The Use of Hedging in Research Articles on Applied Linguistics

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Abstract
This paper is devoted to the analysis of the use of hedging in a corpus of articles from applied linguistics, and in this sense, it is complementary to the previous research of academic persuasion in research articles (Hinkel, 1997; Hyland, 1996, 2004). This study examined the types and frequency of hedges employed by the authors of academic research articles (RAs) in the field of applied linguistics. A corpus consists of 20 research articles, randomly selected from the Open Access Journals on Educational linguistics (5 RAs), Psycholinguistics (5 RAs), Sociolinguistics (5 RAs) and Pragmatics (5 RAs) The data were manually coded according to Hyland's taxonomy of hedges and hedging devices (Hyland,1996) and then formatted to calculate the frequency and type of hedges in RAs on Applied Linguistics. Results of the study indicate that reader-oriented hedges constitute the main pragmatic type of hedges in RAs in the field of applied linguistics, recognizing the need for reader's ratification of the author's claims and politeness conventions of academic discourse per se. Combination of qualitative and quantitative methods applied to computer readable data proved that hedges in RAs on Applied Linguistics are topic dependent, showing differences in typology, frequency and distribution even within one discipline.
Key words: hedging; metadiscourse; academic writing; research article; persuasion; interactional resources

Introduction

Academic writing is characterized by the objective representation of knowledge, where authors try to place his/her new scientific work into the existing bulk of the research, drawing on interpersonal and ideational resources. However, it has been universally accepted, that communicating new knowledge in a genre (e.g., of the research article) meets the requirements of a disciplinary discourse and its readership is a complex task. This can be possibly achieved through the use of modality, first-person pronouns and attribution (Myers, 1989), or stance adverbs (Biber, 1988; Çakır, 2016). Other authors concentrate more on the persuasive function of metadiscourse (Mauranen, 1993; Hyland, 1998 and 2005, p. 63-71; Hyland, 2017), analyzing the use of metadiscourse markers for rendering propositional meaning. The degree of strength in expressing

propositional meaning can be modified with the help of lexico-grammatical features, stating conviction, tentativeness, and certainty on the part of academic writers (boosters and hedges are among them).

A bulk of research on hedging has proved some differences in their use and distribution in RAs. Nelson and Castello (2012), tracing the formation of a writer's identity in social sciences, point out that metadiscourse shows significant differences across disciplines and across national, linguistic, and cultural traditions. On the contrary, recent contrastive research of native English writers and non-native English writers witnessed that different cultures may sometimes show similar metadiscoursal patterns in academic writing (Blagojevic, 2004). General claims, regarding voice representation differences, concern the number of discourse markers in "hard" and "soft" sciences, e.i. articles from the natural sciences tend to include fewer metadiscourse markers than those from social sciences and humanities (Hyland, 2008; Vazquez&Giner, 2009). Another point for the difference is that more advanced practitioners of any discipline ("hard" or "soft" sciences) employ metadiscourse to a greater extent than the less advanced (Hyland, 2004), underpinning the differences in academic voice realization by novice and experienced writers etc.

One more controversy in this study concerns the theoretical ambiguity of metadiscoursal markers: hedges and boosters. Literature regarding boosters and hedges doesn't show great differentiation between these two terms (Grabe & Kaplan, 1996, p. 155). According to Hyland (1998, p. 238), boosters and hedges are two metadiscourse markers of credibility, helping authors to negotiate their claims in academic writing. But unlike boosters, which strengthen the illocutionary force of the utterance, hedges act like *downtoners* (Holms, 1984) showing the degree of author's detachment (Vassileva, 2001). Thus, in this study, we will follow the view of Vassileva (2001, p. 85), on *boosters* as interpersonal means of expressing author's commitment to the utterance, and *hedges* as interpersonal means of expressing author's detachment.

Investigation of cultural aspect of persuasion tends to be subjective and presupposes a turn to contrastive rhetoric framework, stating that different languages and writing traditions exhibit considerable variation in respect of academic writing, which may lead to cross-cultural misunderstanding and endanger scientific communication (see Clyne, 1991; Kreutz & Harres, 1997; Vassileva, 1997; Ventola, 1997 to mention some).

Therefore, in this paper we view hedges/hedging as a pragmatic concept, adhering to pragmatic side of the issue of politeness and linking it to politeness phenomena, mitigation, vagueness and modality (Markkanen & Schröder, 1997, p. 249). Moreover, pragmatic side provides us with a more varied spectrum of means for written identity analysis, involving metadiscoursal markers of the interactive and interactional level (Hyland, 2005).

Method

In this paper we will try to utilize Hyland's framework of metadiscourse, mainly his taxonomy of hedges (1996) with the purpose to define types of hedges and their frequency of use in research articles on applied linguistics across four related fields of applied linguistics (i.e., educational linguistics, psycholinguistics, sociolinguistics and pragmatics). To this purpose, a corpus of 20 research articles was analyzed for exploring forms and functions of hedges. The frequencies of occurrence of the different hedging devices were calculated. The forms and functions of hedges were analyzed on the basis of Hyland's (1996) model respectively. The main criteria for referring a linguistic or syntactic device to a hedge was Crompton's test (1997, p. 282): if the proposition can be restated in such a way that it is not changed but that the author's commitment to it is greater than at present, then the proposition is hedged.

