THE FREQUENCY AND RANGE OF PERSONAL PRONOUNS IN ACADEMIC TEXTS

A FREQUÊNCIA E VARIEDADE DE PRONOMES PESSOAIS EM TEXTOS ACADÊMICOS

FRECUENCIA Y RANGO DE PRONOMBRES PERSONALES EN TEXTOS ACADÉMICOS

Ekaterina V. MARTYNOVA[1]
Marina I. SOLNYSHKINA[2]
Elzara V. GAFIYATOVA[3]
Mariia B. KAZACHKOVA[4]

ABSTRACT: Researchers have been researching English text complexity and the impact of text metrics upon its challenge for various categories of readers for years and years. Significant measures have been taken lately towards a more excellent knowledge of changes in Russian texts of multiple genres. The present survey is a pilot corpus-based investigation concentrated upon variations in academic literature in Russian as represented in 2 books for the 9th-grade learners of secondary schools in Russian : (1) Biology. Human and health by A. M. Tsuzmer, O L. Petrishina, (2) Social Studies by Nikitin A.F., Nikitina T.I. The study subject that leads this research is: Are there notable diversity in the number of the personal and possessive pronouns applied in Russian classroom courses upon Social studies and Science? The obtained outcomes exhibit a significant trend of impersonality in the Science textbooks (TSU) under investigation. This means that the book writers on Science (TSU) prefer depersonalization strategies: they employ impersonal constructions and agentless passive, which decrease texts' narrativity and hamper students' understanding of the texts. The research findings present an influential guide that the current variations in the distribution of personal, possessive and reflective, pronouns in science and social coursebook examples are associated with text complexity. Moreover, those conclusions have significant connections for comprehending variations among social and Science texts and similar metrics. They suggest the language structures employed by authors of various disciplines differ considerably. The variations in the number and relative frequencies of pronouns are significant and compatible to indicate that each subcorpora can hold a different linguistic profile of characteristics. Additional examinations in the related sphere are recommended to resolve deficiencies in the size and range of texts adopted for the prevailing study.

[1] teaching assistant of the Department of theory and practice of teaching foreign languages, Institute of Philology and Intercultural Communication, *Kazan Federal University, Kazan, Tatarstan, Russia* **, Id Scopus** 57213166648, **ORCID** https://orcid.org/0000-0001-5883-0718,

[2] Doctor of philological Science, Professor of the Department of theory and practice of teaching foreign languages, Institute of Philology and Intercultural Communication, *Kazan Federal University, Kazan, Tatarstan, Russia* **, Id Scopus** 56429529500, **ORCID** https://orcid.org/0000-0003-1885-3039,

[3] Doctor of philological Science, associate Professor of the Department of theory and practice of teaching foreign languages, Institute of Philology and Intercultural Communication, *Kazan Federal University, Kazan, Tatarstan, Russia* **, Id Scopus** 56716561200, **ORCID** https://orcid.org/0000-0003-3190-4566,

[4] Candidate of Philolological Sciences, associate Professor of Department of English, Moscow State Institute of International Relations, *Moscow State Institute of International Relations, Moscow, Russia* , e-mail: mbkazachkova@yandex.ru, Tel.: +7 9163307828, **ORCID** https://orcid.org/0000-0002-0357-3010, *e-mail: katerinamarty@yandex.ru*

