their studies to speak for themselves. Below, the Turkish writer of a results section opts for an inanimate word 'results' as the subject with the verb 'show'.

(9)...The overall *results* of the questionnaire *show* that there is no significant difference among language teachers' methods in terms of their in-service training in the Antalya Kepez region... (TWs) (Italics added)

In addition to using inanimate subjects with these verbs, TWs employed passive constructions with these verbs as seen in the following excerpt, in which the writer prefers the claim to arise from the research itself.

(10)...There are 280 students in the study. It *was found* that students adopted modular teaching approach, benefited learning packages, found Learning Resources Center as a useful place to study English and gained confidence by using English teaching modules... (TWs) (Italics added)

To repeat, only AWs made explicit self-references, which aims to 'promote competent scholarly identity and gain credit for their research claims... and [these pronouns] have significant consequences for how their message is received' (Hyland, 2004, p. 143). This interpersonal feature of writing, according to Lee and Casal (2014), is closely related to the specific lingua-cultural contexts in which texts are produced. In addition to acknowledging the profound impact of language and culture on the use of writers' use of metadiscourse, Lee and Casal (2014) argue that some other factors, such as discipline, part-genre, and writer status, also interact with culture in complex ways.

4. Discussion and Conclusion

This comparative study aimed to investigate the use of hedges and boosters in the RAs by academic writers from two different cultural and language backgrounds. As we have seen, both the quantitative and the textual analysis revealed a marked cross-cultural contrast between American and Turkish academic writers in that AWs used a lot more hedges and boosters than TWs. This finding is consistent with those of some other studies (i.e., Salager-Meyer et al., 2003; Martin-Martin and Burgess, 2004; Flottum et al., 2006; Kong, 2006; Vold, 2006b; Martin-Martin, 2008; Perez-Llantada, 2010; Hu and Cao, 2011; Mur-Duenas, 2011; Loi and Lim, 2013; Ghadyani and Tahririan, 2014; Lee and Casal, 2014; Yagiz and Demir, 2014), which, on the whole, have shown that scholars coming from the Anglo-American rhetorical tradition seem to adopt a more tentative stance than do their counterparts publishing in some other languages.

While these differences may be attributable to cultural background, it is also possible that the differences highlighted above can be related to the cultural influences, culturally-based rhetorical conventions, and styles of persuasion that are dominant in the respective sociocultural contexts of American and Turkish academic writers. Given the importance attached to questioning and critiquing existing knowledge and engaging in debates and formal argumentation in the Anglo-American writing tradition, it is no surprise to see writers coming from this academic writing tradition making use of hedging devices to make their scholarly writing incorporate an appropriate level of circumspection, tentativeness, and commitment so that their positions, arguments or claims are more reasonable and convincing to the members of their discourse communities (Hu & Cao, 2011). Besides, it is quite natural for American academic writers to use hedging devices as a negative politeness strategy to minimize or avoid imposition on the audience, for American culture is characterized by "social distance, asymmetry, and resentment of impositions" (Brown & Levinson, 1987, p. 245). In

order to cultivate these core values of the Anglo-American writing tradition, in the USA considerable attention and care is assigned to teaching students to write effectively in USA, such as putting emphasis on communication with the reader by making it an explicit feature of the writing process (Dahl, 2004). Turkey has less of a tradition in this respect for throughout the school system, since there is little or no focus on the writing process, whether in Turkish or in English in general. Even at the university level, remarkably very few courses are offered on academic writing. Concepts such as communicating with the reader or writing in a writer-responsible manner are issues that are rarely, if ever, touched on. Often associated with Anglophone cultures, is the fact that the English authors is the preference for a writer-responsible style (Hinds, 1987), which lays importance on establishing relationships between ideas for the benefit of readers. Following Hinds' (1987) distinction between writer- and reader- responsible styles, it seems plausible to suggest that TWs tend to favor a reader-responsible style, leaving the interpretation of content mostly to their readers. AWs, on the other hand, appear to favor a writer-responsible style, clarifying meanings to a greater extent and ensuring that the text is read and interpreted as intended.

