

ISSN 2313-8912

НАУЧНЫЙ РЕЗУЛЬТАТ

ВОПРОСЫ ТЕОРЕТИЧЕСКОЙ И ПРИКЛАДНОЙ ЛИНГВИСТИКИ

RESEARCH RESULT. THEORETICAL AND APPLIED LINGUISTICS

8(4) 2022

16+

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сетевой научный рецензируемый журнал
online scholarly peer-reviewed journal



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Журнал зарегистрирован в Федеральной службе по надзору в сфере связи, информационных технологий и массовых коммуникаций (Роскомнадзор) Свидетельство о регистрации средства массовой информации Эл. № ФС77-69052 от 13 марта 2017 г.
The journal has been registered at the Federal service for supervision of communications information technology and mass media (Roskomnadzor) Mass media registration certificate El. № FS 77-69052 of March 13, 2017



Том 8, № 4. 2022
СЕТЕВОЙ НАУЧНО-ПРАКТИЧЕСКИЙ
ЖУРНАЛ
Издается с 2014 г.
ISSN 2313-8912



Volume 8 (4). 2022
ONLINE SCHOLARLY PEER-REVIEWED
JOURNAL
First published online: 2014
ISSN 2313-8912

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Издатель: НИУ «БелГУ». Адрес издателя: 308015 г. Белгород, ул. Победы, 85.
Журнал выходит 4 раза в год

Founder: Federal state autonomous educational establishment of higher education «Belgorod State National Research University»
Publisher: Belgorod State National Research University
Address of publisher: 85 Pobeda St., Belgorod, 308015, Russia
Publication frequency: 4 /year

**СОДЕРЖАНИЕ
ЯЗЫКОЗНАНИЕ
РАЗДЕЛ I. ТЕОРИЯ ЯЗЫКА**

**CONTENTS
LINGUISTICS
SECTION I. THEORY OF LANGUAGE**

Алефиренко Н. Ф. Языковой образ: дискурсивно-модусный креатив	3	Alefirenko Nikolay F. Language imagery: discursive and modus creative	3
Духовная Т. В. Исследование якутского кинодискурса через анализ кинокритик	15	Dukhovnaya Tatiana V. Study of Yakut cinematic discourse through film reviews analysis	15
Nikitina Elena S. The world of interpretations in culture space	31	Nikitina Elena S. The world of interpretations in culture space	31
Федуленкова Т. Н. Терминология vs фразеология: перенос значения в бизнес-терминах	41	Fedulenkova Tatiana N. Terminology vs phraseology: meaning transfer in business terms	41
Шпильная Н. Н., Сологуб О. П., Маннапова С. А. Вторая реплика в диалоге: ключевые алгоритмы текстовой динамики	57	Shpilnaya Nadezhda N., Sologub Olga P., Mannapova Sofia A. The next turn in a dialogue: key algorithms of text dynamics	57

РАЗДЕЛ II. ПРИКЛАДНАЯ ЛИНГВИСТИКА

SECTION II. APPLIED LINGUISTICS

Биктимиров А. Р., Груздев Д. Ю. Способы повышения эффективности работы программы транскрипции речи	72	Biktimirov Andrey R., Gruzdev Dmitry Yu. Boosting Speech-to-Text software potential	72
Долматова О. В., Гетманская М. Ю., Раздубев А. В. Притяжательные детерминативы и эффект определённости в английских экзистенциальных предложениях: корпусное исследование	90	Dolmatova Olesya V., Getmanskaya Marina Y., Razduyev Aleksey V. English possessives and the definiteness effect in there-sentences: a corpus-based study	90
Куприянов Р. В., Солнышкина М. И., Даскалу М., Солдаткина Т. А. Лексические и синтаксические параметры академического текста: дискриминантный анализ	105	Kupriyanov Roman V., Solnyshkina Marina I., Dascalu Mihai, Soldatkina Tatyana A. Lexical and syntactic features of academic Russian texts: a discriminant analysis	105

**РАЗДЕЛ III.
ЛИТЕРАТУРЫ НАРОДОВ МИРА**

**SECTION III.
WORLD LITERATURES**

Kalloli Angela Teresa, Tyagi Sarika Posthuman and pandemic elements in the feminist retellings of fairy tales in Marissa Meyer's <i>Lunar Chronicles</i>	123	Kalloli Angela Teresa, Tyagi Sarika Posthuman and pandemic elements in the feminist retellings of fairy tales in Marissa Meyer's <i>Lunar Chronicles</i>	123
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ЯЗЫКОЗНАНИЕ
LINGUISTICS
РАЗДЕЛ I. ТЕОРИЯ ЯЗЫКА
SECTION I. THEORY OF LANGUAGE

DOI: 10.18413/2313-8912-2022-8-4-0-1

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| Language imagery: discursive and modus creative

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Received 27 September 2022; accepted 09 December 2022; published 30 December 2022

Abstract. The phenomenon of discourse as a communicative event is key to the developing theory of linguistic image. The discursive comprehension of the communicative event which generates linguistic images is carried out through its cognitive-metaphorical interpretation. The genesis of the linguistic image is considered from the stage of the emergence of the naïve concept, that primordial framework which connects the object-sensible image with the discursive and modus concept. Its paradigm contains the cognitive and eventual component, which, being addressed to the pragmatic component of the communicative situation, generates the architectonics of the linguistic image. The idea is held that discursive and modus hypostasis of a communicatively significant event serves as a primary basis for the formation of visual outlines of the corresponding fragment of the verbalized picture of the world. This, in turn, involves the work of the so-called discursive consciousness. In line with this judgement, the ways of formation of a linguistic image are shown. The initial stimulus here is the cognitive reproduction from the annals of ethno-cultural memory of sensations and perceptions received earlier, correlated with the actual communicative event. Interpreted by the discursive consciousness in the form of an ethno-cultural concept, the object-sensual image transforms into a linguistic image. Its categorical features are established: associativity, metaphoricity, polysemy, originality, ethno-cultural conditionality, intellectual-emotional synergy of thought and feeling.

Keywords: Language imagery; Communicative event; Discursive consciousness; Cognitive metaphor; Discursive and modus concept

How to cite: Alefirenko, N. F. (2022). Language imagery: discursive and modus creative, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 3-14. DOI: 10.18413/2313-8912-2022-8-4-0-1

DOI: 10.18413/2313-8912-2022-8-4-0-1

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Статья поступила 27 сентября 2022 г.; принята 09 декабря 2022 г.;
опубликована 30 декабря 2022 г.

Аннотация. Ключевым для разрабатываемой теории языкового образа является феномен дискурса как коммуникативного события. Дискурсивное осмысление коммуникативного события, порождающего языковые образы, осуществляется посредством его когнитивно-метафорической интерпретации. Генезис языкового образа рассматривается с этапа возникновения наивного понятия – той первоосновы, которая связывает предметно-чувственный образ с дискурсивно-модусным концептом. В его парадигме содержится та когнитивно-событийная составляющая, которая, будучи обращенной к прагматическому компоненту коммуникативной ситуации, генерирует архитектуру языкового образа. Проводится мысль, что дискурсивно-модусная ипостась коммуникативно значимого события служит первоосновой формирования визуальных очертаний соответствующего фрагмента вербализуемой картины мира. Это, в свою очередь, включает работу так называемого дискурсивного сознания. В русле данного суждения показаны пути формирования языкового образа. Начальным стимулом здесь выступает когнитивное воспроизведение из анналов этнокультурной памяти, полученных ранее ощущений и восприятий, соотносимых с актуальным коммуникативным событием. Интерпретируемый дискурсивным сознанием в виде этнокультурного концепта, предметно-чувственный образ превращается в образ языковой. Установлены его категориальные признаки: ассоциативность, метафоричность, полисемичность, оригинальность, этнокультурная обусловленность, интеллектуально-эмотивная синергия мысли и чувства.

Ключевые слова: Языковая образность; Коммуникативное событие; Дискурсивное сознание; Когнитивная метафора; Дискурсивно-модусный концепт

Информация для цитирования: Алефиренко Н. Ф. Языковой образ: дискурсивно-модусный креатив // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 3-14. DOI: 10.18413/2313-8912-2022-8-4-0-1

Introduction

Significance of the problem

There are some truths that, at first glance, do not need to be proven. In scientific research, they are perceived as linguistic axioms. As one might think, the concept of an image also applies to them, because back then

in ancient times Aristotle also addressed its comprehension. The genius of his teaching amazes us even today. The strategy he laid down for comprehending a person's ability to create and experience images formed in the 19th century the methodological foundations

for the discipline now called the psychology of the image.

Thus, the Scottish researcher John T. E. Richardson (Richardson, 2006) systematically (of course, from the standpoint of the categorical and conceptual basis of his time) considered such aspects of the psychology of images that were defined by Aristotle. It is true that a modern scientist examines images from the viewpoint of brain processes: the subjective experience of images, imagery as an internal representation, as an attribute of a stimulus, as a mnemonic strategy (Richardson, 2006) (a method based on figurative associations to improve memorization). Especially innovative is the author's interpretation of the brain mechanisms associated with the ability to generate images.

In Russia, psychology of imagery was founded by the research of L. S. Vygotsky (Vygotsky, 2005), A. N. Leontiev (Leontiev, 1979: 3-13), Sergei Dm. Smirnov (Smirnov, 1981: 15-29). The psychology of experience, actively developed by F. E. Vasilyuk (Vasilyuk, 1984), is of great interest. Vasilyuk (Vasilyuk, 1984) is of great interest in understanding the nature of linguistic imagery. First of all, attention is drawn to the author's interpretation of "experience" not as an emotional response but as overcoming perception of a communicatively significant event as a real fact and transforming it into a discursive and modus model (cognitive substrate) of language imagery (Alefirenko, 2008: 68).

Nowadays, the term "image", in a broad sense, is axiomatically understood as the reflection of the external world in the person's mind. The peculiarity of language imagery as one of the forms of this reflection is determined, particularly, by the fact that the communicants experience a communicative event and simultaneously convey their discursive and modus attitude towards it.

