# ЛИНГВИСТИКА

# Disciplinary, generic and culture-specific writing conventions: Which matter in English-language academic writing by Russian authors?

## Olga A. Boginskaya[1]

*[1] Irkutsk National Research Technical University, Irkutsk, Russian Federation,*
*olgaa_boginskaya@mail.ru*

**Abstract.** The article deals with insufficiently studied academic prose by Russian writers who have been actively using English in academic settings only for the last fifteen years. To meet the requirements of international academia, Russian scholars need to have a good command of English for performing academic tasks, including publishing their research findings in international journals in order to get promoted in the field. The study has been inspired by the increasing interest in variations in the use of metadiscourse in English academic texts across disciplinary boundaries. Its main focus is on the repertoire and distribution of interactional metadiscourse markers in research article abstracts by nonnative English writers working in social sciences and engineering. In order to investigate metadiscourse in Russian-authored academic writing from a cross-disciplinary perspective, this study adopted a combination of quantitative and qualitative methods. Data collected from 240 research article abstracts was examined for cross-disciplinary differences in the use of metadiscourse. Hyland's taxonomy of interactional metadiscourse was adopted for the analysis. This study aimed to confirm the findings obtained by other researchers who claim that social science authors interact more with the audience than their counterparts in engineering and that differences in the deployment of metadiscourse are more influenced by the disciplinary or generic norms rather than cultural backgrounds of writers. To achieve this aim, the study analyses disciplinary preferences in shaping knowledge through the employment of metadiscourse seeking to identify (1) cross-disciplinary differences in the frequency of occurrence of metadiscourse markers; (2) cross-disciplinary differences in the frequency of the types of hedging, boosting, attitude, self-mention and engagement; (3) cross-disciplinary differences in the use of lexical units that serve metadiscourse functions. The results revealed that while research article abstracts derived from the social science journals included five categories of interactional metadiscourse (hedging, boosting, attitude, engagement, and self-mention), in engineering research article abstracts only four types (hedging, boosting, attitude, and self-mention) appeared. The frequency of occurrences of metadiscourse categories and types also varied across disciplines. The findings confirmed the assumption that metadiscourse is expressed in accordance with the accepted disciplinary and genre-specific norms rather than influenced by cultural backgrounds of L2 writers. Due to a small number of research article abstracts collected to build the corpus, the research results can be interpreted only as trends in the two disciplines. Through a study of interactional preferences of writers from a larger number of disciplines, we will learn more about rhetorical practices and values.

**Keywords:** research article abstract, academic discourse, metadiscourse, hedging, boosting, self-mention, engagement

## Introduction

The article deals with the disciplinary aspect of English-medium academic prose by Russian writers who have been actively using English in academic settings only in the last fifteen years. To meet the requirements of international academia, Russian scholars need to have a good command of English for performing academic tasks, including publishing their research findings in international journals in order to get promoted in the field. For example, *Tomsk State University Journal of Philology* states that authors are to attach three files, including the manuscript with an abstract and key words in English[1].

Previous research into research article (RA) abstracts has attempted to reveal their rhetorical structure [1–3], genre patterns [4], linguistic features [5], cross-cultural [6–8] and interpersonal features [9], subjectivity, evaluation and engagement elements [10]. Ji, for example, made an attempt to find similarities and differences in the structure of abstracts written by native English speakers and English learners from China [1]. Jing and Jing explored how Chinese and English speakers use metadiscourse patterns in their RA abstracts and found that the former used fewer metadiscourse markers than native English speakers who were more concerned with creating an authorial presence and engaging their readers [11]. Kozubíková Šandová investigated RA abstracts from a different perspective. Her study focused on diachronic variations in the use of metadiscourse markers in RA abstracts from the field of applied linguistics published over the last 35 years and revealed that the distribution of these linguistic means underwent diachronic changes [5].

Previous studies have also shed light on RA abstracts in various disciplines: medicine [12], applied linguistics [13–15], engineering [6], law, or in several disciplines. Rashidi and Alihosseini, for instance, investigated the difference in the use of metadiscourse markers in sociology and engineering abstracts [16]. Alonso Almeida compared the categories of evidentiality in English and Spanish abstracts by Spanish writers in the fields of medicine, computing and law [17]. The study revealed significant disciplinary variations in metadiscourse patterns. Belyakova's study aimed to conduct a comparison of RA abstracts written by Russian and native English writers in geoscience. The results allowed for hypotheses on some distinctive features of abstracts written by Russian geoscientists [6].