RESUMO: Há décadas, os estudiosos vêm conduzindo pesquisas sobre a complexidade do texto em inglês e a influência das métricas do texto em sua dificuldade para diferentes categorias de leitores. Passos consideráveis foram dados recentemente para uma melhor compreensão das variações nas métricas de textos russos de diferentes gêneros. O estudo atual é uma análise piloto baseada em corpus focada nas diferenças na escrita acadêmica em russo, conforme exemplificado em dois livros didáticos para os alunos do 9º ano de escolas secundárias russas: (1) Estudos Sociais por Nikitin A.F., Nikitina T.I. (doravante denominado NIK); (2) Biologia. Human and health por A. M. Tsuzmer, O L. Petrishina (doravante referido como TSU). A questão de pesquisa que orienta este estudo é a seguinte: Existem diferenças significativas no número de pronomes pessoais e possessivos usados em livros russos de sala de aula sobre Ciências e Estudos Sociais? Os resultados recebidos demonstram uma alta tendência à impessoalidade nos livros didáticos de Ciências (TSU) em estudo. Isso indica que os autores do livro didático em Ciência (TSU) favorecem estratégias de despersonalização: eles usam construções passivas e impessoais sem agente, que definitivamente diminuem a narratividade dos textos e dificultam a compreensão dos alunos dos textos. Os resultados da pesquisa fornecem um forte suporte de que as diferenças existentes na distribuição de pronomes pessoais, reflexivos e possessivos em amostras de livros de ciências e classes sociais estão relacionadas à complexidade do texto. Essas descobertas também têm implicações importantes para a compreensão das diferenças entre textos sociais e científicos e métricas correspondentes. Eles implicam que as estruturas de linguagem usadas por escritores de diferentes disciplinas variam substancialmente. As diferenças no número e frequências relativas dos pronomes são grandes e consistentes para sugerir que cada uma das subcorpora (social vs ciência) pode ter um perfil linguístico único de características. Sugere-se a realização de novos estudos na área para tratar das limitações de tamanho e abrangência dos textos utilizados na pesquisa atual.

PALAVRAS-CHAVE: Pronomes pessoais. Textos acadêmicos. Discurso acadêmico russo. Complexidade do texto. Corpus. Diferenças disciplinares.

RESUMEN: Durante décadas, los académicos han realizado investigaciones sobre la complejidad del texto en inglés y la influencia de las métricas del texto en su dificultad para diferentes categorías de lectores. Recientemente se han dado pasos considerables hacia una mejor comprensión de las variaciones en las métricas de los textos rusos de diferentes géneros. El estudio actual es un análisis piloto basado en corpus centrado en las diferencias en la escritura académica en ruso, como se ejemplifica en dos libros de texto para estudiantes de noveno grado de escuelas secundarias rusas: (1) Estudios sociales por Nikitin A.F., Nikitina T.I. (en lo sucesivo, NIK); (2) Biología. Human and health por A. M. Tsuzmer, O L. Petrishina (en lo sucesivo, TSU). La pregunta de investigación que guía este estudio es la siguiente: ¿Existen diferencias significativas en la cantidad de pronombres personales y posesivos que se usan en los libros de clase de Rusia sobre ciencias y estudios sociales? Los resultados recibidos demuestran una alta tendencia a la impersonalidad en los libros de texto de Ciencias (TSU) en estudio. Esto indica que los autores del libro de texto de Ciencias (TSU) favorecen estrategias de despersonalización: utilizan construcciones pasivas e impersonales sin agentes, que definitivamente disminuyen la narratividad de los textos y dificultan la comprensión de los textos por parte de los estudiantes. Los hallazgos de la investigación brindan un fuerte apoyo de que las diferencias existentes en la distribución de

los pronombres personales, reflexivos y posesivos en las muestras de libros de ciencias y ciencias sociales están relacionadas con la complejidad del texto. Estos hallazgos también tienen implicaciones importantes para comprender las diferencias entre los textos sociales y científicos y las métricas correspondientes. Implican que las estructuras del lenguaje utilizadas por escritores de diferentes disciplinas varían sustancialmente. Las diferencias en el número y las frecuencias relativas de los pronombres son grandes y consistentes para sugerir que cada una de las subcorporas (social vs ciencia) puede tener un perfil lingüístico de características único. Se sugieren más estudios en el área para abordar las limitaciones en el tamaño y la variedad de textos utilizados para la investigación actual.

PALABRAS CLAVE: *Pronombres personales. Textos académicos. Discurso académico ruso. Complejidad del texto. Corpus. Diferencias disciplinarias.*

Introduction

Many researchers of language have pointed to the role of distributional frequencies in determining the relative accessibility or ease of processing associated with a particular lexical item or sentence (ROLAND ET AL., 2007). These approaches are known by a number of names — constraint-based, competition, expectation-driven or probabilistic models — but all have in common the assumption that language processing is closely tied to a user's experience, and that distributional frequencies of words and structures play an important (though not exclusive) role in comprehension.