The paper is structured as follows. First, we will provide an overview of hedging in academic writing in general, and then will refer to Hyland's taxonomy of hedges (1996) and categorization of hedges in non-factive scientific statements in research articles. Further on we will present results and discussion of types and frequency of hedges in research articles on applied linguistics and end up with the conclusions and implications for future research.

Hedging in academic writing

Since Lakoff (1972) introduced the notion of hedges into linguistics by defining them as "words whose job is to make things fuzzier or less fuzzy" (Lakoff, 1972, p. 195), hedges have been given different definitions by different researchers (Crompton, 1997; Hyland, 1996, 1998; Myers, 1989; Salager-Meyer, 1994, 1997). Hyland (1998) suggested that in academic writing, hedges "imply that a statement is based on plausible reasoning rather than certain knowledge, and allow readers the freedom to dispute it" (Hyland, 1998, p. 4).

Creation of knowledge is formed by four elements of communication: writer, audience (reader), language and reality (context). Writers are presenting a paper with conviction and at the same time, are trying to consider the role of the reader in accepting knowledge (Hyland, 1996). Thus, hedges enable writers to appropriately modulate their claims as well as to give room for the reader to participate in a virtual dialogue.

An increasing number of research studies on a variety of disciplines (see, for example Hyland, 1994, 1996, 1998, 2000; Salager-Meyer, 1991, 1994; Skelton, 1997; Meyer, 1997; Lewin, 1998) has been able to demonstrate how academic discourse is structured to accomplish rhetorical objectives. Myers (1985; 1989) suggested that hedges are part of a wider system of politeness, designed to avoid the certainty of claims, challenging existing assumptions.

Literature overview of interpersonal devices revealed some characteristics of hedging in textbooks (Myers, 1992), science abstracts (Rounds, 1982), and natural science research articles (Vazquez & Giner, 2009). However, hedging in research articles (RA) on applied linguistics within four subfields (educational linguistics, psycholinguistics, sociolinguistics, and pragmatics) represents a little-studied area of pragmatics and needs more attention in terms of its functions and peculiarities of use. Some known influential approaches to metadiscourse markers classification are briefly summarized in Table 1 below.

Table 1: Taxonomies regarding metadiscourse markers in academic writing

Skelton's (1988)	Myer's (1989)	Salager-Meyer's (1994)	Salager-Meyer's (1997)	Hyland's(1996)
Copulas other than be Lexical commenting verbs All modal verbs	Subject complements other than be Lexical verbs Modal verbs of condition Probability adverbs	Shields Approximators Expressions of the author's personal doubt and direct involvement Emotionally charged intensifiers	Modal auxiliary verbs Modal lexical verbs Adjectival, adverbial and nominal modal phrases Approximators of degree, quantity, frequency and time Introductory phrases If-clauses Compound hedges	Attribute-hedges Reliability hedges Writer-oriented hedges Reader-oriented hedges

Following Crompton (1997), we assume that academic writers need to make a clear distinction between propositions already shared by the discourse community, which have the status of facts, and propositions to be evaluated by the discourse community, which only have the status of claims. Evaluative or tentative language is one of the signs by which claims may be distinguished from facts; as Myers (1989, p. 13) argues, "a sentence that looks like a claim but has no hedging is probably not a statement of new knowledge".

Praising Meyer's work for pointing out the necessity to accentuate social norms of academic discourse communities, Hyland (1996) outlines multi-functional character of hedges in gaining acceptance for claims among a powerful group of academic peers. In his key article "Writing without conviction? Hedging in science research articles" (1996) Hyland estimates that hedges can only be analyzed in the combination of three contexts: *institutional, professional and linguistic* (ibid., p. 434). This statement introduces a socio-cultural dimension to the phenomenon under question, referring us to metadiscourse model of academic text.

Socio-cultural focus was further expressed in re-estimated metadiscourse model suggested by Hyland in 2004 (see Table 2). Interestingly, that this time it deals mostly with the two dimensions of interaction: *the interactive and the interactional one*, using the label "interactive" to replace "the textual" and

"interactional" to replace "interpersonal" (Hyland & Tse, 2004). The first dimension is related to the way the author presents material to the audience (i.e. the knowledge of the reader, the genre etc). The second dimension includes such elements of metadiscourse as hedges, boosters, attitude markers, self-mentions and engagement markers. Interactive metadiscourse includes frame markers ("first," "in conclusion"), transitions ("therefore," "moreover"), endophoric markers ("as discussed below"), evidential ("according to"), and code glosses ("that is to say"). Interactional metadiscourse includes boosters ("certainly," "without doubt"), hedges ("possibly," "might"), attitude markers ("correctly," "arguably"), self-mentions (I, me, my, we, us, our), and engagement markers ("consider," "note").

Table 2: A model of metadiscourse in academic texts (adapted from Hyland and Tse, 2004)

Interactive resources of academic text		Interactional resources	
Type	*Function*	*Type*	*Function*
Transitions	express semantic relation between main clauses	Hedges	withhold writer's full commitment to proposition
Frame markers	refer to discourse acts, sequences, or text stages	Boosters	emphasize force or writer's certainty in proposition
Endophoric markers	refer to information in other parts of the text	Attitude markers	express writer's attitude to proposition
Evidentials	refer to source of information from other texts	Engagement markers	explicitly refer to or build relationship with reader
Code glosses	help readers grasp meanings of ideational material	Self-mentions	explicit reference to author(s)

In attempt to disclose rhetorical differences in disciplinary communities, Hyland examined 240 doctoral and master's dissertations by Hong Kong students. The most frequent category in the corpus constituted hedges (as it comprised 41% of all interactional uses (Hyland, 2004). Moreover, Hyland observed that hedges were particularly preferred by the students from "soft" sciences such as Business Studies, Public Administration, and Applied Linguistics, which comprised over 60 % of the cases (Hyland, 2004). He commented that "hard" sciences rely more on qualitative analysis or statistical probabilities in constructing knowledge, and thus, claims are made through reasonable tentativeness and careful exposition (Hyland, 2004).