As much as metadiscourse has been studied, little attention has been paid to how Russian speakers of English employ interactional devices in English discourse and whether their choices of metadiscourse patterns are in line with those

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[1] URL: https://journals.tsu.ru/philology/en/&journal_page=text&pageid=658

made by authors with different cultural backgrounds. Using a corpus of RA abstracts by academic writers from Russia, this study aims to confirm the findings obtained by other researchers who claim that social science authors interact more with the audience than their counterparts in engineering [18–19] and that differences in the deployment of metadiscourse are more influenced by the disciplinary norms rather than cultural backgrounds of writers [20–21]. To reach the aim, the study analyzes preferences in shaping knowledge through the employment of metadiscourse seeking to identify

1) cross-disciplinary differences in the frequency of occurrence of metadiscourse markers;

2) cross-disciplinary differences in the frequency of the types of hedging, boosting, attitude, self-mention and engagement;

3) cross-disciplinary differences in the use of lexical units that serve metadiscourse functions.

## Materials and methods

The analysis was conducted on a corpus of abstracts taken from ten Scopus-indexed journals in the social sciences and engineering: *Russian Journal of Linguistics* (four issues per year), *Tomsk State University Journal of Philology* (six issues per year), *Ekonomicheskaya Politika* (six issues per year), *Russia in Global Affairs* (four issues per year), *Voprosy Ekonomiki* (12 issues per year), *Computer Optics* (six issues per year), *Sustainable Development of Mountain Territories* (four issues per year), *Renewable Energy* (12 issues per year), *Materials Today Energy* (four issues per year), and *Energies* (four issues per year). Acknowledging the methodological weakness associated with possible proofreading and editing by professional translators, it is nevertheless assumed that RA abstracts were written by the authors themselves. All these journals demand that the authors append an English version of the abstract, which was also considered when selecting journals for the present study.

240 abstracts were randomly selected from the recent issues of these journals and divided into two parts – sub-corpus (SC) 1 and sub-corpus 2 – by the subject area of the journal they have been taken from (120 social science abstracts and 120 engineering abstracts). The number of tokens in each sub-corpus was 28,676 and 24,112, which makes 52,800 tokens altogether.

The following are the steps of the analysis as it appears in the article:

(1) Deriving RA abstracts from the electronic versions of the selected journals and exporting them to two Microsoft Word files by the field of knowledge.

(2) Compiling two sub-corpora containing social sciences RA abstracts and engineering RA abstracts.

(3) Examining each sub-corpus for presence of metadiscourse devices.

(4) Labeling each instance as a metadiscourse device based on the contextual analysis in order to be certain about its function as metadiscourse.

(5) Arranging the metadiscourse markers into groups based on the above-mentioned taxonomies of metadiscourse and its types.

(6) Counting the raw numbers of metadiscourse markers for each group in each sub-corpus.

(7) Normalizing the occurrences of the metadiscourse markers found in each sub-corpus to 1000 words.

(8) Counting the raw numbers of lexical units most frequently used as metadiscourse markers and normalizing the occurrences to 1000 words for each group in each sub-corpus.

(9) Summarizing the results obtained in a table format.

## Theoretical framework

Metadiscourse markers are lexical items used to organize texts, to express attitudes, to connect the reader to the writer and to ensure text cohesion. As Hyland put it, metadiscourse markers assist in showing how we use language out of consideration for our readers based on our estimation of how best we can help them process and comprehend what we are saying [22]. In contrast to discourse markers, which play a role in managing the flow and structure of discourse, metadiscourse markers are mainly used to signal the writer's communicative intent in presenting propositional content. As Schiffrin defined them, discourse markers are linguistic expressions comprising members of word classes such as conjunctions, interjections, adverbs, and lexicalized phrases which bracket units of talk [23]. Discourse and metadiscourse markers occur together, in the same sentences, each expressing their own "content": the former are concerned with the text and the latter with the text and its reception, helping "relate a text to its context by assisting readers to connect, organize, and interpret material in a way preferred by the writer and with regard to the understandings and values of a particular discourse community" [14. P. 157].