Another feature of the Anglo-American rhetorical convention observed in the AWs' corpus is closely related to these writers' preference for taking up responsibility and for being visible in their academic writing. While the Anglo-Saxon tradition (Dahl, 2004, p. 1822) encourages American writers to be clearly visible in their texts, to take responsibility for the argumentation and to provide signposts for the reader, thereby easing processing, Turkish academic writers appear to perceive writer invisibility in academic writing as an essential sign of and requirement for scientific objectivity by Turkish academic writers. Duenas (2007) emphasizes that authorial reference is closely related to the unrelenting competition among American scholars, for they have to prove their credentials and show that they are original contributors to their respective discipline community, using self-mentioning features. It is also plausible to trace the roots of the preference for writer visibility to the importance Western culture attaches to individualism.

It may be concluded that AWs relied on both impersonal and personal projection, while TWs relied exclusively on impersonal projection, portraying their evaluations impersonally, and constructing a context in which claims appeared to arise from the research itself. As has been demonstrated, the TWs in my corpus preferred to be invisible in their RAs. One important way of achieving writer invisibility, according to Hyland (1998), is employing less frequent use of hedges and boosters. By minimizing their own role in interpreting data, and evaluating claims, TWs intend to allow facts to speak more for themselves. This rhetorical strategy is often reinforced by the use of embedded clauses with an anticipatory or dummy *it* replacing a human agent as subject (Hyland, 1998, p. 15). Given the argument that knowledge is a cultural product, it seems that the findings of this study regarding the frequency and usage of hedges and boosters seem to reflect different epistemological and social assumptions of two disciplinary communities.

Although a similar epistemological trend has been on the rise in Turkey for years, the outcomes may have turned out to be not exactly the same as had been anticipated. Long before Turkey firmly decided to fully embrace and nourish Western values under Atatürk's leadership, as far back as 1839, i.e. at the time of the Ottoman Empire, a number of reform movements heavily influenced by European ideas were already in operation. As the education system was believed to be the key to social development, education had a key role in the Westernization process with the establishment of

the first modern universities, academies, and teacher schools in 1848. Together with teacher and materials, the Western education system itself was transferred from Europe. It is in this period too that positivism, an offshoot of the Enlightenment and a scientific philosophy in the West in the 19th century, was also adopted (Öztürk, 2016), but it was conceived as “as a political project for transforming the society in a fundamental way rather than focusing on the epistemological foundations that led to the Enlightenment and Positivism in the West” (Sarı, 2015, p. 636). This is why Turkey did not witness the emergence of a western-style tradition of critical thinking, which is partly what had led to the transformation and modernization in the Western world failed to emerge (Sarı, 2015, p. 636). Although core values such as questioning oneself as well as others, evaluating received knowledge and engaging in debates and formal argumentation have long been cultivated in Turkey, it is still questionable to what extent these values have been fully nurtured.

Parallel to the Westernization process, the academic writing tradition in Turkey, especially the practice of academic writing in English, has undergone fundamental changes. As English became the lingua franca, the dominant Anglo-American rhetorical and academic writing tradition was adopted and emulated. As a result of this process, some major changes to the rhetorical features of academic writing at macro level were welcomed, such as the rhetorical structure of the research article. On the other hand, other culturally-derived elements of academic writing such as writer stance seems to have bear the traces of both the indigenous writing tradition and that of the Anglo-American rhetorical conventions.

Rhetorical practices and cultural background are not the only factors that may shape the way TWs deal with hedges and boosters. It is also likely that Turkish language has influenced TWs' use of hedging devices and boosters in English. In her study on the employment of hedges in Turkish, Doyuran (2009) investigated hedging devices in a total of 10 geological and 10 linguistics RAs, taking Crompton's taxonomy (1997) as a basis. She discovered that a total of 417 hedging devices were used in her corpus, with linguistics RAs including more hedging devices. Despite the range of hedging devices used, their frequency was rather low compared to what we have found in this study. One of the reasons seems to be directly related with the fact that epistemic modal verbs (may, might, can, and could) is expressed with “the combination of the suffix *-Ebil* with the aorist *-Ir*” and that inferential modal verbs (must and should) are “expressed with just one suffix “*malı+dır*” (Doyuran, 2009, p. 90). Still, Doyuran's findings gives us a clue as to Turkish academic writers stance towards hedging in that they seem to refrain from using them to a similar degree that their American counterparts choose to employ them in English.