Contrasting disciplinary use of metadiscourse markers has been displayed in research articles by Vazquez and Giner (2009), who analyzed the use of boosters

in RAs from different disciplines (Marketing, Biology and Mechanical Engineering). The researchers came to the conclusion that "softer sciences seem to present a stronger need for enhancing the propositional content in the containing statements, harder sciences rely on exactness of the data used in their research as sufficiently evidential to show the truth of their statements" (Vazquez & Giner, 2009, p. 235). A research article on Marketing was referred to "soft" sciences, an article on Mechanical Engineering to "hard sciences" and an article on Biology was placed somewhere in between. Results are reported to reconfirm Myers' (1992) investigation of RAs in biology, stating that the use of hedges in textbooks is reserved for matters which lack a consensus (Myers, 1992).

Nelson and Castello (2012) point out that metadiscourse shows significant differences across disciplines and across national, linguistic, and cultural traditions. General claims concern the quantity of discourse markers in "hard" and "soft" sciences: e.g. articles from the natural sciences tend to include fewer metadiscourse markers than those from social sciences and humanities (Hyland, 2008). Another argument is that more advanced practitioners of a discipline employ metadiscourse to a greater extent than the less advanced (Hyland, 2004), underpinning the differences in academic voice realization between novice and experienced writers (McCutchen, 2011, p. 54). Since development of writing skill is based on the fluency of linguistic processes, involved in text production and free access to long working memory, novice writers tend to use "knowledge telling model of writing" (Bereiter and Scardamalia, 1987) and expert writers use "knowledge transformation model of writing" (ibid.). For more insights on this issue, we will need to address psycholinguistics aspect of L1 and L2 writing (Bereiter&Scardamalia, 1987; McCutchen, 2011) that will go far beyond the limits of this paper and thus, constitutes one of the limitations to our study here. We will only take for granted the idea, that metadiscourse markers, representing academic politeness and mitigation, are more characteristic of "expert" academic writing due to higher level of linguistic and cognitive skills (Hyland, 2004).

Bearing in mind the level of writer's proficiency and his/her disciplinary sphere of professional writing, our **hypothesis** is that we can encounter considerable differences in frequency and distribution of hedges in RAs even within four sub-fields of one discipline.

Hedging and persuasion in research articles

Hyland estimates that the use of persuasion is an important characteristic of academic discourse from rhetorical point of view. The ability to argue and persuade is often cited as one of the fundamental purposes of education (Hyland, 1996, 1998; Hinkel, 2005), as it requires presentation of well supported and reasoned arguments as well as engagement with alternative points of view – challenging, critiquing, reinforcing or defending them where appropriate.

Argumentation as active knowledge building refers to the process of learners creating new cognitive artifacts as a result of common goals and synthesis of ideas (Bereiter, 2002). In academic writing argumentation of author's position and certainty is limited by the genre constraints and social demands of academic community, institutional and individual goals.

In 2001, Vassileva analyzed RAs in linguistics in English, Bulgarian, and Bulgarian English with the purpose to investigate the similarities and differences in the degree of commitment (classified by Hyland as "boosters") and detachment (named as "hedges" by Hyland) of interpersonal metadiscourse markers. The results showed considerable differences in the overall distribution of hedges and boosters throughout the three main parts of the article, namely the introduction, discussion and conclusion, which may lead to misunderstandings in cross-cultural communication. The variations were related to the different rhetorical and educational traditions to further facilitate the teaching of academic writing in English to Bulgarians. Genre of a research paper does not only extend understanding of some phenomenon or theory but helps to establish author's reputation and gain recognition of the academic community (Hyland, 1996, p. 4). This recognition is bound to writer-reader consensus on propositional meaning of non-factive statements. According to Hyland (1996), only readers can guarantee the ratification of the claims in how writers construct them (Hyland, 1996, p. 5). Since the aim of this paper is to analyze the use of metadiscourse markers represented in RAs, Hyland's model provides us with effective working instrument for realization of this objective and deserves a closer consideration.

Hyland's classification of hedges

Hyland defines persuasion in academic discourse as one of the important rhetoric techniques, where objective knowledge is supported by empirical arguments. Empirically verifiable knowledge is generally based on accuracy of calculations, representing an analytical model of knowledge formation. But, as any scientific theories are being constantly reassessed and estimated under the influence of individual and social factors, they are not perceived as objective facts anymore. Academic texts heavily rely on writer-reader communication and become acts of interactive communication, involving writing techniques of persuasion, argumentation and detachment etc. Hyland's model (Hyland, 1996:9) suggests the following generalizations in determining core cases of hedges, based on four basic characteristics: specification, verification, agentivity and cooperation with the reader (see Table 3).