This paper aims at further investigating a possible correlation of frequency of personal pronouns and text complexity/readability. The research is performed based on the sub-corpus elicited for the study from the Russian Academic Corpus (referred to as RAC). The latter comprises over 57 classroom textbooks used in primary, secondary and high schools of the Russian Federation (GABITOV ET AL., 2017).

The current study as a corpus-based analysis aimed at revealing differences in science and humanitarian (non-science) academic discourse was conducted to answer the following Research Question: Are there significant differences in the number of personal and possessive pronouns used in Russian classroom books on Social studies on the one hand and Science on the other?

Literature Review

Personal pronouns are typically considered as markers of the writer's point of view and as such used to be rare in academic writing. In the last centuries English writers of academic texts preferred to present 'impersonally' choosing more general views in the area

(NIKITIN & NIKITINA, 2017). However, Cherry (1998) argues that in modern English academic writing the author's point of view is valued and encouraged by editors and reviewers. Hyland (2001) also concludes that contemporary writers are more known for 'the dialogic nature of persuasion in research writing' than writers of the previous centuries.

Pronouns are viewed as markers of writer's 'solidarity with readers' (TSUZMER & PETRISHINA, 2001). Reporting on a high proportion of personal pronouns in Social sciences Hyland (2001) defines it as 'a valuable rhetorical strategy' used by writers to establish academic credibility.

Similarly with regard to Russian general discourse, pronouns are reported to be the most frequent words registered in the "Frequency Dictionary of the Russian language" by L.N. Zasorina. The list of the 29 most frequent pronouns in Russian include the following: ya (I), on (he), eto (this), vy (you), ty (you), we (my), etot (that), ona (she), oni (they), to (that), vse (all), svoy (one's own), kotoryi (which), takoy (such), tot (that), nash (our), sebya (ourselves),ego (his), sam (himself), kakoy (which), moi (my), kto (who), tam (there) (ZASORINA, 1977).

As for Russian academic texts, they are characterized as impersonal with a tendency to avoid personal pronouns and resort to passive and impersonal structures (PYANKOVA, 1994; VASSILEVA, 1998).

Pronouns also play an important role in text cohesion and thus can be used as predictors of text readability and complexity (SOLNYSHKINA ET AL., 2018; SCHOOL TEXTBOOKS AND MANUALS, 2017; IVANOV ET AL., 2018; SOLOVYEV ET AL., 2019; SOLOVYEV ET AL., 2019).

Thus, pronouns as linguistic features can be considered distinctive elements for contrasting and describing academic texts.

Methods

We examined two textbooks, NIK and TSU, with the overarching purpose to contribute to our understanding of norms on personal and possessive pronouns incidence in Russian texts of different genre.

The SubCorpus compiled for the study comprises two textbooks for the 9th grade: (1) Social Studies by Nikitin A.F., Nikitina T.I. (hereinafter referred to as NIK); (2) Biology. Human and health by A. M. Tsuzmer, O L. Petrishina (TSU). Both textbooks are from the "Federal List of Textbooks Recommended by the Ministry of Education and Science of the

Russian Federation to Use in Secondary and High Schools". The choice of these textbooks was caused by two reasons: (a) the texts are relatively free of non alphabetical symbols, graphs, figures etc., (b) the sizes of the texts (in tokens) are similar: 77704 with 44508 tokens in NIK and 33196 in TSU (School textbooks and manuals, 2017) (see Table 1 below).

Table 1. The Size of the Sub Corpus

Books	Tokens
Biology. Human and health TSU	33196
Social Studies NIK	44508
Total	77704

AntConc was employed to analyze the Corpus and determine relevant frequencies of the pronouns in the texts (AntConc, 2018). AntConc computes a list of words which appear with the keywords under study thus providing not only a concordance but distributional patterns of the keywords.