Defining metadiscourse as an explicit set of lexical items, Hyland described metadiscourse elements as facets of the text that signify writer–reader interactions. Hyland's model includes two categories of metadiscourse: interactive and interactional [22]. While interactive markers serve to organize information in convincing ways, interactional devices help build a relationship with the reader by expressing doubt or certainty or various other attitudes towards the proposition. Since the current study focuses only on interactional metadiscourse, Table 1 presents its main types in Hyland's model.

Hedging and boosting devices found in the corpus were analyzed using the terminology employed by Hyland and Jiang [24]. The authors identified three ways of conveying respect for colleagues' views, including plausibility hedges, downtoners, and rounders, and three ways of shutting down alternative voices, including certainty, extremity and intensity boosters. In an attempt to analyze attitudinal stance in the two sub-corpora, the terminology introduced by Dueñas was used [25]. The model includes three types of attitude: assessment markers, emotion markers, and significance markers. The types of engagement were analyzed based on Hyland's taxonomy that includes five ways of involving the reader

in a dialogue: reader mentions, directives, knowledge appeals, questions, and personal asides [26].

**Hyland's model of interactional metadiscourse**

| Type | Function |
|---|---|
| Hedges | Acknowledge alternative viewpoints, withhold commitment |
| Boosters | Suppress alternatives, emphasize certainty |
| Attitude markers | Express attitudes, provide assessment |
| Self-mention markers | Manifest the explicitness of authorial presence |
| Engagement markers | Involve readers in a dialogue |

## Results and discussion

The metadiscourse markers found in the corpus are presented in Table 2. The table summarizes the raw and normalized frequencies of metadiscourse in the two sub-corpora.

**Raw and normalized frequencies of interactional metadiscourse**

| Interactional metadiscourse markers | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| Hedges | 383 | 20.2 | 27 | 1.6 |
| Boosters | 135 | 7.1 | 88 | 6.6 |
| Attitude markers | 201 | 10.6 | 51 | 3.6 |
| Self-mentions | 151 | 7.9 | 18 | 1.3 |
| Engagement markers | 34 | 1.8 | 0 | 0 |
| Total | 794 | 47.6 | 184 | 13.1 |

Table 2 shows that the raw and normalized frequencies of metadiscourse differ across disciplines. A total of 794 metadiscourse devices were found in SC1, and 184 in SC2. The raw and normalized frequencies show that in the social sciences the number of metadiscourse markers was four times as large as that in the hard sciences. In the social sciences, the most frequent metadiscourse markers were hedges, accounting for 20.2 per 1000 words. In engineering, boosters appeared more frequently. In the social sciences, attitude markers were four times more frequent and used to emphasize debatable or interesting findings, since in the social sciences the novelty and usefulness of the study are less evident than in engineering. The analysis found a larger number of self-mentions in the social sciences. Engagement markers appeared only in the social sciences, where they were the least frequently used metadiscourse devices.

**Hedges.** Hedges downplay "a writer's commitment to a proposition, modifying its scope, relevance or certainty" [22. P. 176]. They are used to "withhold complete commitment to imply that a claim is based on the author's plausible reasoning rather than certain knowledge" [24. P. 9].

The sub-corpora exhibited differences in the employment of hedges. Regarding the normalized frequencies, they were significantly different: 20.2 in the social sciences and 1.6 in engineering. Even though engineering authors tended to deploy modal verbs for hedging effectively, they seemed to underuse other lexical units in comparison with their counterparts from the social sciences. This might be due to the fact that hedging might weaken the knowledge claim and reduce the degree of reliability for the authorial statement, which is typical of the soft sciences, where authors need more space for their interpretation [5], and their studies are less rooted in empirical research. As Takimoto put it, the social sciences are more interpretative and less abstract in producing knowledge, which requires more hedges and favors subjectivity [21]. In the social sciences, results are provisional, they are not usually reliant on facts or measures. Consequently, authors tend to make their claims tentatively in order to convince readers who can approve or refuse them based on their judgments of the credibility of the research results presented by the author. In contrast, the hard sciences are usually more fact-oriented and impersonal, which makes authors avoid hedging and produce objective statements. Consider some examples of the hedging devices found in the corpus.