Table 3: Hyland's taxonomy of hedges and their realization devices (Hyland, 1996)

		Sub-type	Devices
Content-oriented hedges	Accuracy-oriented (hedges propositional content)	Attribute type (hedges extent of accuracy)	precision adverbs: content disjuncts style disjuncts downtoners
		Reliability type (hedges certainty)	epistemic lexical verbs epistemic modal adjectives epistemic modal nouns content disjunct adverbs limited Knowledge
	Writer-oriented (hedges commitment)	-	epistemic lexical verbs:judgemental, evidential Impersonal expressions: passive voice abstract rhetors "empty" subjects Thematic epistemic devices Attribution to literature Impersonal reference to method, model, experimental conditions
Reader-oriented hedges (hedges assertiveness)			Epistemic lexical verbs:judgemental, deductive Personal attribution Personal reference to methods, model Offer alternatives: conditionals indefinite articles Involve reader direct questions reference to testability assumption of shared goal hypothetical, e.g. would

Content-oriented hedges consist of attribute hedges, reliability hedges and writer-oriented hedges.

1) Attribute hedge (specifies the extent to which a term accurately describes the reported phenomenon);
2) Reliability hedge (specifies writer's assessment of the certainty of the truth of a proposition);
3) Writer-oriented hedge (conceals the writer's viewpoint and avoids personal responsibility);

Reader-oriented hedge, which invites reader-involvement, accepts writer's personal responsibility for the validity of the content, was defined by Hyland as a separate type of hedges.

Following opposition of *adequacy* and *acceptability* of utterances, Hyland (1996) divided hedges into content-oriented (eg. 1) and reader-oriented (eg. 2) types, examples of which we can see below:

(1) For many years <u>it has been assumed</u> that elements contributing to manipulative or persuasive purposes of an author were <u>not appropriate</u> in academic writing. It was <u>assumed</u> that in this type of discourse only <u>asepti</u>c truths should be allowed.

(2) Among the rhetorical precepts that <u>found application in the study</u> and teaching of identity in writing was the Aristotle's notion of ethos, which *"is concerned with the character of the speaker"*—defined in terms of wisdom (phronesis), moral character (arete), and goodwill (eunoia)—"as portrayed in the speech itself".

According to this division, hedges anticipate a need to justify claims, because the author is dependent on their ratification by the reader (Hyland, 1996:6). Degree of delicacy in expressing proposition is represented by the following two types of hedges: *accuracy-oriented* (eg 3) and *writer-oriented* (eg 4).

(3) In the early years of written discourse analysis and language teaching<u>, identity did not receive much attention partly</u> because the application of written discourse analysis <u>focused primarily</u> on academic writing instruction in a <u>limited</u> range of classroom genres, and the pragmatic goal of helping writers conform to the native-speaker norm was widely accepted.

(4) <u>However</u>, no writers, not even scientists in these post-modern and postpositivist days <u>can any longer claim</u> neutrality and objectivity. They <u>cannot claim</u> to get reality right.

We will now analyze the core cases of hedges used in RAs on Applied Linguistics, beginning with *the content-oriented type*.

Content-oriented hedges

According to Hyland (1996), content-oriented hedges mitigate the relationship between propositional content and representation of reality of what the world is and what it might be. Using this type of hedges the author protects himself from a poor judgment or focus on accuracy. Depending on these functions hedges fall into two sub-types: *accuracy-oriented* and *writer-oriented.*

Accuracy-oriented hedges

There is a strong belief that academic discourse tries to demonstrate its absolute truth, based on empirical research. As Hyland (1998:73) points out

„academic writing provides an objective description of what the natural and human world is actually like and this, in its turn, serves to distinguish it from the socially contingent". Stating uncertain scientific claims with caution (Rounds, 1982; Skelton, 1988) the author reduces risk of negation on objective grounds.

The main function of accuracy-oriented hedges is to persuade the reader of objectivity and plausibility of information given. Depending on motivation of use and realization, they can be of a*ttribute* and *reliability* types.

Prominent generic fact about RAs lies in a strong link between existing knowledge and results originated in academic discourses. As scientific theories are constantly being reassessed and reevaluated, the authors of the academic texts should take the premises for the readers to accept their claims as true. For this purpose, the authors use attribute hedges, which allow certain deviations from idealized state of fact.

Attribute hedges cluster around pragmatic core with "the degree of precision adverbs" (Ernst, 1984 cited in Hyland, 1996), similar to "rounders" (Prince et al., 1982) or stance adverbs (clearly, probably, apparently) present the attitude or assessment of the speaker/writer with respect to the proposition (Biber, 2006).

Interestingly, that stance is defined as "a textual voice", conveying the attitudinal manner of the writer (Hyland, 2001, p. 176). Similarly, Conrad and Biber (2000) identifies stance as attitudinal stance which reflects the writer's attitude towards an issue, event, or person. Functioning like "downtoners" (Quirk et al., 1972, cited in Hyland, 1996, p. 11), *attribute hedges* weaken the force of an attribute varying in their strength (see eg. 5, 6, 7).

(5) Data exposed that there are <u>more</u> instances of self-mentioning pronouns in the corpora of English with 0.64% in comparison with Psychology (0.47%).

(6) Let us have a brief look at sciences. In general terms, hard sciences have the label of reliable because they seem to be involved with objective, <u>empirically</u> verifiable knowledge.

(7) These conventions might ensure academic writers that their work will <u>actually</u> be recognized by readers and accepted by their colleagues in that discourse community.