We also computed absolute frequency, i.e. all occurrences of a word in the whole corpus, and relative frequency, i.e. the number of occurrences per thousand tokens. E.g. The absolute frequency of possessive pronouns in NIK is 279 (see Table 2 below). The size of NIK is 44508 tokens (see Table 1 above), thus the relative frequency of possessive pronouns in NIK is X= (279x1000): 44508=6.268.

3. Results and Discussion

On the first stage of the analysis we classified all the registered pronouns into three categories: personal, reflexive and possessive.

On the second stage we computed the relative frequencies of three groups of the pronouns under study.

Table 2. Absolute and normalized relative frequency of pronouns in the textbooks

Pronouns	TSU AF	TSU RF	NIK AF	NIK RF
Personal	447	13.463	767	17.232
Reflexive	26	0.783	70	1.572
Possessive	60	1.567	279	6.268

TOTAL	533	15.813	1116	24.672

The data (see Table 2 above) confirms the main hypothesis that social texts are richer in pronouns. The highest difference is observed in the group of possessive pronouns.

Personal pronouns frequency is rather high in every 1000 tokens there are either 20 - 21 (TSU) or 17-18 (NIK) personal pronouns. The authors of both books address readers with *vy (you)*:

E.g. '*Kratko o nih rasskazhem, chtoby vy imeli obshchee predstavlenie'* (We will briefly tell you about them so that **you** have a general idea) (NIK); '*Etim vy uberezhete ot zarazheniya okruzhayushchih'* (This will protect **you** from infecting others) (TSU).

Another pronoun *we (my)* typically used to unite the writer and readers into one group (NIK). E.g. '*Posmotrev v slovar', my uvidim, chto administraciya - eto deyatel'nost' po upravleniyu chem-libo'* (If we look in the dictionary, **we** will see that administration is the activity of managing something) (NIK).

However there are sample examples where the writer uses *my (we)* to refer to himself only thus realizing the so-called exclusive 'we' functioning instead of *ya (I)*. E.g. '*Etu mysl' my popytaemsya dokazat' v sleduyushchem paragrafe'* (This idea **we** will try to prove in the next paragraph).

The most prominent difference is in the use of possessive pronouns, which are on average four times more frequent in NIK than in TSU (see Table 2). E.g. '*Bol'shaya chast' nashih svedenij o vneshnem mire svyazana o zrenie*m (Most of **our** information about the outside world is related to vision) (TSU); '*Komu ne prihodilos' popadat' v situacii, kogda nashi prava i interesy kak potrebitelej okazyvalis' narushennymi?'* (Who hasn't been in situations where **our** rights and interests as consumers have been violated?) (NIK).

Evidently, there are some clear differences and exceptions (see Tables 3 and 5). As we can see, the personal pronoun is *ono (it)* demonstrates the highest frequency: *ono (it)* (ono; oni; ikh; im; imi; o nikh) {AF} in TSU is 199 in comparison with {AF} in NIK with 310; {RF} is 5.994 in TSU and 6.965 in NIK respectively (Table 3). Normalized RF of personal pronouns *vy; vas; vam; vami; o vas (you)* is 0.120 in TSU and 1.055 in NIK.

Interestingly that pronoun *we (my)* is used in NIK six times more often in NIK than in TSU: 55 and 1.235 vs 9 and 0.271 (see Table 3 below).

Another metric to notice is the frequency of pronoun *ya (I)* in both textbooks is the lowest (Table 3). In Science textbook (TSU) is used only once, in a quotations: '*Uzhe v glubokoj starosti on pisal: «Vsyu moyu zhizn' ya lyubil i lyublyu umstvennyj trud i fizicheskij*

i, pozhaluj, dazhe bol'she vtoroj»'. (Already in old age, he wrote: "All my life **I** have loved and love mental work and physical work, and perhaps even more than the second")*.* The writer of TSU not using I at all produces "the impression that the writer is withdrawing from all responsibility for the academic essay" (Bakhtin, 1986).