The finding that TWs used fewer hedges and boosters than their American counterparts and that Turkish learners used fewer hedges and boosters in Turkish than they did in English (Alçı, 2012) draw our attention yet to another issue influencing TWs' employment of hedges and boosters; that is, their educational background. It would appear plausible to argue that some of the above-mentioned differences (i.e., TWs' overreliance on the modal verb 'can' and 'should' while refraining from the modal verbs 'may' and 'must') may stem from their educational background, especially the English instruction they received and the discourse of the academic materials they have used during their English studies. While the primary and secondary English Curriculum designed by the Board of Education mentions the modal verb 'can' 64 times (Milli Eğitim Bakanlığı, (MEB) 2013), it mentions

the modal verb 'may' only 8 times. The modal verbs 'should' and 'must' appear in the curriculum a similar tendency is seen the frequency with the modal verbs 'should' and 'must' is mentioned.

Overall, the reasons behind the differences between the AWs and TWs in the corpus might be traced, partly, to the first language and/or the cultural and educational contexts of the writers. That is, the use of epistemic modality by TWs seems to have been influenced by practices of epistemic modality in their culture and first language in general, and in their educational and academic contexts in particular. Also, it is not unlikely that the similarities and differences can be traced back to the information that the TWs have received in their English instruction, and the discourse of the academic materials they have read during their English studies. These findings and observations seem to have important ramifications for academic writing, in both English and Turkish, since all of the writers in the Turkish corpora are from academia, where future academics and academic writers are raised.

Despite the limitations that will be outlined below, our study has enriched our understanding of the qualitative and quantitative use of hedges and boosters by Turkish academic writers in the RAs by suggesting that not only their own cultural and language backgrounds and the Anglo-American rhetorical traditions but also their educational background has an impact on their employment of metadiscourse features in their academic writing. Even though the TWs in question were highly proficient in English, noteworthy quantitative and qualitative characteristics of their use of hedges and boosters were observable.

Notwithstanding these findings, some important issues need to be addressed for a more in-depth understating of the use of hedges and boosters by Turkish academic writers. First and foremost, this study has examined RAs in a single discipline to identify cultural/linguistic effects on the use of hedges and boosters in a foreign language. In order to be able to develop a more in-depth understanding of the various effects on the use of these metadiscursive resources, it is necessary to examine comprehensive comparable data from different disciplines. Through this, we can identify whether disciplinary variations may influence and shape the use of hedges and boosters. Second, this study has focused on only two types of interactional metadiscourse strategies; hedges and boosters, in RAs. Further research may focus on the use of interactive as well as the other interactional metadiscursive resources in RAs, with a focus on the use of metadiscourse in the different parts of the RA. The influence of hedges and boosters on comprehensibility and textual quality merits consideration and investigation too. Future studies may address the reasons behind Turkish writers' rhetorical choices, such as their preference for invisibility. Future research might investigate the use of hedges and boosters in Turkish academic writing and its influence on the use of hedges and boosters in English. And finally, future research might focus on the possible impact of the publishing contexts, i.e., whether the RA is published internationally, or nationally in a specific country. Research on these important issues can contribute to our understanding of cross-cultural and cross-linguistic communication and help develop effective academic writing programs in English for MA and PhD students.

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Appendix A List of Turkey-based Journals (In alphabetical order)

Ahi Evran University Journal
 Akdeniz University Journal
 Atatürk University Journal
 Balıkesir University Journal
 Çukurova University Journal
 Education and Science
 Educational Sciences: Theory & Practice
 Fırat University Journal
 Gazi University Journal
 Hacettepe University Journal
 Mersin University Journal
 Novitas-ROYAL
 Selçuk University Journal