*Professional stupidity is **usually** realized through ignorance of profession, i.e. ignorance of things which are obvious for this profession.* (SC1)

In the example, the downtoner "usually" as a type of hedging is used to protect the writer against inaccuracy of research results by mitigating the intensity of the claim.

In the following example, the plausibility hedge helps create a distance from the authorial statement and signal that the claim is based on an assumption rather than a fact.

*The approach **can** reduce the number of image elements, which helps to reduce the complexity of processing algorithms, meanwhile the expanded superpixels more accurately correspond to the image objects* (SC2)

Using the plausibility hedge, the writer can distinguish between information as fact and information as opinion. The modal verb *can* emphasizes the uncertainty of the authors' position by allowing information to be presented as open to negotiation. The use of this verb expresses an epistemic judgement, which means that the authors are not certain whether the approach does in fact significantly reduce *"the number of image elements"*.

The frequent use of plausibility hedges in social sciences seems to meet the established discipline requirements of being tentative in one's claims. Hedging serves to express subjectivity in argument since divergent views are common in the soft sciences. In contrast, in the hard sciences, precision, accuracy and objectivity rather than tentativeness and subjectivity are favored.

Rounders found in the corpus contributed to a compromise between the need for accuracy with numerical data and careful argumentation. The more frequent use of this type of hedging in the engineering sub-corpus seems to meet the discipline-specific nature of information with a large number of numerical data, as illustrated in the example.

*A promising capsule design was identified which has a more than 20% higher storage capacity than the other shapes and provides a reasonable thermal power output of **approximately** 4 kW during the phase change of the storage material*. (SC2)

The frequency distribution between the three types of hedging is presented in Table 3.

Table 3

**The raw and normalized frequency distributions between the types of hedging**

| Types | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| Downtoners | 158 | 8.3 | 5 | 0.3 |
| Rounders | 15 | 0.8 | 9 | 0.6 |
| Plausibility hedges | 211 | 11.1 | 13 | 0.8 |

As can be seen, the rankings and frequencies of the types of hedging differ in the two sub-corpora. The analysis also revealed that hedging markers in the corpus of RA abstracts were mainly expressed by the modal verbs *may* and *can*, the adjective *possible*, the adverbs *possibly, approximately,* and *rather*. The most frequent lexical units used for hedging in SC1 was *can* (7.2 instances in 1000 words). In SC2, *can* and *approximately* were used most frequently (0.5 and 0.35 instances in 1000 words, respectively) (Table 4).

Table 4

**Occurrences of the most frequent lexical items used for hedging**

| Hedging device | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| may | 137 | 7.2 | 4 | 0.3 |
| possible | 61 | 3.2 | 3 | 0.2 |
| can | 47 | 2.5 | 7 | 0.5 |
| rather | 30 | 1.6 | 1 | 0.05 |
| probably | 15 | 0.8 | 2 | 0.1 |
| approximately | 0 | 0 | 5 | 0.35 |

**Boosters.** The corpus-based analysis revealed that boosting devices were almost equally used in both sub-corpora: 7.1 in SC1 and 6.6 in SC2 per 1000 words. The relatively high frequency of boosters in engineering might be attributed to the disciplinary belief that truth is self-evident without the need for argument [27]. Experiential knowledge and empirical evidence are crucial in reasoning, while possible counterarguments are given less attention. The frequent use of boosters by engineering authors indicates that they tend to occupy a stronger stance and were keener to express their convictions and highlight the significance of their studies. As Hyland claimed, writers use boosters to emphasize the strength and suggest the efficacy of the relationship between data and claims, which is more relevant to hard science than to soft science writing [28].

Here are examples which illustrate the employment of certainty boosters to remove any doubts about the claims closing down potential opposition and invest them with the confidence of factual reliability.