The main purpose of the work is to reveal the linguocreative essence of the language image. The purpose of the study involves the solution of the following tasks:

a) to reveal discursive and modus nature of linguistic images and the way how they reflect the multilevel synergetic extralinguistic world by semiotic means;

b) to determine psycholinguistic mechanisms which help to represent mental models of the corresponding communicative events within the linguistic image nontrivially and creatively;

c) to format associative-semantic potential of language images using parameters;

d) to establish connections between the creative features of linguistic images focused in discursive consciousness and the choice of those words and expressions that embody the features of ethno-cultural spirituality fixed in linguistic images.

The solution of these tasks set is aimed at finding answers to research questions that have long arisen. How to understand the reflection of the external world in linguistic consciousness? How is the attitude to the reflected object expressed in a linguistic way?

In the process of studying the essence of the image, the prominent French phenomenologist Maurice Merleau-Ponty stated that the concept of imagery had acquired a bad reputation. In his essay "The Eye and the Spirit" the author comes to conclusion that "the reason for this is the unfounded ideas about imagery as a tracing paper, a copy, a duplicate of a thing, and even about a "mental image" as the same kind of copy stored in our memory" (Vasilieva, 2011). The image, according to his concept, is "the subjective perception of the external world influencing it" (Merleau-Ponty, 1964: 17).

The semiotic mechanisms of image generation were first substantiated by R. Barth (Barth, 2009). The etymology of the word imagery (image) which Roland Barthes elevates to the verb *imitari* – 'to imitate', "is conducive to understanding the image as a pictorial sign, the result of reproduction, copying, reflection of objects" (Barthes, 2009: 111). This reflection "creates a certain illusion of the object identity and its image which in semiotic logic must be read" (Vasilieva,

2011), revealed through the discovery of the code underlying the symbolic-conditional nature of the image.

This kind of semiotic model of the image prevailed for a very long period which is explained by the hypnotic works of R. Barth (Barth, 2009: 128), although the need for developing this concept was noted by the author himself. This could not but lead to the emergence of new theories and new nominations of imagery, such as “image-movement” and “image-time”, as Gilles Deleuze suggested (Deleuze, 1974). And it is not about the terminological game but interpretation of innovative understanding of imagery itself.

In linguistic research, the approach to the image as the result of reflecting fragments of the external world can only be taken as a methodological starting point. Its linguistic adaptation is carried out using epistemological interpretation of discursive and modus cognition (Oparina, 2017: 4-8). This approach is based on four basic concepts: “communicative event”, “discourse”, “discursive consciousness” and “discursive and modus concept”.

The novelty of research is predetermined by the fact that linguistic image is considered (against the background of the sensory image) through the prism of discursive consciousness which is a quite new term and therefore is controversial in comparison with the term “linguistic consciousness” (which has already become fixed). The new approach is relevant for the interdisciplinary study of the language image.

Our position on the linguistic image as a synergetic phenomenon generated by discursive consciousness is the starting point of the research (Alefirenko 2008: 247-252). This postulate is used as the methodological basis for linguo-cognitive poetics, a new developing field. The accepted axiom serves not only to the actual linguistic study, but also interdisciplinary (linguo-cognitive, linguo-culturological and communicative-pragmatic) research.

Materials and methods

The nature and essence of linguistic imagery are revealed through the linguocultural method, a set of methods and techniques that allow us to penetrate into the mechanisms of interaction between language and the value and semantic dominants of the human modeled picture of the world. The purpose of this approach is to explicate the hidden hypostasis of language as a tool for the formation, storage and development of culture.

To achieve this goal, the procedure of psycho-semantic identification was used to objectify the means of so-called culturally significant meanings in language imagery. This is the subject of certain methods of component analysis of ethno-cultural semantics (revealing the cultural significance of verbal signs) with the subsequent interpretation of “cultural connotations” in their symbolic, archetypal and conceptual representation (Jung, 1991; Bolshakova, 2010: 47-53). “Culturally marked connotation arises as a result of the interpretation of the associative-figurative basis of phraseological units or metaphors by correlating it with cultural and national standards and stereotypes. Components with a symbolic reading also largely determine the content of cultural connotations” (Langacker, 1990: 176-177).

Results

As a result of the study, the following methodologically significant postulates were established and substantiated:

1. The phenomenon of discourse is fundamental for the modern theory of language imagery.

Due to the ambiguity of the term “discourse” we need to clarify its linguo-cognitive value (Croft, 2004; Jackendoff, 1993) for the theory of language imagery. According to our concept, discourse is

- not a speech / text or speech dialogue, as it is commonly called in communicative linguistics,
- not evolution of thinking, expressed in concepts and judgments (the unshakable postulate of the classical philosophy of

R. Descartes, B. Spinoza and G. V. Leibniz who believed that the reliability of scientific knowledge is guaranteed by intellectual intuition),

- not a representative of a special mentality and ideology, as it is presented in the French postmodern doctrine, which was developed by Michel Foucault (Foucault, 1966), Gilles Deleuze (Deleuze, 1974), Jean-François Lyotard (Lyotard, 1997) and others.

2. Of course, for understanding the origins of language imagery the above-mentioned interpretations of discourse undoubtedly have aspectual significance:

- a) the communicative-linguistic approach aims at interpreting a discursive image as a communicative event (van Dijk, 1997);

- b) in the development of philosophical understanding, linguistic imagery is linked to the naïve concept, the basis for concept formation, in the paradigm of which we distinguish its discursive and *modus hypostasis*. It is significant for the formation of language imagery that is addressed to the pragmatics of the typical situation of speech generation.

- c) not being a direct representative of special mentality, the postmodern approach contributed to the appeal of linguists to the linguistic consciousness of communicants, whose basic elements are predetermined by the so-called discursive consciousness.

Discussion

The initial postulate is the proposition we put forward about language imagery produced by the discursive consciousness as a synergistic phenomenon (Alefirenko, 2008: 68-73). This postulate is used as a methodological basis for the new direction we are developing – *linguo-cognitive poetics*. The accepted axiom serves not only for the linguistic search itself, but also as interdisciplinary (*linguo-cognitive, linguo-cultural and communicative-pragmatic*) research.

In the paradigm of this approach, imagery is the result of mental (cognitive) reproduction of previously obtained

sensations and perceptions from the annals of ethnocultural memory (Kugler, 2002). Having passed through the mechanisms of discursive consciousness and discursive and *modus concept*, the subject-sensory image turns into a language image. Its categorical features are: associativity, metaphoricity, polysemism, originality, ethno-cultural conditioning, intellectual and emotive synergy of thought and feeling (Alefirenko, Nurtazina, Shakhputova, 2021: 253-270), discursive and *modus creativity*.

The effectiveness of language images is associated with their ability to bring to life results of human cognitive processes – sensations and perceptions. It activates the memory of various sensations – a priori and experiential, received by the sensory, auditory, visual, tactile way – and allows clarifying the information obtained while understanding the communicative event. All this makes language imagery vivid and visual.

1) Communicative event as a prototype of language imagery

Discourse is directly related to a communicative event which should be distinguished from a real event occurring in the existential hypostasis of human existence. The communicant's experience of a real event motivates them to discursive text generation. In this case, the real event becomes communicatively significant. The person's experience prompts to create a discursive model of literary text by creating related configuration of communicatively conditioned anthropocentric images.

A communicative event is a discursive model of generating language image (in accordance with the characteristics of discursive situation). The discursive situation reflects in the communicant's consciousness the information about the communicative event explicated by the means of linguistic and nonverbal semiotics. It expresses interacting ethno-cultural, social and individual-personal meanings. As a result of such interaction, language imagery arises in the conjugation of verbal and nonverbal

elements of discursive consciousness (Chafe, 1994; Gasparov, 1996; Lynn, Moniek, 2021).

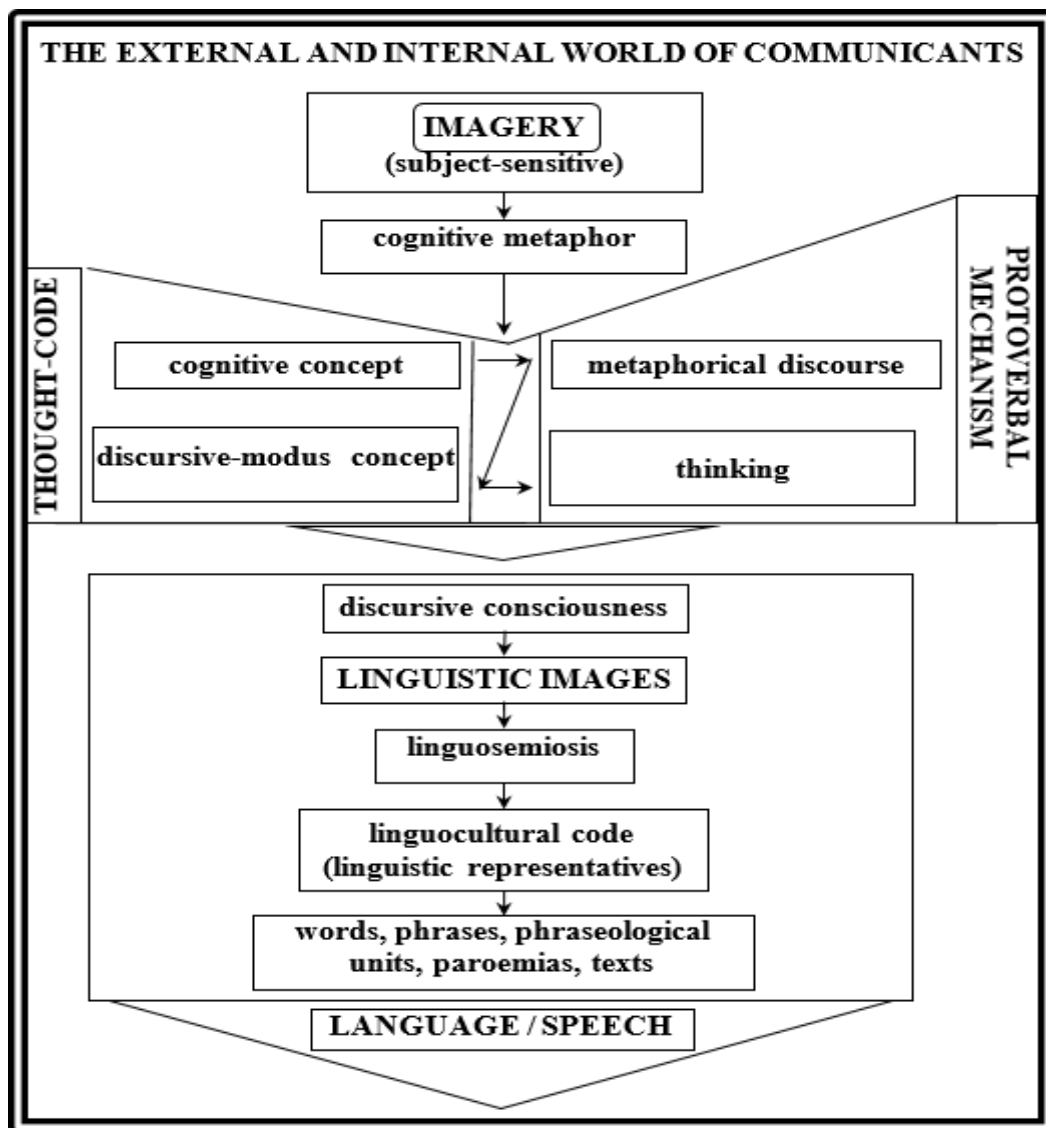
2) Discursive consciousness and language imagery