Writer-oriented hedges

Writer-oriented hedges, as Hyland represents them, are writer-focused and „aim to shield the writer from the consequences of opposition by limiting personal commitment"(Hyland 1996:14). The considerable difference between accuracy-oriented hedges, which are proposition-focused, and writer-oriented is the fact of diminishing the claims an author's presence in the text by maximum detachment from the author's proposition. The distinctive feature of the writer-oriented hedge is absence of writer agency, which can be reached with the help of passive verbal constructions (e.g. it might be expected - 8), or the construction with abstract

meaning (e.g. data indicate - 9), judgemental epistemic verbs (e.g. assume, predict, propose - 10), evidential verbs (e.g. appear, seem - 11) etc.

(8) As Koutsantoni (2004:172) affirms, the use of boosters "<u>can be motivated</u> by epistemological reasons and <u>be based</u> on the results and findings themselves, and combined with the social goals in scientific communities, such as gaining agreement and consensus by appealing to common knowledge and shared understandings.

(9) <u>Ideational aspects made reference</u> to the writer's generation and organization of the ideas by means of techniques such as brainstorming or outlining and /or the use of sources to write well-documented texts by gathering ideas (Article #7).

(10) From interviews, Gina <u>stated</u> that her major obstacle with writing was engagement and motivation.

(11) Findings revealed that experienced authors used personal pronouns significantly in the introduction of research articles.

One of the effective ways of diminishing writer's responsibility in academic text is a shift of accent from the author's claim to the procedures, the methods and the models under which the research results were procured.

The motivation for writer-oriented hedges is the preliminary character of the scientific research per se, which needs to be hedged against later misinterpretation, showing premature character of the results of novice writers.

Summing up, the use of content-oriented hedges, we presume that they enable the writer of the academic text both negotiate the precision of his claims and, at the same time, convey a distant attitude to them, showing greater or smaller degree of reliability. Fuzziness of hedges, as Hyland admits, sometimes makes the process of classification complicated enough to relate one hedge to a certain category exclusively. This might be explained by their multipragmatic functions, suggesting that most of the core hedging devices will be at the periphery between accuracy- and writer-oriented hedges.

Reader-oriented hedges

The role of the reader in accepting or rejecting the claims of the author (the author's voice) was described by Matsuda (2001) as "the amalgamative effect of the use of discursive and non-discursive features that language users [appropriate], deliberately or otherwise, from socially available yet ever-changing repertoires" (Matsuda, 2001, p. 40). Hyland classifies these discursive and non-discursive features as the writer's *persona* (1996, p. 18), meaning by it the author's degree of subjectivity, and information about the writer's professional attitudes to the discipline. According to Hyland, every academic writer is negotiating with the reader reliability of his claims in a form of a dialogue. And hedges, in their turn,

serve as a certain inviting strategy, addressing the reader as a capable interlocutor ready to view his claims with open critical mind.

The core examples of reader-oriented hedges show a certain force of diminishing categorical statement with the help of different devices (sometimes a combination of devices) like in examples below:

(12) <u>Although</u> ethos and voice have evolved into similar concepts over the years, and <u>although</u> it is likely that the evolution of voice was influenced by ethos and other conceptions of writer identities in some ways, it <u>would not</u> be accurate to say that voice originated from ethos (Matsuda, 2015, p. 142).

(13) This <u>study might be helpful</u> for academic writing of EFL learners.

(14) <u>In spite of these findings</u>, it is also <u>possible</u> that our learners <u>might have upgraded</u> their linguistic concerns about L2 accuracy when writing, although <u>our data collection instruments</u> may not have been <u>sufficiently</u> adequate to capture this.

The repetition of adverbs although (eg. 12), or a combination of adverb+adjective sufficiently+adequate (eg. 14) function as a downtoners (Prince, 1972), diminishing significance of the research results obtained, and engaging the readers into active participation in ratification of claims by using adverbs of probability and hypothetic would (eg. 12) or modal verb might (eg. 13).

Additional softening of criticism in the academic writing is achieved with the use of first-person pronouns (I, we) and their possessive counterparts (my, our). Multifunctional character of the first-person pronouns in academic texts has been stated previously by Clark and Ivanic (1997), Hyland (2002), Tardy (2012). But apart from being an important structural component of the discourse and presenting personal experience in formulating statement (Clark & Ivanic, 1997), self-mentioning pronouns can considerably influence the angle of text perception for the reader. In this case, the first-person pronouns and expressions of personal belief weaken claims because they are inconsistent with the supposed universality of scientific knowledge (Myers, 1989, p. 14). Used as hedges, as Hyland states, personal pronouns signal a personal opinion, not the universal truth, and allow the reader to choose the more persuasive explanation.

Results and discussion

Corpus for analysis consisted of 20 scientific research articles on topics, related to applied linguistics, published from 2010 to 2017 in scientific journals with an open access policy. Considering that Applied Linguistics is interdisciplinary subject related to **education, psychology, communication research, anthropology, and sociology**, in order to avoid any possible variation across sub-disciplines, I have compiled the corpus from research papers in the specific subfields of Applied Linguistics: such as Educational linguistics (5 research

articles), Psycholinguistics (5 research articles), Sociolinguistics (5 research articles) and Pragmatics (5 articles), structured according to IMRAD pattern (Introduction –Methods-Results –and – Discussion structure).

After the selection, RAs were analyzed in terms of the frequency of hedges in the articles. Thus, the occurrences of hedges in each article were identified and classified. Tables, Figures, footnotes and captions were not included to form the corpus of almost 70,089 words.