Table 3. Personal pronouns in textbooks for the 9th Grade

Personal pronouns	TSU AF	TSU Normalized RF	NIK AF	NIK Normalized RF
I (ya; menya; mne; mnoy; obo mne)	**2**	**0.060**	**17**	**0.381**
You (ty; tebe; tebya; toboy; o tebe)	0	0	23	0.516
He (on; yego; yemu; im; o nem)	157	4.729	268	6.021
She (ona; yeye; yey; o ney)	76	2.289	47	1.055
It (ono; oni; ikh; im; imi; o nikh)	**199**	**5.994**	**310**	**6.965**
We (my; nas; nam; nami; o nas)	9	0.271	55	1.235
You (vy; vas; vam; vami; o vas)	4	0.120	47	1.055
Total	447	13.463	767	17.165

The Table below shows that absolute and normalized relative frequency of reflexive pronouns in NIK is substantially higher, namely 70 and 1.572, as compared to 26 and 0.783 in TSU.

Table 4. Absolute and normalized frequency of reflexive pronouns in the textbooks for the 9th Grade

Reflexive pronoun	TSU AF	TSU Normalized RF	NIK AF	NIK Normalized RF
oneself (sebya; sebe; soboy; o sebe)	26	0.783	70	1.572

Based on the figures (Table 5), we can conclude that differences in the range of ***nash; nashego; nashemu; nashim; o nashem; nashe (our)*** in TSU (AF – 7, 1, 5; RF – 0.210, 0.030, 0.150) and in NIK (with AF – 6, 2, 23; RF – 0.134, 0.044, 0.516) are significant. The total RF in NIK is nearly two times higher than the corresponding metric in TSU: 0.39 vs 0.694.

In spite of the imbalance, the texts and the data allow us to conclude that both Russian science and non-science writers tend to use the inclusive pronouns *my (we)*, *nam (us) and*

nash (our). Inclusiveness implies that the pronoun refers both to the writer and reader (Harwood, 2005).

We may also agree with Harwood (2005) that inclusive pronouns are markers of "low-risk, discrete instances of textual authorial intervention" (Harwood, 2005). Hence, the data, which are quite visible in both textbooks, confirm the assumptions of Pyankova (1994) and Vassileva (1998) that the general tendency of writers is to disguise their personal opinion. If the fact that a similar study on a larger corpus of a wider range of authors is needed to further clarify or contradict the hypothesis (Pyankova, 1994; Vassileva, 1998).

Table 5. The range of possessive pronouns used in the textbooks for the 9th Grade

Possessive pronouns	TSU AF	TSU Normalized RF	NIK AF	NIK Normalized RF
My (Moy; moyego; moyemu; moim; o moyem)	1	0.030	2	0.044
My (moya; moyey; moyu; o moyey)	1	0.030	4	0.089
My (moyo)	0	0	1	0.022
My (moi; moih; moim; moimi; o moikh)	0	0	3	0.067
Your (tvoy; tvoyego; tvoyemu; tvoim; o tvoyem)	0	0	3	0.067
Your (tvoya; tvoyey; tvoyu; o tvoyey)	0	0	1	0.022
Your (tvoyo)	0	0	1	0.022
Your (tvoi; tvoikh; tvoim; tvoimi; o tvoikh)	0	0	3	0.067
My (svoy; svoyego; svoyemu; o svoyom)	**17**	**0.512**	59	1.325
My/her own (svoya; svoyey; svoyu; o svoyey)	**17**	**0.512**	51	1.145
My/Its own (svoyo)	0	0	18	0.404
My (svoi; svoikh; svoimi;o svoikh)	11	0.331	**89**	**1.999**
Our (nash; nashego; nashemu; nashim o nashem)	7	0.210	6	0.134
Our nashe	1	0.030	2	0.044
Our (nasha; nashey;nash o	5	0.150	23	0.516

nashey; nashi nashikh; nashim nash; o nashikh)				
Your (vash; vashego; Vashemu; vashim; o vashem)	0	0	5	0.112
Your (vasha; vashey vashu; o vashey)	0	0	1	0.022
Your (vashe)	0	0	0	0
Your (vashi; vashikh vash; vash; o vashikh)	0	0	7	0.157
Total	60	1.567	279	6.268

Researchers provide a number of explanations of more frequent plural pronouns: (a) politeness, cooperation, academic courtesy (Gergokaeva, 2008); (b) "modesty" (Glushko, 1979); (c) inclusive 'we' when one is presented as a member part of a community (Boldyreva); (d) search for objectivity (Ivanov, 1978); (e) ideological dictate (Miroshnichenko, 1995; National Corpus of Russian Language, 2018).