*Results of the Granger causality Wald test, fixed-effects and random-effects regressions **clearly demonstrated** that growth in population and GDP directly correlates with CO2 emissions in high- and low-income economies, while renewable energy consumption has an indirect correlation* (SC1)

The compound boosting device consisting of the adverb *clearly* and the cognitive verb *demonstrate* assists the writers in leading the readers to the same reasonable inferences. The authors choose to prevent possible responses from the reader.

*The results **show** that despite reviewers' individual styles there are some culture-specific traits in the styles of reviews.* (SC2)

The certainty booster *show* is used here to express conviction with which the authors communicate their research results.

The less commonly observed types of boosting were intensity and extremity markers. Consider examples of each, with the first one illustrating an intensity booster, and the second one featuring an extremity booster.

*Electric vehicles have a limited travel range and are **extremely** heavy* (SC2)

*One of the questions that cause **the greatest** discrepancy in the views of the Russian economists is the attitude to the creation of "nationally oriented" economic theory.* (SC1)

In these examples, the adverb *extremely* intensifies the emotive strength of the statement, and the superlative form *the greatest* marks the high end of a continuum thus helping remove any doubts.

The frequency distribution between the three types of boosting is presented in Table 5.

The table shows that boosters not only differed in frequency across disciplines, but were also used differently in terms of the types with intensity boosters ranking second in SC1 and third in SC2 and extremity boosters ranking second in SC2 and third in SC1.

The study also revealed similarities and differences in the boosters most frequently used in the two sub-corpora. The verb to *show* ranked first in both sub-corpora (1.9 and 1.3 instances in 1000 words, respectively), while the frequency distribution between other lexical units was different (Table 6).

Table 5

**The raw and normalized frequency distribution between the types of boosting**

| Types | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| Certainty boosters | 78 | 4.1 | 68 | 4.9 |
| Intensity boosters | 30 | 1.6 | 9 | 0.6 |
| Extremity boosters | 27 | 1.4 | 11 | 0.8 |

**Occurrences of the most frequent boosters (per 1000 words)**

| Boosting device | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| to show | 36 | 1.9 | 18 | 1.3 |
| in general | 23 | 1.2 | 14 | 1 |
| in particular | 17 | 0.9 | 17 | 1.2 |
| mainly | 9 | 0.5 | 8 | 0.6 |
| must | 8 | 0.4 | 4 | 0.3 |
| definitely | 4 | 0.2 | 13 | 0.9 |

**Attitude markers.** The attitude markers ranked second in both SC1 and SC2. They were used to express opinions, evaluate findings and research objects and emphasize problems. The following instance shows one occurrence of the assessment marker the function of which is to reveal the author's evaluation of the research results as ideational information.

*This method, combined with methods of spectral-phase Fourier transforms and statistical tests, is the most effective way to obtain **reliable** quantitative results for solving engineering problems of atmospheric wave optics* (SC2)

Here attitude is signaled by the adjective *reliable* conveying positive evaluation of the results which can be obtained by the authors.

*Of course, such a large-scale pamphlet cannot avoid **discussable** as well as **controversial** statements* (SC1)

In this example, the assessment marker creates a rhetorical effect which constructs problematic issues worthy of studies.

The analysis revealed that attitudinal markers appeared more frequently in the social sciences than in the hard sciences (10.6 in SC1 vs 3.6 in SC2 in 1000 words, respectively). The authors in the soft fields might be less willing to rely on the quantitative methods to establish their claims, and this enhances the need for more explicit assessment through the employment of attitude markers. Assessing the results obtained or urgency of the research problem are key features of social science articles whose authors usually take a more involved position on issues.

The significance markers were slightly more frequent in engineering RA abstracts, in which they emphasized relevance and importance of research, as illustrated in the example.

*This problem is **especially relevant** for the long-term operation of wells.* (SC2)

Here we can see two metadiscourse markers – the intensity booster *especially* and the significance type of attitude *relevant* that help the reader who might lack the theoretical background to see the significance of the research problem.

The lack of the emotion type of attitude in both sub-corpora might be due to the genre-specific features of RA abstracts which should be an accurate representation of the content, state briefly the research purpose and results rather than make the author's affective position explicit.

The frequency distribution between the two types of attitude is presented in Table 7.