The first phase of analysis included distribution of the overall hedging devices into the following two categories (lexico-grammatical) and syntactic (devices): lexical verbs, epistemic nouns, modal verbs, adverbs, adjectives and "if"-clauses, rhetorical questions etc. Figure 1 presents raw numbers of lexical, grammatical and syntactic devices in RAs across specific sub-fields of Educational Linguistics, Psycholinguistics, Sociolinguistics and Pragmatics. Those devices, which we couldn't refer, either to lexical or grammatical category, were included into "Fuzzy category" or represented in the Figure 2 below.

Figure 1: Raw numbers of lexico-grammatical hedging devices in RA on Applied Linguistics:
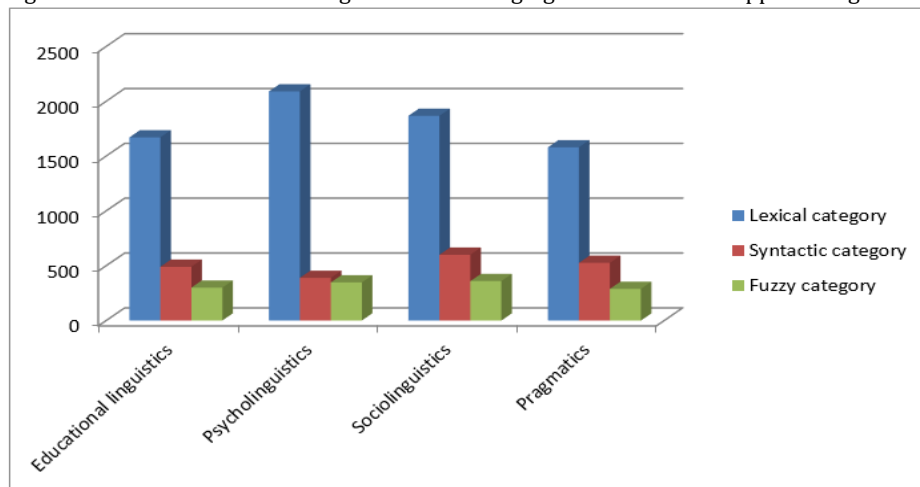
Since one and the same lexical device can form different combinations of hedged information, the data obtained from the corpus were manually distributed according to the following parameters (lexical verbs, epistemic nouns, modal verbs, adjectives and adverbs) and calculated in every research article to form the frequency and percentages of their use (see Figure 2).

Figure 2: General distribution of lexical devices of hedges in RA on Applied Linguistics:
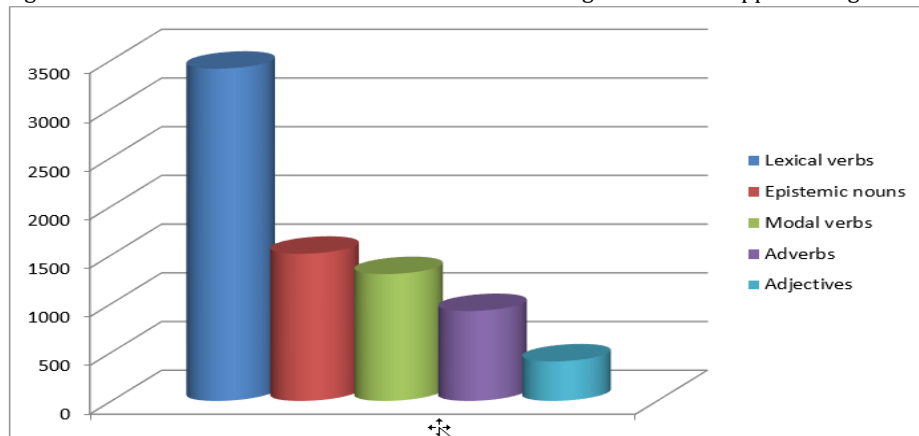
The analysis revealed that the hedging devices in research articles on Applied linguistics were represented more by lexical verbs, which constituted 3411 cases of use. This signifies the fact, that the writers of research articles are trying to arrage their persuasive techniques appealing to the reader's attention with the help of epistemic lexical verbs.

Table 4: Distribution of hedges in research articles on applied linguistics by subdisciplines per 1,000 words

Hedge-type	Educational Linguistics	Psycholinguistics	Sociolinguistics	Pragmatics
1. Content-oriented	55.1	48.8	49.5	44.3
Accuracy-oriented	25.5	19.5	22.3	20.4
Attribute type	16.4	15.5	12.6	10.3
Reliability type	2.2	3.8	4.6	9.7
Writer-oriented	11.1	10.6	10.0	3.9
Reader-oriented	**60,5**	**79.2**	**68,4**	**59.8**
Total	**115.6**	**128**	**117.9**	**104.1**

Table 3 shows prevailing number of reader-oriented hedges in Research Articles. It was an expected outcome, as this type of hedges recognises the need for reader's acceptance in accrediting knowledge and respond to the possibility of opposition to claims on interpersonal grounds. Here writers consider both the reader's role in confirming knowledge and the need to conform to community expectations regarding deference to colleagues' views. Multiple examples are therefore distinguished by features addressed to the needs of an audience, which anticipates involvement in negotiating claims.