Since “nothing exists outside the text,” as J. Derrida (Derrida, 2002: 98) tirelessly repeated, the whole world, ultimately, is perceived as a boundless, inexhaustible text. Its associates compare it with a large-scale figurative worldview. Thus, Reinhard Pekrun (Pekrun, 2021) compares the world with a “space library”, and Umberto Eco (Eco, 2005:

89-95) parallels it with a “dictionary” and a comprehensive “encyclopedia”. In such an extended interpretation of the text, the mechanisms of its generation are based on *discursive* consciousness relying on the processes of narrativization of figurative speech thinking, i.e. on the person’s introspectional ability, the ability to describe themselves, on their life experience in the discursive consciousness in the form of a coherent use of poeticized images in literary speech (Fig.1).

Figure 1. Cognitive-discursive generation of a linguistic image

Рисунок 1. Когнитивно-дискурсивное порождение языковой образности



As noted above, “the understanding of discursive consciousness is based on two points: (a) on speech-thinking activity as the main condition for the emergence of discursive consciousness and (b) on speech behavior – its component and form of realization” (Alefirenko, 2014: 8). It follows from the fact that the main function of discursive consciousness is constant reflexive monitoring (mental analysis) of the figurative-semantic panorama generated in literary speech which is carried out by communicants continuously. It characterizes not only the author’s verbal behavior but also the characters of the literary text.

It should be noted that reflexive monitoring of the figurative and semantic interpretation of the external and internal world is continuous. A well-coordinated mechanism for tracking the adequacy of various elements of a communicative event fixed in language imagery is predetermined by a discursive and modus concept. In this regard, it is important to understand the genetic conditioning of language imagery and discursive and modus concepts (Musolff, 2004: 55-75).

3) Language imagery and discursive and modus concept

First of all, it should be recognized that an image and a concept (Langacker, 1990) are units of the thought code. And yet they are different from each other.

A concept is a set of subject meanings, ethno-cultural values and assessments. By virtue of its multi-tiered organization, there are not only meanings but also “premonitions” which are synthesized in the structure of the verbalized concept (Pekrun, 2021). We can say that concepts integrate sensory images, perceptions, assessments and connotations refracted in discursive consciousness through the prism of particular ethnic culture.

The concept is discrete (it has a multi-tiered structure). On the contrary, the nature of the image is continuous (the image has a rational-sensory integrity, ethno-linguistic connotations) and includes the visual image

of the representative word. In other words, both phenomena are mental structures of the perceptual-cognitive activity of communicants but they convey deep meanings of the verbalized fragment of the communicative event in different ways.

We can say that sensory images, perceptions, evaluations and connotations, refracted in the discursive consciousness through the prism of one or another ethnic culture, are integrated in the sign which represents concept. For example, “the seventh water on jelly” is ‘an extremely distant relationship’. Cf. in context: 1) “*In Siberia kinship, property and nepotism are considered almost up to the twentieth generation. The seventh water is on jelly, the tenth water is on kvass, and every kind of bake from the side of the tribe is not thrown out*” (P. I. Melnikov-Pechersky. On the mountains). Cf. also in different linguistic cultures: Ukr. ‘*syoma voda na kisele, tenth water on jelly*’; Polish ‘*piąta woda po kisielu, siódma woda po kisielu, dziesiąta woda po kisielu*’; Ital. ‘*parente alla lontana – letters. distant relative*’; Span. ‘*un tío en Alcalá*’ – lit. uncle in Alcalá (Alcalá is an extreme suburb of Madrid); Turkish ‘*dış kapının dış mandalı*’ – lit. latch for the outer door.

In the Slavic languages, the language image correlates mainly with the peculiarities of the preparation of jelly. Differences in some variations: in Rus. ‘*tenth water in kvass*’; in Polish. ‘*piąta woda po kisielu*’; In Span. ‘*uncle from the suburbs*’; in Ital. ‘*just a distant relative*’; Turkish language image is based on realities that are not related to kinship (the latch of the outer door).

The difference between the concept and the image is well demonstrated by the cognitive metaphors of the ‘needle’ and the ‘pattern’. A discursive and modus concept is a ‘needle’ with the help of which the author creates a particular pattern of language imagery on the text fabric.

The basis for understanding the scheme of generating language image is the statement that the substrate of discursive and modus concepts, like language imagery, is a

metaphorical worldview or a cognitive metaphor (Turner, 2000: 133-145) which enables to create a capacious image based on bright, sometimes unexpected associations. The nomination of the language image is carried out in many ways: by word, by phrase, by sentence, by super-phrasal unity.

Discursive and modus concepts are products of the convergence of cognitive and literary images. The former create the illusion of their prosaic origin, their alienation from the poetic perception of the world – the cognitive substrate of exclusively literary images. However, in reality cognitive images with their meanings also nourish the irrational element of poetic speech thinking.

Such comprehension of the rational and irrational origins of the world perception allows considering language images in conjunction with discursive and modus concepts – mental structures of complex integrative nature combining information of an associative-figurative character in their semantic content.

For the symbolic representation of this kind of concepts, linguogenesis has developed special signs that specialize in the function of figurative nomination. The indirectly nominative essence of the figurative nomination signs is determined by their ability to associatively cause a secondary discursive situation in the discursive consciousness of members of certain linguistic system. This kind of ability is based on the power of the communicants' linguistic creativity of speech thinking (Serebrennikov, 1988) capable of modeling new figurative configurations using metaphorical thinking (Yurina, 2005).

At the same time, a stable correlation between components of signs of indirectly derived nomination and ethnocultural concepts is used. This correlation represents a discursive and modus matrix of generalized-metaphorical perception of a real communicatively significant event (Alefrenko, 2018: 15-28).

4) Cognitive metaphor and language imagery

The understanding of metaphorical thinking as a mechanism for generating cultural concepts of discursive and modus nature is laid down by deep studies of cognitive metaphor. Furthermore, they still give rise to discussion, primarily, in the works of European researchers (Riker, 2008; McCormack, 1990) and Russian scientists (Arutyunova, 1999) and others).

Cognitive metaphor as a mechanism of discursive comprehension of a communicative event generates speech images (Sandikcioglu, 2003: 299-320; Underhill, 2003: 135-165) of a literary text by understanding extralinguistic circumstances of their occurrence (Fig.2)

As we see, such circumstances include:

- (a) knowledge of real facts which are presented in a communicatively significant event,
- (b) author's intentions,
- (c) characters' notions about the discursive situation,
- (d) direct attitudes and intentions of the communicants.

It should be noted that the discursive image is distinguished by its synergistic, multiline, non-linear nature. It is predetermined by many factors:

- (a) conditions of discursive activity,
- (b) protodiscursive events,
- (c) emotional background of the communicants,
- (d) linguistic and cultural markers of the communicative event.

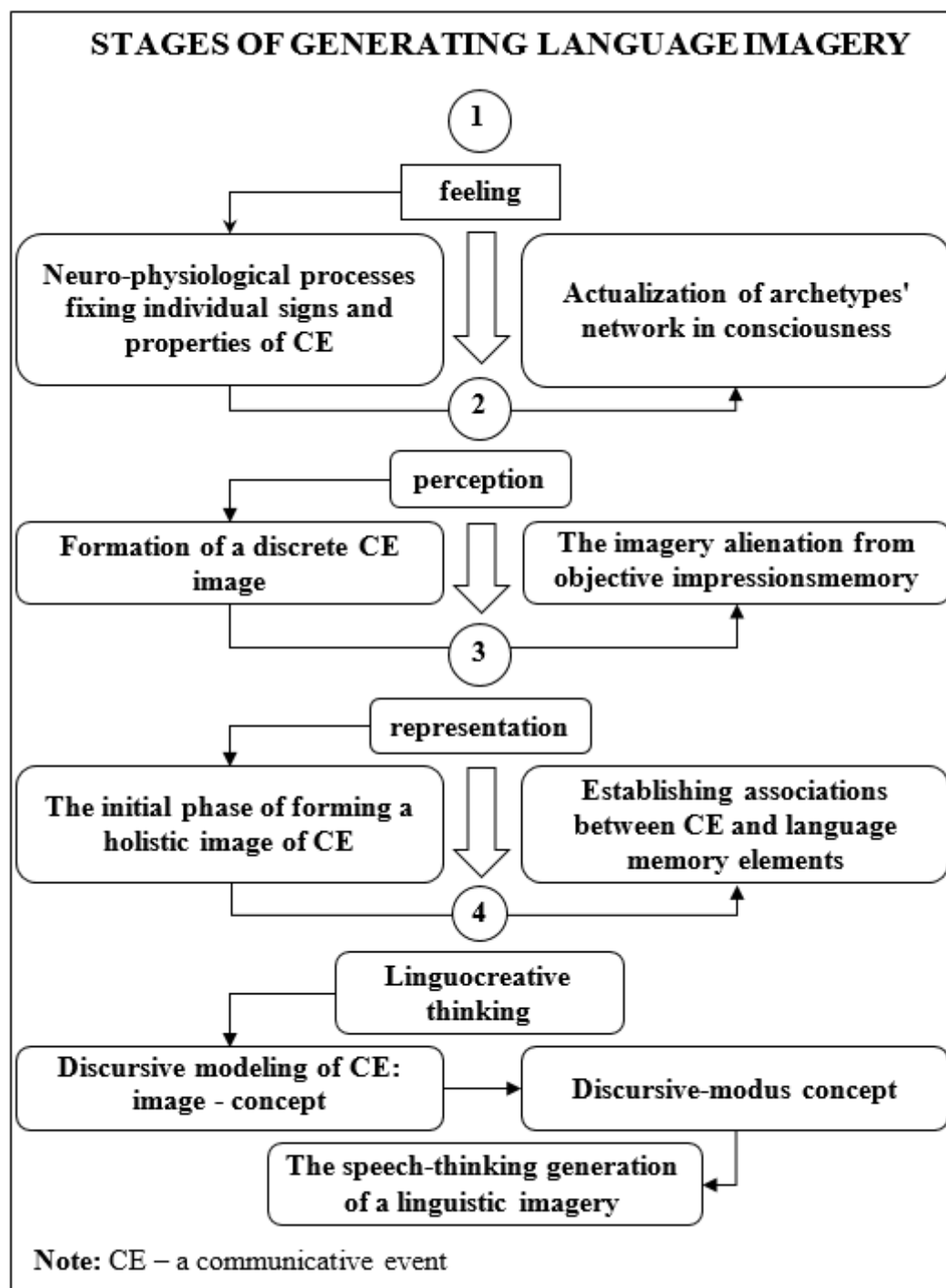
Conceiving these factors is a function of discursive consciousness. Moreover, it is the discursive consciousness that distinguishes the epistemological tier of language imagery from the objective image due to the synergy of its speech-thinking processes.