**The raw and normalized frequency distribution of the types of attitude marker**

| Types | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| Significance markers | 66 | 3.5 | 24 | 1.7 |
| Assessment markers | 135 | 7.1 | 27 | 1.9 |

As can be seen, assessment markers dominated in SC1, while in SC2 only a slight difference is observed between these two types of attitude.

In the corpus, the two types of attitude markers were expressed by adjectives or adverbs showing authorial attitudes and encoding positive or negative values. The adjective *important* functioning as a significance marker appeared most frequently in SC1, while the adjective *efficient* as an assessment marker was most frequent in SC2 (Table 8).

**Occurrences of the most frequent attitude markers (per 1000 words)**

| Attitude marker | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| important | 70 | 3.7 | 13 | 0.9 |
| significant | 55 | 2.9 | 10 | 0.7 |
| efficient | 40 | 2.1 | 15 | 1.1 |
| useful | 13 | 0.7 | 7 | 0.5 |
| complex | 11 | 0.6 | 3 | 0.2 |

**Self-mentions.** Self-mention manifests the explicitness of an authorial presence through the employment of first-person pronouns *I, we, me* and *our* and possessive adjectives *my* and *our.* The distribution of this category of metadiscourse was also uneven across the two disciplines. The larger number of instances of self-mention was in SC1, with 8.9 in 1000 words, compared to only 1.3 in 1000 words in SC2. This finding reveals that engineering authors tend to downplay their personal role in the research and emphasize the analyzed phenomena. They seem to choose an impersonal style to show that their research findings are unaffected by authors, thereby strengthening the objectivity of results. In SC1, first-person pronouns were used to make a personal standing, signal authorial persona, demarcate authors' research results from those obtained by other scholars, and present authors as original contributors of research.

The low frequency of self-mentions in SC2 might be therefore attributed to the influential role of the disciplinary paradigm advising avoidance of personality in academic prose, a trend towards an objective way of writing established in the hard disciplines in contrast to soft disciplines which are more subjective. Accord-

ing to Berkenkotter and Huckin, academic writers are social actors who are familiar with disciplinary conventions [29]. They need to ratify their claims in order to obtain collective agreement that their data represent facts rather than opinions [30]. The rhetorical choices made by academic writers are typically constrained by the discursive conventions and rhetorical styles of each discipline [21]. The compliance with discipline norms is required for authorial claims to be accepted by the disciplinary community. Below are some examples from the corpus that illustrate the use of self-mentions.

*I then discuss how many human limits to full rationality are, in fact, well understood in terms of optimization* (SC1).

*Our results demonstrate that simple sensory stimuli can be used to reveal how experience functionally (or dysfunctionally) modifies higher-order prefrontal circuits and suggest a divergence in how ACC and V1 encode familiarity* (SC2)

In the above examples, the self-mention markers were used to recount the research steps and report findings thus helping reflect authorial identity.

The analysis revealed that engineering authors did not use the first-person pronouns to make claims and were less likely to use them in describing methods and reporting findings, which might be explained by their wish to make their research results more objective and clear. For this purpose, the passive voice was frequently used, which carries objective connotations and allows authors to produce more accurate depictions of the methods and to make more objective claims.

Regarding the lexical items used for self-mention, the study revealed no occurrences of first-person singular pronouns in SC2, which is also typical of the hard sciences, where the passive voice is a more preferable tool to make claims, present findings and describe research methods (Table 9).

Table 9

**Occurrences of self-mentions (per 1000 words)**

| Self-mentions | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| I | 21 | 1.2 | 0 | 0 |
| we | 86 | 4.7 | 13 | 0.9 |
| my | 5 | 0.3 | 0 | 0 |
| our | 32 | 1.8 | 3 | 0.2 |
| us | 5 | 0.3 | 2 | 0.1 |
| me | 2 | 0.1 | 0 | 0 |

**Engagement markers.** Engagement markers explicitly bring readers in dialogue with the writer, focus readers' attention and guide them to a particular interpretation. Interestingly, while in SC1 29 engagement features were found, in SC2 they did not appear at all. Regarding the type of engagement, only reader mentions, directives and knowledge appeals were found in the corpus.