The findings for distribution of hedging devices and types of hedges in this study represented less evident contrasts between subdisciplines of one discipline than between „hard" and „soft" sciences, but still they show a certain gradation among the categories of hedges (e.g. the lowest level of reliability hedges in Pragmatics and and the highest in Educational Linguistics). Even more discursive nature of these soft disciplines neccesitated emphasising their greater reliance on multi-modality and arguments which require frequent reference to tables, figures, photographs, examples, and so on. This tendency can be significantly observed in comparing research articles dated by 2010 and 2017. We didn't set it as a study objective to analyse the use of Tables, Graphs, Figures and Footnotes in this paper. So we will relate this observation to limitations of this paper, which deserves attention in further research of multimodality.

Conclusion

Conventions of academic discourse call the writers of Research Articles for effective use of interactional techniques, on the one side and building their academic identity (voice), on the other. Balancing between these two extremes, academic writers are mastering a scientific art of politeness (Myers, 1987) in formulating their claims. Hedges help the authors to mitigate the force of their claims and make them less categorical in the eyes of colleagues. The study results confirmed that content-oriented hedges enable the writers of the research articles both negotiate the precision of their claims and, at the same time, convey a distant attitude to them, showing greater or smaller degree of reliability. Although, Hyland's taxonomy of hedges and their devices seemed efficient in certain contexts, it lacked a uniform attitude to hedges distinction in other situations. The reasons for this we see in the multifunctional character of hedges in pragmatic aspect and innate vagueness of hedges in their semantic basis. Fuzziness of hedges, as Hyland himself admits, sometimes makes the process of classification complicated enough to relate one hedge to a certain category exclusively. The current study attempted to reveal the frequencies and types of hedges within one "soft" discipline Applied Linguistics, including RAs from four related sub-disciplines Educational linguistics, Psycholinguistics, Sociolinguistics and Pragmatics. In spite of the fact, that the findings for distribution of hedging devices and types of hedges in this study represented far less evident contrasts within four sub-disciplines than between „hard" and „soft" sciences, but they still show a certain degree of disproportion, based on author's degree of subjectivity, his or her degree of commitment to the topic of research and expertise in academic writing ("novice" or "expert" writers). In this study we purposefully tried to avoid contrastive rhetoric framework, accentuating cross-cultural and national aspects of writing. It may be considered as one of the limitations of this paper. Implications for educational linguistics will concern study of hedging language in EAP courses

for EFL learners according to the norms and conventions of particular academic disciplines. Further research implications might be much more fruitful within interdisciplinary approach, combined with discourse analysis of broader fields of knowledge and cognitive linguistics.

References
Bereiter, C., & Scardamalia, M. (1987). *The psychology of written composition.* NJ:Erlbaum.

Biber, D. (1988). Variation across Speech and Writing.Cambridge:Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511621024.

Biber, D. (2006). *University Language: A Corpus-Based Study of Spoken and Written Registers.* Amsterdam/Philadelphia: John Benjamins. http://dx.doi.org/10.1075/scl.23.

Blagojevic, S. (2004). Metadiscourse in academic prose: A contrastive study of academic articles written in English by English and Norwegian native speakers. *Kalbu Studijos (Studies about Languages)*, 5, from http://www.kalbos.It/txt/5/08/htm.

Çakır, H. (2016). Native and Non-Native Writers' Use of Stance Adverbs in English Research Article Abstracts, *Open Journal of Modern Linguistics*, 2016, 6, 85-96 http://dx.doi.org/10.4236/ojml.2016.62008.

Clark, R., & Ivanic, R. (1997). *The politics of writing. London, UK: Routledge.*

Clyne, M. (1991). The sociolinguistic dimension: The dilemma of the German-speaking scholar. In H. Schroder (Eds), *Subject-oriented texts: Languages for special purposes and text theory* (pp. 49-68). Berlin & New York: Walter de Gruyter.

Conrad, S., & Biber, D. (2000). Adverbial Marking of Stance in Speech and Writing. In S. Hunston, & G. Thompson (Eds.), Evaluation in Text: Authorial Stance and the Construction of Discourse (pp. 56-73). Oxford: Oxford University Press.

Crompton, P. (1997). Hedging in academic writing: some theorethical problems. English for Specific Purposes, 16(4), 271-287. Retrieved from: https://www.academia.edu/478555/Hedging_in_academic_writing_Some_theoretical_problems.

Ernst, T. B. (1984). *Towards an integrated theory of adverb position in English*. Indiana Linguistics Club.

Grabe, W. & Kaplan, R. B. (1997) *Theory and practice of writing: an applied linguistic perspective.* Harlow: Pearson Education.

Hinkel, E. (1997). Indirectness in L1 and L2 academic writing. *Journal of Pragmatics*, 27, 361-386.

Hinkel, E. (2005). Hedging, inflating, and persuading in L2 academic writing. *Applied Language Learning,* 15(1), 29-53.

Holmes, J. (1984). Modifying İllocutionary Force*. Journal of Pragmatics, 8, 345-365.* http://dx.doi.org/10.1016/0378-2166(84)90028-6.

Hyland, K. (1996). Writing without Conviction: Hedging in Science Research Articles. Applied Linguistics, 17, 433-454. http://dx.doi.org/10.1093/applin/17.4.433.

Hyland, K. (1998). Hedging in Scientific Research Articles. Amsterdam: John Benjamins. http://dx.doi.org/10.1075/pbns.54.