The synergy of discursive consciousness is based on syncretism (Greek *συγκρητισμός*), combining in one form several semantic streams emanating from the elements of speech experience for representing discursive prototypes and their mental metamorphoses.

In other words, since the discursive activity of communicants is based on their previous communicative-cognitive experience, the language image is discursively constructed. Additionally, it is created by

verbal means of the associative-semantic embodiment of the corresponding fragment of the communicative event described in speech / text.

Figure 2. Stages of generating language imagery
Рисунок 2. Этапы порождения языковой образности



Thus, the cognitive metaphor and its verbal derivatives are unique tools that integrate the synergy of linguistic, cultural and psycho-semantic meanings. The linguistic images projected by metaphorical thinking capture the results of creative interaction of sensory and rational cognition of the world, determining their creative nature.

The eminent scholar of human creativity Joy Guilford defined linguistic creativity as "divergent linguistic thinking" (Guilford 1982: 49), which semiotically embodies the connection between the three main levels of mental reflection of reality:

- sensory-perceptual (sensory),
- the level of representations (figurative)

and

- speech-thinking level which is based on linguocreative thinking.

Concluding remarks

It is necessary to highlight the linguocreative nature of language imagery.

1. The renowned researcher of human creativity, Joy Guilford, defined linguistic creativity as "divergent language thinking".

2. Object images of the external world serve as the main elements of linguocreative thinking. With this kind of thinking, the image of a thing can fold and unfold generating an abbreviated form of inner speech.

3. With regard to understanding language imagery, linguistic creativity is based on a psychological mechanism, "a person's ability to ignore stereotypical ways of thinking, create non-trivial verbalizations of communicative events."

To sum up, from the judgements we have made, we can identify four main parameters for the creativity of linguistic imagery:

- 1) originality – the ability to establish distant associations, original responses.
- 2) semantic flexibility – the ability to determine the main property of an object and suggest a new version of its use.
- 3) figurative adaptive flexibility – the ability to modify a stimulus in order to reveal new properties and opportunities for using.

4) semantic spontaneous flexibility – the ability to generate meanings corresponding to the discursive situation.

4. The creative properties of the linguistic image, focused on the epicenter of discursive consciousness, predetermine in the speech-generating process the choice of those words and expressions that reflect the features of linguistic mentality – the phenomenon of ethnic consciousness – forming in it the code of ethno-cultural spirituality.

These language image parameters follow from the results of the study. According to them, discourse is a communicative event, and the nature of the language image itself, its discursive and modus essence, is determined by a naive concept – the primary source of the ethno-cultural concept.

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Конфликты интересов: у автора нет конфликта интересов для декларации.

Conflicts of Interest: the author has no conflict of interest to declare.

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UDC 81'42

DOI: 10.18413/2313-8912-2022-8-4-0-2

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**Study of Yakut cinematic discourse through
film reviews analysis**

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Received 06 July 2022; accepted 13 December 2022; published 30 December 2022

Abstract. The current research is focused on investigation of the Yakut cinematic discourse through the analysis of film reviews as secondary texts. The aim of the present study is to specify the main themes of the Yakut cinematic discourse and emotions that are transmitted by the films and reflected in reviews. The material of analysis includes 72 reviews for five Yakut films released between 2016 and 2020. The choice of the films is determined by such factors as time of release, genre affiliation, popularity, number of available reviews. The reviews are written by both critics and common viewers. The research is based on the content and sentiment analysis of the material carried out by means of computer programs. The results of the research show that the main themes of the Yakut cinematic discourse are everyday life of the Yakut people, nature of the republic, non-urban community, social issues, family relations, fate. The Yakut cinematic discourse depicts gloomy life full of hardships and unfairness in harsh climatic conditions. The sentiment of the film reviews as well as the cinematic discourse is predominantly negative. The findings of the current study suggest the possibility of exploration of specific cinematic discourse through secondary texts and discourse in order to discover its particular features. Film review is able to interpret and comprehensively represent cinematic discourse.

Keywords: Film review; Cinematic discourse; Content analysis; Sentiment analysis; Yakut films

How to cite: Dukhovnaya, T. V. (2022). Study of Yakut cinematic discourse through film reviews analysis, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 15-30. DOI: 10.18413/2313-8912-2022-8-4-0-2

УДК 81'42

DOI: 10.18413/2313-8912-2022-8-4-0-2

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Исследование якутского кинодискурса через анализ кинокритик

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*Статья поступила 06 июля 2022 г.; принята 13 декабря 2022 г.;
опубликована 30 декабря 2022 г.*

Аннотация. Данное исследование посвящено изучению якутского кинодискурса через анализ кинокритик как вторичных текстов. Целью

исследования является определение главных тем якутского кинодискурса и эмоций, которые передаются фильмами и отражаются в рецензиях. Материалом анализа послужили 72 рецензии на пять якутских фильмов, выпущенных в 2016–2020 гг. Выбор фильмов обусловлен такими факторами, как дата выпуска, жанровая принадлежность, известность, количество доступных рецензий. Рассматриваемые кинокритики были написаны как критиками, так и обычными зрителями. Исследование основывается на контент и сентимент анализе, проведённом посредством компьютерных программ. Результаты исследования показывают, что основными темами якутского кинодискурса являются: повседневная жизнь якутского народа, природа республики, провинциальное сообщество, социальные проблемы, семейные отношения, судьба. Якутский кинодискурс изображает мрачную жизнь полную трудностей и несправедливости в суровых климатических условиях. Сентименты, передаваемые проанализированными кинокритиками, а также всем кинодискурсом, преимущественно негативные. Результаты исследования свидетельствует о возможности изучения определённого кинодискурса через вторичные тексты и дискурсы, чтобы установить их специфические характеристики. Кинокритики способны интерпретировать и всесторонне репрезентировать кинодискурс.

Ключевые слова: Кинокритика; Кинодискурс; Контент-анализ; Сентимент-анализ; Якутское кино

Информация для цитирования: Духовная Т. В. Исследование якутского кинодискурса через анализ кинокритик // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 15-30. DOI: 10.18413/2313-8912-2022-8-4-0-2

Introduction

Film production resulted in emergence of some textual genres that nowadays are considered to be media phenomena. Film review as an independent genre appeared in 1907 when the first text of that kind was published in the American weekly magazine “Variety”. As cinematography was evolving during the 20th century, film review was gaining popularity (Anikiev, 2018). Early movie reviews mainly discussed and criticized acting, decorations, and camera work. The number of issues highlighted in that type of text gradually increased. Thus, film reviews proceeded to cover multiple things that fall into two broad categories: formal techniques and thematic content. Formal techniques include genre, narrative, mise-en-scene, lighting, editing, music, diegetic / non-diegetic sounds while thematic content refers to the plot, topical issues raised in a film, e.g. historical, gender, racial, etc. Khotnog points out that the reviewers’

communicative goals differ accordingly. If they write about the items of the first group then their aim is to evaluate the aesthetic features of a film. In contrast, if reviewers opt for commenting items of the second group, they attempt to provide their readers with some information about the film plot in an accessible and interesting form. Hence, we see different perspectives to present critical overview: aesthetic perspective and social perspective. Social is typical for general-oriented items, i.e. an appeal to topical issues of life of a particular society whereas aesthetic is primarily important for cultural aspects (Khotnog, 2020).

Apart from professional critics, movie experts, filmmakers, and journalists, ordinary viewers started writing film reviews in the 1990s. It happened due to, first of all, accessibility of films on DVDs and the Internet and, secondly, because of human nature that makes us stay subjective about everything we perceive, e.g. services, goods,

works of art, etc. It is no wonder that analysis and evaluation of acting, directing, camera work, screenwriter's work became optional elements of a modern film review. As a result, Nabieva argues that retelling of the plot takes up most part of the film review (Nabieva, 2016).