Reader mention markers "offer the most explicit ways of bringing readers into a discourse by directly referring to them" [30. P. 10]. These devices account for a fifth part of all engagement markers in SC1. Here are some examples from the corpus.

*However, the actual practice shows that **we** cannot pinpoint a certain device as the only manifestation of synaesthesia* (SC1)

*It is concluded that the main task for **our** country is to attract investments for transferring the economy on the energy-efficient path of development using the Kyoto Mechanisms* (SC1)

The possessive adjective *our* is used here as a reader mention marker. In contrast to *we* and *our* used as self-mentions, *our* in these examples is inclusive, the function of which is to enhance the interactional nature of the utterance, to give the reader a sense of membership with similar understandings as the writer.

Directives, another engagement tool, were also used to engage the audience and encourage them to perform certain actions or to see things in a certain way, thus managing the readers' understanding. In the corpus, they were verbalized through the deontic modal verb *should*. Here is an example from the corpus where the author uses this modal to emphasize the need to abandon the model or take a new look at it.

*The dilemma of absurd conclusions: **should we** abandon a model if it produces absurd conclusions or **should we** regard a model as a very limited set of assumptions that will inevitably fail in some contexts?* (SC1)

The author uses two types of engagement in this example – the first-person pronoun *we* and the modal *should*. In the context, both markers might be seen as an instruction to the reader to view things in a way determined by the writer.

Knowledge appeals were used when the writer sought "to position readers within the boundaries of disciplinary understandings" [31. P. 276], as illustrated in the following examples:

*It is **commonly** assumed that a dominant role in the formation of Silicon Valley was played by such factors as the availability of highly skilled workforce, policy in the sphere of public procurement of high-tech products, participation of large companies and financial institutions.* (SC1)

*The special role of the first block, which opens the second part of the Essay, is **obvious**, its compactness and saturation with individual associations that the teacher shares with his student.* (SC1)

The appeals to shared knowledge refer here to an awareness of disciplinary traditions, views and beliefs. In these examples, the writers use the metadiscourse markers to support their claims by emphasizing the facts.

The frequency distribution between the types of engagement is presented in Table 10.

**The frequency distribution between the types of engagement (per 1000 words)**

| Types | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| Reader mentions | 8 | 0.4 | 0 | 0 |
| Directives | 4 | 0.2 | 0 | 0 |
| Knowledge appeals | 22 | 1.2 | 0 | 0 |

As can be seen, knowledge appeals were significantly more frequent than other two types of engagement.

The low frequency of engagement in the social sciences and its absence in engineering might be explained by the genre-specific features of RA abstracts rather than by an awareness of a disciplinary community. RA abstracts serve the promotional and informative functions rather than "bring readers into the discourse to relate to them and anticipate their possible objections" [22. P. 151]. It can be assumed that space constraints (not more than 200–250 words) imposed by the genre-specific nature of abstracts impede writers from acknowledging the presence of readers and involving them as participants in a conversation through questions, directives or reader pronouns.

The occurrences of the most frequently used engagement markers found in SC1 and SC2 are presented in Table 11.

**Occurrences of the most frequent engagement markers (per 1000 words)**

| Engagement marker | SC1 | | SC2 | |
|---|---|---|---|---|
| | Raw frequency | Per 1000 words | Raw frequency | Per 1000 words |
| common | 8 | 0.4 | 0 | 0 |
| our | 8 | 0.4 | 0 | 0 |
| typical | 5 | 0.3 | 0 | 0 |
| should | 4 | 0.2 | 0 | 0 |
| obvious | 4 | 0.2 | 0 | 0 |
| commonly | 4 | 0.2 | 0 | 0 |
| obviously | 1 | 0.1 | 0 | 0 |

## Conclusion

The increasing role of English in academic settings has brought some challenges to non-native speakers who are encouraged to publish their research papers or RA abstracts in English, which requires knowledge of core features of academic writing, including metadiscourse markers.