Summary

The results of the study aimed at defining frequencies of pronouns in two Russian classroom books demonstrated that there is a strong tendency to use more pronouns in textbooks on Social science than in the Science textbook ("Biology. Human and health).

The perspective of the study lies in (1) testing the hypothesis that science texts contain fewer pronouns than humanitarian (non-science) texts; (2) determining relative frequencies of different types of pronouns in Russian science and humanitarian (non-science) texts.

We also suggest that relative frequencies of pronouns may correlate with text complexity. We believe that language distributional data such as that play an important role in understanding the nature of text complexity.

Conclusion

The article presents the results of the analysis aimed at cross-discipline quantitative (absolute and relative frequencies) and distributional (use in various contexts) characteristics

of Russian pronouns in secondary school classroom texts on Social Studies and Science. The question investigated is whether the incidence of pronouns differs in science and non-science texts, in relation to text complexity.

Summarizing the uses of first-person pronouns in Russian textbooks, we conclude that they demonstrate very rare instances of *'ya'(I)*, while the occurences of *'my' (we)* are two times more numerous. Russian authors of both textbooks on Science and Humanities prefer the pronoun of the first person plural (*my (we)*, the third person both singular and plural *(ono (it), on (he), ona (she), oni (they))*.

The research may be useful in a number of areas including teaching Academic Russian and Pragmatics on tertiary levels. Differences in the use of pronouns across Science and Humanities may also be helpful to writers and researchers in the two areas.

However, there are a number of limitations to our study and further investigation would be necessary before announcing correlation of pronouns frequency and text complexity.

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Information about authors:

Ekaterina V. Martynova 1) Date of birth 1989; 2) -; 3) Kazan Federal University, Faculty of Foreign Languages. Qualification: foreign language with additional specialty (2012); 4) Subject of thesis "Comparative study of newspaper / newspaper concepts in American and Russian conceptual spheres"; 5) Assistant of the Department of Theory and

Practice of Teaching Foreign Languages, KFU; 6) The complexity of the text, the perception of the text, psycholinguistics.

Marina I. Solnyshkina, 1) Date of birth 1961; 2) Doctor of Philology, Professor; 3) Graduated from Kazan State Pedagogical University, faculty of foreign languages. Qualifications: teacher of English and German (1984); 4) Doctor of Philology (2006). Doctoral dissertation topic "Asymmetry of the structure of the linguistic personality in the Russian and English versions of the maritime professional language"; 5) Professor of the Department of Theory and Practice of Teaching Foreign Languages, KFU; 6) Sociolinguistics, comparative linguistics, language assessment, text complexity, text perception.

Elzara V. Gafiyatova, 1) Date of birth 1980; 2) Doctor of Philology, Associate Professor; 3) Graduated from Kazan State Pedagogical University, Faculty of Foreign Languages (2002). Qualifications: teacher of English and French; 4) Doctor of Philology. Thesis topic "Professional language as a means of modeling a linguistic personality (based on the Russian and English versions of the professional language of forestry)"; 5) Head of the Department, D.Sc. Associate Professor of the Department of Theory and Practice of Teaching Foreign Languages; 6) professional communication, sublanguage, language for special purposes, language assessment, academic writing.

Mariia B. Kazachkova, 1) Date of birth 1967; 2) Candidate of Philology, Associate Professor; 3) Graduated from KSPI Kazan State Pedagogical Institute (1990); 4) Topic of Ph.D. thesis "Professional language as a reflection of professional culture" (October 2008); 5) Associate Professor of the Department of English at MGIMO (University) of the Ministry of Foreign Affairs of Russia; 6) Teaching general English, professional communication, stylistics, methods of teaching a foreign language.