Researchers offer various definitions of "film review" which vary mostly depending on the objectives of their studies. The term "film review" refers to an article that states its writer's opinion about a specific movie and criticizes it positively or negatively. The article helps readers understand the idea of the film and decide whether to watch it or not. Baksheeva and Gorshkova claim that being one of the genres of criticism, film review is a secondary text which belongs to the analytical group of genres. Analytical genres include analysis and evaluation of a film (Baksheeva, Gorshkova, 2019). Over the years an array of studies to determine the extent to which movie criticism influences film perception has been carried out (Terry, Butler, De'Armond, 2004). The majority of these papers has proved that film criticism historically had a great impact on the film success as it may reassure people to watch it, and vice versa – encourage them to do it (Eagan, 2018). Along with it, film criticism forms viewers' expectations, influence their perception and interpretation. Consequently, readers can evaluate a film being guided by critics' perception. Hence, the underlying feature of film review is its multifunctionality since it performs a number of functions, e.g. informative, critical (or evaluative), motivating, advertising, entertaining, etc. (Stegert, 1993). Although, the role of film critics may be debatable, we cannot deny functional power that film review possesses.

The compositional and structural organization of film reviews is variable. The structure of this type of text may depend on the author's intentions, the format of a publication (i.e. online, print), and its features. Researchers often distinguish two blocks in the structure of film reviews which can be classified as "descriptive" and "evaluative" or

"illustrative" and "constructive" (Zemtsova, 2006). The first block contains the elements of the film (the content, setting, characters, etc.) while the second block is the core of any review and represents the reviewer's judgments and comments that support his/her point of view. In addition, the compositional and structural organization of this text genre may include visual elements, for instance, trailers, film stills, posters. Going into specifics, composition of a common well-structured film review may consist of the following parts: introduction, plot summary, analysis of the key events, characteristic of characters and their interactions, reviewer's opinion, and conclusion.

M. Hoffmann notes that the important feature of film review is recoding signs either within one sign system or from one into another. It means that oral dialogues are transformed into written monologues while pictures and sounds are verbalized into a reviewer's text (Hoffmann, 1995). Therefore, film review is a product of the processing and verbalization of film text. Erman and Ermakova argue if we understand R. Barth's words about the review as a "secondary language" then any review is a discourse about the discourse (Erman, Ermakova, 2018). None of the discourses exists independently; any discourse refines other discourse and at the same time becomes a source for new discourse (Pescheux, 1999). Text is a necessary component of discourse, which is a cognitive and informative event, and its manifestation – information trail (Susov, 2007). As Fomina states, film review as a secondary speech genre can serve as a good example of the intersection and interaction of discourse (Fomina, 2011). The reviewer's discourse and film discourse interact closely at the level of the reviewer's presentation of the film text. It means that film is presented through the reviewer's perspective as the author comments on particular scenes and stills from the film, demonstrates their attitude to the story, plot development, evaluate the film. In addition, film review may also include parts of other

discourse, e.g. discourse of a screenwriter, director, other films, critics'/ directors'/ viewers' opinions, etc., as well as numerous cognitive elements that fall outside of the scope of film discourse (Mitryukhina, 2016).

Statement of the problem and dataset

In today's world which is all made up of globalized phenomena in culture, art, and in cinema, whose language is not similar to any others', ethnic cinema becomes very rare and of great value. Ethnic cinema is filmed in a native language, for a national audience, it is based on the archetypes of traditional culture, in whatever genre the motion picture is, e.g. comedy, horror, romance. The cinema of the Sakha Republic (Yakutia) is a unique example of a systemically functioning local film production whose equivalents are not easy to find. On the one hand, we may draw a parallel between Yakut films and blaxploitation movies. Blaxploitation is an ethnic subgenre of American exploitation films about African Americans who are at the same time the target audience of these films. On the other hand, it will be more accurate if we compare it with the cinema of the Inuit of Canada or the Sinitic speaking minority of Malaysia.

Yakutia has its own culture, language, traditions, mythology, religion that are unlike any others in Russia. It is worth mentioning that although being influenced by the Russian language and culture, the region managed to preserve its national language and ethnic culture. After all, it is too remote, big, cold, and special. Due to these reasons, the Yakuts have a rather apathetic attitude towards globalized cinema that we all watch. Therefore, the demand for national films is higher than for Hollywood or Russian blockbusters there.

Although movies, mostly about life of hunters and the establishment of Soviet power, were produced in Yakutia during the Soviet era, Yakut film industry has been experiencing a period of growth over the recent years. Since the release of the drama "My Love" (2004) directed by S. Potapov, which resembles South Korean thrillers, films of diverse genres (e.g. drama, comedy, horror,

etc.) have been annually produced in Yakutia. The climax seems to be reached in 2020 when the Yakut film "Scarecrow" directed by D. Davydov was selected to participate for the first time in history in the Russian Film Festival "Kinotavr" and, moreover, won the grand prize.

According to *Iampolski*, film like any other work of art does not have an ability of self-interpretation therefore needs a metadiscourse supplied by criticism¹. Cinematic language operates with themes, complex of images, various issues, which allow journalists / critics / viewers to observe how film reflects the world, people build relations, what human nature is like, as well as to highlight and interpret underlying meanings in a film that characterize the current state of society. Therefore, reviews for feature films have become a means of discussion of social issues and analysis of social processes (Hegai, 2019).

In the current study we make an attempt to analyze film reviews for modern Yakut films in order to discover main themes, issues, images of the Yakuts and their region shown in ethnic cinematic discourse. Emotions and tones conveyed by films are also of particular interest to us. Thus, the main aim of this research is to implement content analysis of film reviews and identify their underlying sentiment so as to learn about Yakut cinematic discourse through the film reviews.

The material of the research is 72 reviews for five Yakut films released between 2016-2020. The criteria for choosing films are time of release, genre affiliation, popularity, number of available reviews. It is worth mentioning that the reviews are written by both critics and common viewers. Users' reviews were retrieved from Kinopoisk², Russian most popular content source for films, and critics' reviews were taken from

¹ Iampolski, M. (2012). Chto takoe kinokritika? [What is film criticism?], OpenSpace.ru, available at: <http://os.colta.ru/cinema/events/details/35533?expand=yes#expand> (Accessed 13 August 2021). (In Russian)

² Kinopoisk, available at: <https://www.kinopoisk.ru/> (Accessed 20 January 2022). (In Russian)

different Russian magazines and newspapers (Gazeta.ru³, Fontanka⁴, Kinoart⁵, Kino-teatr.ru⁶, GQ⁷, Kinoafisha⁸, InterMedia⁹, Buro 24/7¹⁰, Expert¹¹, Trud¹², Time Out¹³, Meduza¹⁴, Echo of Moscow¹⁵).

Research methods

To identify the main themes of Yakut cinematic discourse in this study we apply one of the most effective methods of text research – content analysis. Content analysis is a formalized methodology for the study of texts and graphic information that involves transformation of the analyzed data into quantitative form and its statistical processing. The object of content analysis can be the content of various printed materials, radio and television programs, films, advertisement, documents, public speeches, questionnaires¹⁶. According to Pashinyan, content analysis involves the conversion of

verbal information into objective non-verbal (digital, quantitatively processed) data whose interpretation allows a researcher to go beyond the text itself and make conclusions about social aspects of the surrounding reality (Pashinyan, 2012). Neuman suggests using the method to analyze large text arrays to determine various structural-linguistic properties (e.g. key words, main structural components, frequency of semantic categories, etc.) (Neuman, 2011) as well as characteristics of the author of the text (e.g. author's style, communicative intentions) and the target audience (Ivanova, Soboleva, 2020). Therefore, this type of analysis gives a scholar opportunity to extract those components of textual or paratextual data that interest them and present the results in a convenient form for further analysis. For the purpose of the current research, we employ software ADVEGO¹⁷ for implementing both quantitative and qualitative content analysis of film reviews. The algorithm of analysis involves the following steps. First, we have semantic cores of the reviews built by means of the computer application. Second, applying the method of semantic analysis, we manually allocate lexical units from the semantic cores into a number of semantic fields. In modern linguistics semantic field is defined as a set of linguistic units brought together by a common content and reflecting the conceptual, objective or functional similarity of concrete phenomena. The semantic field is autonomous and can be distinguished as an independent subsystem of a language (Kobozeva, 2000). The criterion for grouping words is a common semantic property they share. We title each semantic field with noun(s) that contain core semes for the lexical units it includes. Finally, we add up frequency distribution figures of individual words provided by the software within each field and hereby calculate ratio of topics discussed in the reviews.

Topal and Ozsoyoglu argue that reviews and ratings for a film closely relate to

³ Gazeta.ru, available at: <https://www.gazeta.ru/> (Accessed 25 January 2022). (In Russian)

⁴ Fontanka, available at: <https://www.fontanka.ru/> (Accessed 25 January 2022). (In Russian)

⁵ Kinoart, available at: <https://kinoart.ru/> (Accessed 25 January 2022). (In Russian)

⁶ Kino-teatr.ru, available at: <https://www.kino-teatr.ru/> (Accessed 26 January 2022). (In Russian)

⁷ GQ, available at: <https://www.gq.ru/> (Accessed 26 January 2022). (In Russian)

⁸ Kinoafisha, available at: <https://www.kinoafisha.info/> (Accessed 26 January 2022). (In Russian)

⁹ InterMedia, available at: <http://www.intermedia.ru/> (Accessed 28 January 2022). (In Russian)

¹⁰ Buro 24/7, available at: <https://www.buro247.ru/> (Accessed 28 January 2022). (In Russian)

¹¹ Expert, available at: <https://expert.ru/> (Accessed 28 January 2022). (In Russian)

¹² Trud, available at: <https://www.trud.ru/> (Accessed 28 January 2022). (In Russian)

¹³ Time Out, available at: <https://www.timeout.ru/msk> (Accessed 28 January 2022). (In Russian)

¹⁴ Meduza*, available at: <https://meduza.io/> (Accessed 28 January 2022). (In Russian) (*is included by the Ministry of Justice of the Russian Federation in the register of foreign media performing the functions of a foreign agent)

¹⁵ Echo of Moscow, available at: <https://echo.msk.ru/> (Accessed 28. January 2022). (In Russian)

¹⁶ Bolshoi psikhologicheskii slovar [The big physiological dictionary]. Ed. by B. Meshcheryakov, V. Zinchenko. Moscow: Praim-Evroznak : OLMA-PRESS, 2005. (In Russian)

¹⁷ ADVEGO, available at: <https://advego.com/text/seo/> (Accessed 30 January 2022).

spectator's emotions that are evoked by a movie (Topal, Ozsoyoglu, 2016). We use the online service SentiStrength¹⁸ and application program VAAL¹⁹ to carry out sentiment analysis of the film reviews in order to identify tone of the cinematic discourse and authors' emotional response evidenced in there. Sentiment analysis also known as opinion mining is a method of studying people's opinions, assessments, attitudes, and emotions in relation to objects such as products, organizations, personalities, events, problems, and etc. Sentiment (feeling, opinion, mood, also called the tonality of a text) is an emotional assessment expressed in a text (Pazelskaya, Solovyev, 2011). Sentiment can be characterized as verbally articulated positive or negative evaluation. As some scholars claim, sentiment analysis of film reviews assists in understanding the extent to which the film impresses its audience (Abhishek, Mehral, Murthy, 2020). The approach is particularly useful when content is prone to subjectivity (Goyal, Parulekar, 2017). This method appears at the intersection of linguistics and computer science which attempts to automatically identify the sentiment. Common practice of implementing sentiment analysis includes the automatic identification of whether a review for a particular item (a book, a movie, or any consumer goods) is positive or negative. Sentiment analysis programs can be considered as content analysis tools (although, in fact, they are not), since they are configured to search for evaluative and emotive vocabulary in the text according to pre-compiled tonal dictionaries or rules. In compliance with the totality of the discovered "negative" and "positive" vocabulary, the tonality of the text is evaluated on a polarized scale that reflects the range of emotional intensity of the utterance in numbers with the

signs "plus" and "minus" (Feldman, Sanger, 2006).