Hyland, K. (1999). Disciplinary Discourses: Writer Stance in Research Articles. In H. Candlin, & K. Hyland (Eds.), Writing: Texts, Processes and Practices (pp. 99-121). London: Longman.

Hyland, K. (2000). Disciplinary Discourses. Social Interaction in Academic Writing. London: Longman.

Hyland, K. (2001). Bringing in the Reader: Addressee Features in Academic Writing. Written Communication, 18, 549-574. http://dx.doi.org/10.1177/0741088301018004005.

Hyland, K. (2002). Authority and Invisibility: Authorial Identity in Academic Writing. Journal of Pragmatics, 34, 1091-1112. http://dx.doi.org/10.1016/S0378-2166(02)00035-8.

Hyland, K. (2004). Perspectives on Genre. In K. Hyland (Ed.), Genre and Second Language Writing (pp. 24-50). Ann Arbor, MI: The University of Michigan Press.

Hyland, K. (2005). Stance and Engagement: A Model of Interaction in Academic Discourse. Discourse Studies, 7, 173-192. http://dx.doi.org/10.1177/1461445605050365.

Hyland, K. (2017) Metadiscourse: What is it and where is it going? *Journal of Pragmatics*, 113, 16-29 https://doi.org/10.1016/j.pragma.2017.03.007.

Hyland, K., & Tse, P. (2004). Metadiscourse in Academic Writing: A Reappraisal. *Applied Linguistics,* 25, 156-177. http://dx.doi.org/10.1093/applin/25.2.156.

Kreutz, H., & Harres, A. (1997). *Some observations on the distribution and function of hedging in German and English academic writing*. In Duszuk, A. (Ed.), Culture and styles in academic discourse. Mouton de Gruyter: Berlin, pp.181-202.

Lakoff, G. (1972). Hedges: A study in meaning criteria and the logic of fuzzy concepts. *Chicago Linguistic Society Papers*, 8, 183-228.

Lewin, B. (1998) Hedging: Form and Function in Scientific Research Texts. *Genre Studies in English for Academic Purposes.* Vol. 9. Filologia, pp. 89-108.

Markkanen, R., & Schroder, H. (1997). *Hedging: a challenge for pragmatics and discourse analysis*. In Markkanen, R., Schroder, H. (Eds.) Hedging and discourse:

approaches to the analysis of a pragmatic phenomenon in academic texts, pp. 3-20. Berlin: Walter de Gruyter.

Matsuda, P.K. (2015) Identity in written discourse. *Annual Review of Applied Linguistics,* 35, 140-159. https://doi.org/10.1017/S0267190514000178.

Mauranen, A. (1993). Contrastive ESP rhetoric: Metatext in Finnish-English economics texts. *English for Specific Purposes,* 12, 3-22. https://doi.org/10.1016/0889-4906(93)90024-I.

McCutchen, D. (2011). From novice to expert: implications of language skills and writing-relevant knowledge for memory during the development of writing skill. *Journal of writing research,* 3(1), 51-68*.* http://dx.doi.org/10.17239/jowr-2011.03.01.3.

Meyer, P. (1997). Hedging strategies in written academic discourse: Strengthening the argument by weakening the claim. In Markkanen, R., Schroder, H. (Eds.), *Hedging and Discourse: Approaches to the Analysis of a Pragmatic Phenomenon in Academic Texts*, pp.21-41. Berlin, New York: Walter de Gruyter.

Myers, G. (1989). The pragmatics of politeness in scientific articles. *Applied Linguistics*, 10, pp.1-35.

Nelson, N. & Castello, M. (2012) *Academic writing and authorial voice*. doi: 10.1108/S1572-6304(2012)0000024007.

Prince, E., Frader, J., & Bosk, C. (1982). On hedging in physician-physician discourse. In R. D. Pietro (Eds.), Linguistics and the professions Hillsdale, NJ: Ablex.

Rounds, P. (1982). *Hedging in written academic discourse: Precision and flexibility*. Ann Arbor: The University of Michigan. Mimeo.

Salager-Meyer, F. (1994). Hedges and textual communicative function in medical English written discourse. *English for Specific Purposes*, 13(2), 149–170.

Salager-Meyer, F. (1997). I think that perhaps you should: A study of hedges in written scientific discourse. In T. Miller (ed.), *Functional approaches to written texts: Classroom applications* (pp. 127–143). Washington DC: United States Information Agency.

Salager-Meyer, F. (1998). Language is not a physical object. *English for Specific Purposes,* 17, 295-303.

Skelton, J. (1988). The care and maintenance of hedges. *ELT Journal*. 42(1), 37-43. doi: 10.1093/elt/42.1.37.

Vassileva, I. (1997). Hedging in English and Bulgarian academic writing, culture, and style in academic discourse. Mouton de Gruyter: Berlin.

Vassileva, I. (2001). Commitment and detachment in English and Bulgarian academic writing English for Specific Purposes 20(1), 83-102. https://doi.org/10.1016/S0889-4906(99)00029-0.

Vazquez, I. & Giner, D. (2009). Writing with conviction: the use of boosters in modeling persuasion in academic discourses. *Revista Alicantina de Estudios Ingleses* 22 (2009), 219-237. https://doi.org/10.14198/raei.2009.22.14.

Ventola, E. (1997). Modalization: Probability – an Exploration into its Role in Academic Writing. In Duszak, A. (Ed.), *Culture and Styles in Academic Discourse.* Mounton de Gruyter: Berlin, pp.157-180.

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