This study compared the use of metadiscourse markers in English RA abstracts by Russian scholars from social sciences and engineering, thus shedding light on how non-native English writers interact with their academic peers worldwide, which previously did not attract much attention of discourse analysts. It was assumed that metadiscourse devices are unevenly distributed across disciplines and

metadiscourse is expressed in accordance with the accepted disciplinary and genre-specific norms, being a reflection of the praxis of knowledge production in a particular discipline and in a particular academic genre. The assumptions were confirmed by the findings. The corpus-based analysis revealed substantial disciplinary variations. Social science authors took far more explicitly involved positions than engineering writers. It was suggested that a forceful and assertive stance is less valued in social sciences than stances that are open to alternative views and criticism.

The quantitative analysis showed that in the social science sub-corpus, the number of metadiscourse markers was four times as large as that in the engineering one, which might be explained by discipline-specific carefulness of social science authors in making claims. The more frequent use of attitude markers in the social science RA abstracts was not surprising as authors in the soft fields are more likely to evaluate both their own and others' findings because they are less able to rely on the quantitative methods to establish their claims. The disciplinary conventions allow them to take a more involved position on issues.

The study also revealed differences in the use of self-mentions. In the soft fields, they are used six times as frequently as in the hard disciplines, which was also explained by an awareness of the disciplinary conventions which instruct hard science authors to choose an impersonal style to show that their findings are unaffected by individuals, thereby strengthening the objectivity of results. The low frequency of engagement markers was explained by the communicative purpose of the RA abstract as a genre-specific feature: the small number of reader-oriented features in both sub-corpora indicates the writers' tendency to focus on their research rather than to enter into a conversation with the reader. Therefore, authors' choices of metadiscourse features are not arbitrary, but reflect expectations of a disciplinary community which the RA is addressed to.

The findings of the current study did not differ from those of previous research. Varttala, for example, also revealed that social science and humanities writers used metadiscourse markers more frequently than those in the field of engineering [32]. However, Varttala's study mainly focused on a limited number of the types of metadiscourse devices (hedges). The use of hedges by Filipino authors from engineering and linguistics were examined by Mojica, who found significant differences in the way the authors show detachment to their claims. These differences were also attributed to the disciplinary writing conventions [33]. Disciplinary differences in the use of metadiscourse were also emphasized by Takimoto who investigated two types of metadiscourse – hedges and boosters – in humanities, social and natural sciences articles by Japanese authors [21]. According to Takimoto, the lexical choices made by academic writers "seem to be constrained by the discourse norms and rhetorical styles of each discipline" [Ibid. P. 103]. However, in contrast to the present study, Takimoto focused his research on meta-discourse markers in the articles by native speakers of English. Jiang and Hyland also found disciplinary differences in the way of expressing a stance by different modes of knowledge production and explained them as follows: while the hard sciences are more likely to rely on empirical evidence, create facts through experimentation and replication, humanities and social sciences, which use more stance

features, prefer an explicitly interpretive style [34]. However, like two previously mentioned studies, this one also dealt with a limited number of metadiscourse resources. Self-mention markers, engagement markers and attitude markers were excluded from the analysis.

Therefore, the analysis confirmed Mauranen et al.'s claim about the insignificant role of cultural backgrounds of non-native writers in choosing rhetorical strategies. The discipline rather than culture plays a crucial role in the academic writing process [35].

It should be admitted that the research results presented here are limited due to the small number of RA abstracts collected to build the corpus. Due to this limitation, the research results can be interpreted only as trends in the two disciplines which may be confirmed or rejected by comparative research based on a larger corpus. Through a study of interactional preferences of writers from a larger number of disciplines, we will learn more about rhetorical practices and values which would help novice writers learn academic style features typically used in a disciplinary community to produce knowledge in an accepted way. This analysis was limited to written academic discourse. It will be of interest to see if disciplinary differences in metadiscourse can also be observed in oral presentations of research results. Diachronic variation in the use of metadiscourse markers in English academic prose could also be of interest.

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***Information about the author:***
**O.A. Boginskaya,** Dr. Sci (Philology), professor, Irkutsk National Research Technical University (Irkutsk, Russian Federation). E-mail: olgaa_boginskaya@mail.ru

***The author declares no conflicts of interests.***

***Информация об авторе:***
**Богинская О.А.** – д-р филол. наук, профессор кафедры иностранных языков Иркутского национального исследовательского технического университета (Иркутск, Россия). E-mail: olgaa_boginskaya@mail.ru

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