Results and Discussion

1. Content analysis

The first film chosen for analysis is the drama "Scarecrow" (2020) directed by D. Davydov. The film tells a story about a witchdoctor who lives in a Yakut village. Fellow villagers avoid the main character and call her a scarecrow. Nevertheless, whenever they fall ill, they seek help from her, as she is the only person there who can cure them. Accepting her gift as a curse, the woman suffers from it but she does not give up helping people. In fact, we find out that this behavioral pattern is culturally determined. Vinokurov states that in Yakut mythology human is sympathetic with anyone who is in pain or suffers from some disease (Vinokurov, 2017).

When analyzing the semantic core of the reviews written for this movie, we managed to group key vocabulary into nine semantic fields. Figure 1 presents their ratio.

1) **Place / Province:** *Yakutsk / Yakut / Yakutia, local / local dweller, village / fellow villager, republic, origin / be born / native, countryman, region/ regional, folk, rustic, settlement, hinterland, neighbour, traditional.*

2) **Life / Reality:** *real / reality / realism, vodka, work / to work, world / surroundings, human, bread, shop, common, ordinary, loneliness, to booze, sweat, everyday life, severe, gloomy, to beat, true story, wild, social.*

3) **Magic:** *gift, sorceress, miracle / work miracles, curse / to curse, power, mystical, witch, healer / healing, ritual, mystery, trance state, Old mother.*

4) **Fear:** *scarecrow, to frighten / frightful, to fear / fear; black, horror.*

5) **Cure:** *help / to help / help everybody / can help, pain, to cure, patient, pain, disease, death, salvation, infertility.*

6) **Feelings:** *spite/spiteful, love, to love, to endure, feeling, sensation, suffering, to hate, to wish, to stifle, hope, regret, shame.*

7) **Nature / Faith:** *soul, destiny, to believe, sin.*

¹⁸ SentiStrength, available at:
<http://sentistrength.wlv.ac.uk/> (Accessed 10 February 2022).

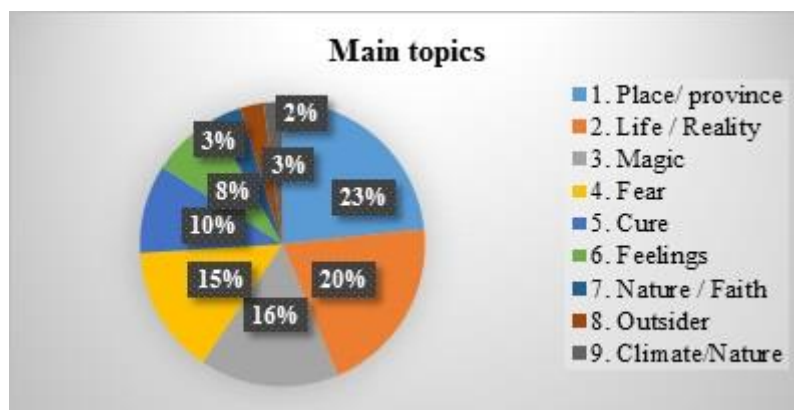
¹⁹ VAAL, available at:
<http://www.vaal.ru/prog/free.php> (Accessed 10 February 2022).

8) **Outsider:** *strange, hermit, outcast.*

9) **Climate / Nature:** *snow, harsh, snow-covered, cool.*

Figure 1. Topics discussed in the reviews for “Scarecrow”

Рисунок 1. Темы, обсуждаемые в рецензиях на фильм «Пугало»



The second film is the comedy “The sun above me never sets” (2019) directed by L. Borisova. The main character of the film is Altan who goes to the Far North after a quarrel with his father. Altan spends a month on a deserted island all alone. Soon he gets a neighbour, an old man called Baibal. Baibal comes there to live last days of his life and asks Altan to bury him next to his wife. One day, the character finds out that Baibal’s daughter disappeared when she was young. He persuades the old man to create an entertaining video blog to find her, and at the same time postpone the day of his death. Altan does everything to encourage the old man to live another beautiful day.

We identified eight main themes in the reviews. Figure 2 presents their ratio.

1) **Stages of life:** *old man, young, generation, guy, new, death / to die, modern, children, woman, elder, grave, to bury, adult, old, young man, teenager, generation gap.*

2) **Virtues:** *love, kind, warm, happy / happiness, heart, soulful, worthy, live, sincere / sincerity, light, smile, hope, goodness, wisdom.*

3) **Family:** *daughter, family, father, name, grandfather, wife, grandson, uncle, parent, relative, grandmother.*

4) **Nature:** *island, North / far North / northern, sea / Laptev Sea, nature, wind, ground, hunt, sky, somewhere far in the forest.*

5) **Time:** *summer, time gap, often, eternal, age, always, rare, today, soon, sudden.*

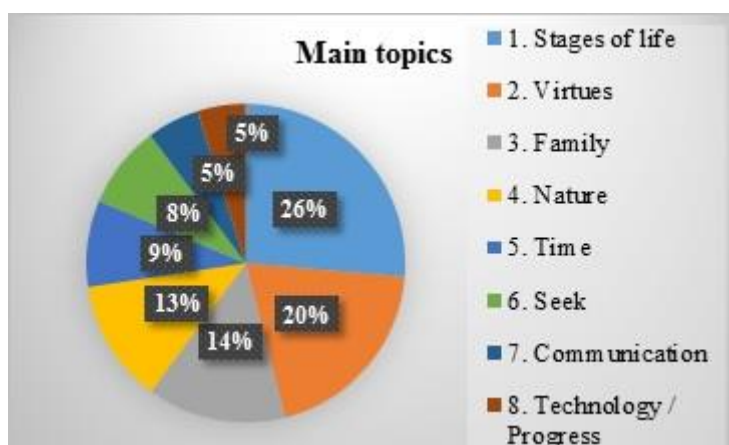
6) **Seek:** *to find, to meet / meeting, to lose, together, to gain, search, news.*

7) **Communication:** *language / common language, to understand, communication, reply, talk.*

8) **Technology / Progress:** *Internet, video blog, channel, globalization, idea, urban.*

Figure 2. Topics discussed in the reviews for “The sun above me never sets”

Рисунок 2. Темы, обсуждаемые в рецензиях на фильм «Надо мною солнце не садится»



The third film is the drama “Black Snow” (2020) directed by S. Burnashev. This movie is about a long-distance truck driver who delivers food to remote northern areas of Yakutia. He brings vodka to a local illegal alcohol dealer, thereby making the local population booze. After another trip, the main character exchanges vodka (kind of currency among northern population) for meat and fish and decides to go back to the city alone. On his way back, his truck breaks down. While the character is trying to repair the car, it falls down on him, getting him trapped somewhere in the vast wilderness of the north.

Having researched the semantic core of the reviews, we grouped key vocabulary into six semantic fields. Figure 3 illustrates their ratio.

1) **Work:** way, truck driver, road / to respect the road, city, drive, rout, to sell, price, carcass, cargo, KAMAZ truck, car.

2) **Lifestyle:** vodka, meat, product, exchange, wolf / lone wolf / wolfish, to get somebody drunk, pain, sick / to be sick, catch, fish, to hunt / hunting.

3) **Human nature:** sinner / sin, spirit, soul, beast side, businesslike, strong, fair, confident, humane, honest, avaricious, brutal.

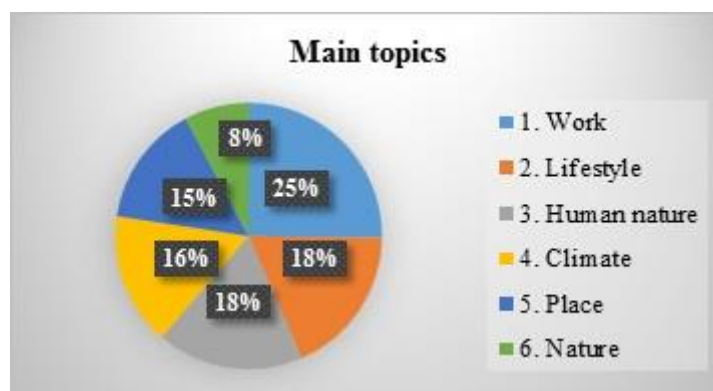
4) **Climate:** snow / snowy, white, survival, winter, frost, fierce.

5) **Place:** fellow countryman, Yakutia / Yakut, native, village, ethnic, emigrant.

6) **Nature:** nature, star / polar star, Arctic, affluence, deer, northern lights, severe.

Figure 3. Topics discussed in the reviews for “Black Snow”

Рисунок 3. Темы, обсуждаемые в рецензиях на фильм «Черный снег»



The next film selected for the current study is the detective “My murderer” (2016) directed by K. Marsaan. The film tells a story about a young detective who is investigating a murder. Soon, he finds a suspect who confesses to the crime. It seems that the case can be solved easily but the detective spots oddities and inconsistencies in the testimonies. Despite the disapproval of his chief, the character decides to look into the matter. The chain of events leads him to a settlement of gold miners where he reveals some secrets.

We clustered vocabulary from the semantic core of the reviews into five semantic fields. Figure 4 demonstrates the ratio of these themes.

1) **Detective:** *murder, detective, case, occasion, end, thriller, investigator /*

investigation / to investigate, criminal, crime, motive, to suspect, police officer, to murder, brutal, intrigue, law, to solve, key, young inspector, clue, chief.

2) **Place:** *republic / Sakha, Russia / Russian, culture / cultural, region / regional, national, city, village, Yakut, dweller, homeland, original, north, tradition, Yakut language, authentic, urban.*

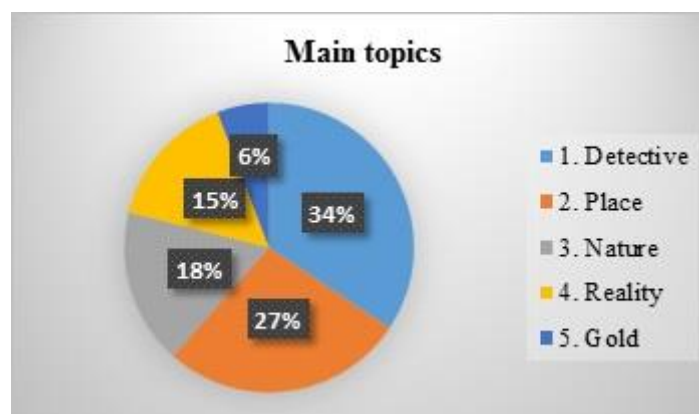
3) **Nature:** *nature, North, Asian, wild, lake / Saisary Lake, landscape, mountains, river / the Lena River, taiga, bank, permafrost.*

4) **Reality:** *atmosphere, real / real events, world, visible, live, existential / to exist, social, true story, everyday.*

5) **Gold:** *gold / golden, mine / gold miner / gold mine.*

Figure 4. Topics discussed in the reviews for “My murderer”

Рисунок 4. Темы, обсуждаемые в рецензиях на фильм «Мой убийца»



The fifth movie is “His daughter” (2016) directed by T. Everstova. The main character of the film is a first-grade student who lives with her grandparents in a remote village in Yakutia. The girl thinks that the world around her is beautiful, and it will always be like that. She does not want it to change but one day some events happen that the girl is not ready to put up with.

We identified six key themes in the reviews. Figure 5 presents their ratio.

1) **Family:** *grandmother, grandfather, daughter, father, girl, little, close, adult, age,*

family, granddaughter, child, to be born, relative.

2) **Life:** *tradition, everyday life, language, pace, spirit, soul, custom, household, original.*

3) **Place:** *Yakut / Yakutia / Yakutsk, village/ tiny village, taiga, remote, Siberian.*

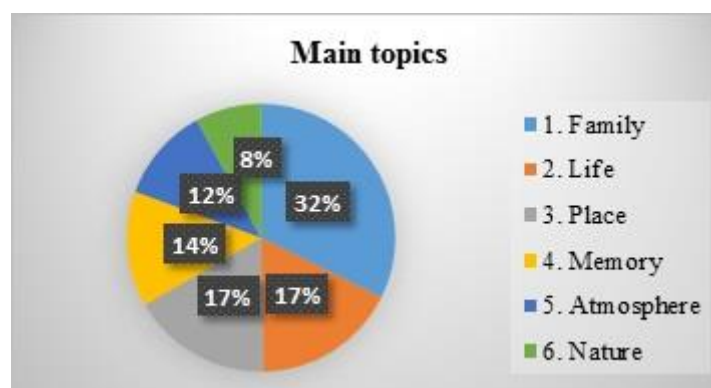
4) **Memory:** *childhood, reminiscence, atmosphere of USSR, memory, past, retelling.*

5) **Atmosphere:** *pleasant, sincere, simple, love, careless, tranquility, slow, kind.*

6) **Nature:** *nature, world, winter, landscape.*

Figure 5. Topics discussed in the reviews for “His daughter”

Рисунок 5. Темы, обсуждаемые в рецензиях на фильм «Его дочь»



Having compiled semantic fields from lexical units that are included in the semantic cores of the reviews, we received the following results.

Speculation 1. Reviewers insist on a true description of life of the Yakuts by using words like *real, reality, realism, social, true story, existential*, etc. They claim the films depict everyday life of people without any cinematic embellishments. The lifestyle is traditional, extremely simple and devoid of any frills and pretentiousness. Lexical units like *tradition, common, ordinary, everyday, gloomy* indicate this. We do not find a single example illustrating people's wealth or affluence. This quality is only attributed to the nature of Yakutia which is rich in precious metals, gems, fossil fuels.

Film characters are often compared to animals in both their nature and behaviour. For example, we encounter such words and expressions as *wolf, lone wolf, wolfish, wild, beast side*. They demonstrate that people struggle for their existence in harsh climatic conditions described by numerous adjectives *harsh, fierce, severe*, etc. The hard work of the inhabitants of Yakut villages is a part of everyday life. Locals are mainly engaged in traditional crafts like *fishing, hunting, trade, mining* and even *witchcraft*. Hence, the inference is that life in the Yakut province comes down to survival.

Speculation 2. We distinguish the semantic field “Nature” in reviews for each

film. In the discourse of film reviews, we find indications of the geographical location of the republic *North, Siberia*. There are references to the geographical zones – *taiga*, which in fact occupies 4/5 of the territory of the region, with its *permafrost* ground. Besides, we also notice some references to another geographical zone of the region – forest-tundra in the north – owing to expressions like *somewhere far in the forest*.

It is noteworthy that semantic fields titled “Nature” include vocabulary like *bank, river, lake, sea*. We believe that it reflects another important natural characteristic of the republic. Yakutia is one of the most riverine territories in Russia since it has 700 thousand rivers and 800 thousand lakes. Yakut cinematic discourse could not do without the image of the *Lena River*, which is the largest river in the country as well as the outlet of Yakutia to the *sea, Laptev Sea*.

Special emphasis in the natural description of Yakutia is put on winter. In our opinion, it is not surprising as the season lasts there for as long as six months. Therefore, *snow* is often mentioned there. Indeed, Yakutia has the coldest permanently inhabited settlements on the planet. We discover that population depends on nature because it feeds them with *fish, meat, deer* and provides with, for example, *gold*.

The *harsh northern climate, cold, frost, snow, fierce wind* determine many aspects of the life of the region. Yakutia is the largest

subject of the Russian Federation, but the population density here is one of the lowest in the country. The remoteness of the territory, *wild* expanses, *severe* climate and *rural* landscapes speak of the alienation of people, a detached position in relation to others.

Thus, thanks to the semantic fields “Nature”, built on the basis of semantic kernels of reviews, we get capacious and accurate geographical description of the region pictured in Yakut films. In this regard, we argue that the theme of nature takes the central place in Yakut cinematic discourse. In addition, we believe it also reflects the significance of environment for Yakut folk as well as their strong connection with it.

Speculation 3. Having compiled semantic fields “Place” which include lexical units like *village, tiny village, rustic, settlement, hinterland, etc.*, we realized that mostly rural areas are described in Yakut cinematic discourse. We assume there is a number of reasons for this. Firstly, the number of cities and rural settlements in Yakutia (cf. 13 and 582). Secondly, filmmakers might intend to attract more attention to life of non-urban areas of the region since it is deemed to be more authentic. Through the analysis of semantic cores of the reviews, we deduced that community occupies an important place in life of the Yakut people. A lot of key vocabulary, e.g. *surroundings, tradition, culture, cultural, regional, national, custom, ethnic, etc.*, underline that community is determined by culture and origin. Consequently, Yakut rural community honors its customs, traditions, traditional way of life, respects its roots, and is inevitably connected with the place of origin. People do not stand out there in order to have a comfortable life. Otherwise, neighbours will exile them from the community. We have identified the theme “Outsider” in “Scarecrow” where the main character differs from her fellow villagers. It should be noted that the topic of neighbourship is emphasized in the discourse of the reviews, e.g. *fellow villager, fellow countryman, neighbour*. People who live in small ethnic groups in villages know each

other better and rely on each other more than those who live in cities. In case one lives a life of a *lone wolf* like the main character of “Black snow” then they do not get help when are in troubles.

Speculation 4. Theme of family is identified in the discourse of Yakut cinema as it is discussed in the texts of reviews. The semantic fields titled “Family” contain references to nuclear family comprising *mother, father, daughter, wife, parent* and extended family comprising *grandmother, grandfather, grandson, uncle, etc.* This fact indicates the value of affinity and connection not only between parents and their children but also between different relatives and generations. Within this framework topical issues relating to loss of connection with family members and the importance of its restoration are raised. The theme of family addresses to relations between younger and older generations, i.e. *generation gap*. We notice the possibility of finding a *common language* for them in the Yakut society.

Speculation 5. Another central theme of the Yakut film discourse is faith. However, not in God. In fact, we do not find any references to God in the texts of reviews. Discourse of the reviews shows that the Yakuts believe in *spirits*, some ancient *magic*, power of healing by *witchcraft*, superstitions, human’s supernatural abilities. Reviewers pay special attention to the ideas of *soul* and *fate* (usually bad and ruthless). According to the Yakut traditional ideas, human soul consists of three parts: mother’s soul, earth soul and air soul. Mother’s soul is inherited from parents; it is in traditions, culture. Earth soul is the material substance, or physical body. Air soul is intelligence, mind, communicative and social skills (Kulakovskij, 1975). It seems that these ideas about soul also explain the importance of family bonds and culture for the Yakuts. One more thing we should discuss here that relates to religion is *sin*. We allocate this keyword into the semantic fields “Faith” and “Human nature”. The fact that this word belongs to the semantic core of the analyzed discourse implies that there are norms and

rules in Yakut religion which people do not stick to or break. We find out that there is a word in the modern Yakut language that means transgression, misdemeanor or taboo. This fact appears to prove our assumption.

Speculation 6. Key vocabulary grouped in the semantic fields “Human nature”, “Positive feelings / features”, “Feelings” demonstrate that human nature of the Yakuts is dual. On the one hand, there are many confirmations of its depravity, sinfulness, greed, e.g. *spite, spiteful, avaricious, sinner, to hate, beast side, etc.* On the other hand, *kindness, sincerity, honesty, dedication* illustrate its virtues. We found out that in Yakut mythology a person is defined as a very different, multi-faceted, contradictory, and ambivalent being. A person can be both old and young, good and evil, angel and devil, beautiful and ugly, brave and cowardly. Every time human beings are characterized differently because they have a diverse set of properties. Thus, film characters balance between good and evil. Meanwhile, we observe that good is often rewarded with evil. This fact speaks about the injustice of *destiny* again. According to the cosmogony of the traditional religion of the Yakuts, the world exists in three dimensions: the underworld inhabited with evil spirits; the middle world where people live; the upper world which is the abode of the supreme deities (Novikov 1996). The curious thing is that supreme deities are not always good. We suppose that this fact can explain life unfairness for the Yakuts.

Speculation 7. Through the film reviews discourse we learn about the problems which affect life of the Yakut society. The results of the analysis demonstrated that one of the vices or weaknesses of the Yakuts is alcohol. We included the key word *vodka* into the semantic field “life” as it is described as a part of everyday routine. Alcohol helps people to escape from the harsh reality, hard work, and fear of bleak future. In addition to drinking, the characters of the Yakut cinematic discourse suffer from loneliness. Perhaps, the first is the consequence of the second. In our

opinion, the reasons for loneliness can be internal and / or external. To internal ones we refer oddities of characters’ behaviour. If a member of the ethnic community differs from the others then he/she will become an outcast. We believe that external causes of loneliness are remoteness of settlements, long distances that characters have to travel between them, vastness of the territory, low population density. It seems that the reviewers draw a parallel between isolation of the republic and the feeling of loneliness of its residents. The isolation of people living in the hinterland leads to another problem – technological backwardness – discussed in the reviews. In general, we infer that the republic is not much involved in the process of globalization.

The results of the content analysis demonstrate that modern Yakut cinematic discourse sheds the light on the life and character of the Yakuts. Depicting the characters’ inner world and emotional experience, the cinematic discourse inevitably increases its emotivity. According to Shakhovsky, emotion is an additional content of an utterance as well as a way to assess the meaning of objects and phenomena of the real world (Shakhovsky, 2008). As a rule, film reviews as secondary texts include three emotive components: description of characters’ emotions, viewer’s emotions evoked by the film, and reviewer’s emotional reaction to the movie which is entwined with the assessment. It is important to note that only three out of 72 reviews analyzed in this paper have negative rating. Thus, through the analysis of the film reviews’ sentiment (emotions) we will discover the additional content of the films conveyed via secondary texts. We suppose that the sentiment analysis of the reviews will complement the results of the content analysis as well as provide other features of the Yakut cinematic discourse.

2. Sentiment analysis

Technological approaches to setting and classifying tone of a text differ (e.g. rule-based, dictionary-based, machine learning, etc.) but in the case of SentiStrength the method of tonal dictionaries is used. A tonal

dictionary is a list of words with a key value for each word, i.e. a figure with a plus or minus sign. Analyzing a text, the program finds words that are contained in the dictionary, assigns them the appropriate tone values, and then calculates the tone of the whole text. The algorithm for implementing a sentimental analysis of the film reviews and

presenting its results included the following steps: analysis of each review by means of the program, identifying its positive and / or negative value, calculation of total negative or positive figures for each film, and presenting the results in form of a graph. Figure 6 and Figure 7 demonstrate the results of the sentiment analysis.

Figure 6. Sentiment analysis of the critics' reviews

Рисунок 6. Сентимент-анализ рецензий критиков

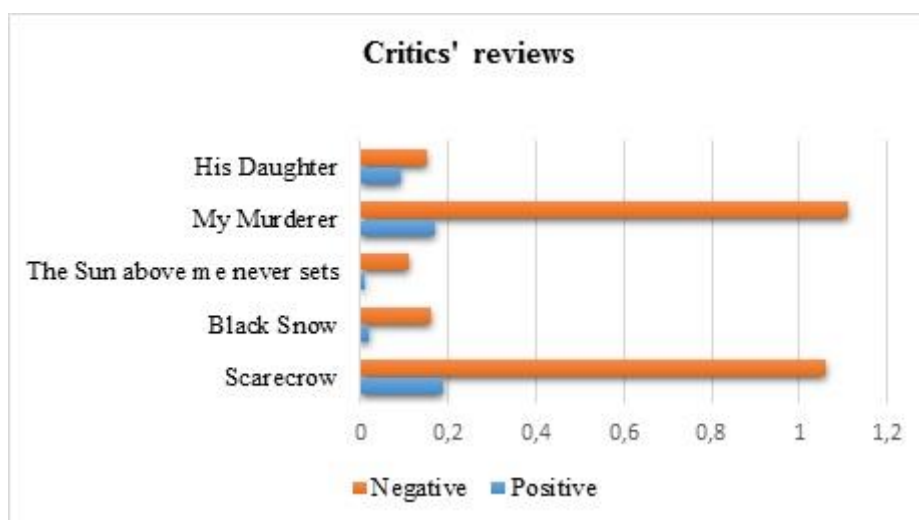
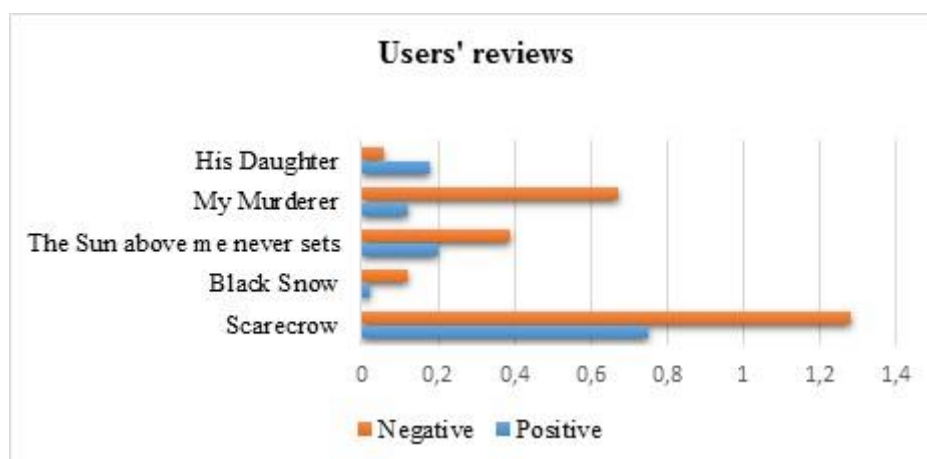


Figure 7. Sentiment analysis of the users' reviews

Рисунок 7. Сентимент-анализ рецензий пользователей



Observation 1. The figures show the film “Scarecrow” seems to the viewers not as gloomy as to the critics. We see that the positive figure is almost by 40% lower than the negative one for users' reviews.

Meanwhile, for critics' reviews this figure is by 75% lower.

Observation 2. The results of the sentiment analysis of critics' and users' reviews for “Black snow” demonstrate approximately the same ratio of positive and

negative figures. Nevertheless, the negative value of users' reviews is by 50% lower than of critics'.

Observation 3. We obtained curious results for the film "The sun above me never sets". The negative value of users' reviews is by 50% higher than the positive one. As for the critics' reviews, negative sentiments are four times lower than for users', and positive are hardly evidenced for them.

Observation 4. Positive figures are approximately the same for both critics' and users' reviews for the detective story "My murderer". However, negative value is almost twice as high for critics (54% higher).

Observation 5. The users' reviews for "His daughter" are the only reviews which have positive value higher than negative one. Positive figure is by 25% higher there. On the contrary, critics' reviews have negative sentiments twice as high as positive ones.

Observation 6. 16,1% of critics' reviews turned out to have 0 sentiment value. As for users' reviews, 10,2% of them are neutral. 35,4 % of critics' reviews have only negative value. In contrast, 20,5 % of users' reviews have only negative value. 6,4 % of critics' reviews have only positive value compared to 12,8 % of users' reviews.

The results of the analysis show the apparent difference between sentiments of critics' and users' reviews. We assume that this difference may be explained by the following factors. First, polar sentiments expressed by most of the critics' and users' reviews for the film "His daughter" may be caused by the divergence in perception of the film story. In our view, ordinary viewers may identify themselves with movie characters and associate characters' lives, problems, worries, with their own. Consequently, being sympathetic with the characters, the users are likely to describe the story and their own emotions in a more positive way. Critics on their part presumably try to stay objective and do not build such associations. Second, the extent to which negative sentiments prevail over positive ones in the critics' reviews unlike in users' texts may stem from the

difference in verbalization of emotions. The critics allegedly resort to more emotional and expressive vocabulary in their texts to influence the reader. Thus, their reviews acquire much higher negative value. Whereas the users tend to focus not on the consumption of their texts but on the description of their own understanding, perception, assessment of a film. Hence, critics and users may have different writing styles which result in different sentiment values of their reviews. We admit the overall negative sentiment of the reviews and attribute it to the Yakut cinematic discourse.

We also carried out a phonosemantic analysis of the texts to specify what tones positive and negative sentiments of the reviews correlate with. We applied VAAL, a Russian application created for qualitative and quantitative analysis of sound components of a word, utterance or text (Ivanova, Soboleva, 2020). According to Studentsova and Golomzik, the application allows to predict the effect of the unconscious impact of texts and single words, based on their phonosemantic characteristics, on the mass audience (Studentsova, Golomzik, 2013).

We conducted the phonosemantic analysis of each film review and identified the most frequent tone characteristics of these texts.

"Scarecrow": *majestic, strong, loud, bright, repulsive, scary, angry, great, brave.*

"The sun above me never sets": *angry, slow, frail, great, brave, scary, cowardly.*

"Black snow": *angry, masculine, strong, scary, rough, slow, bad, heavy, cold, dark.*

"My murderer": *cheerful, angry, small, weak, quiet, frail, rough, cowardly, dull, scary, sad, base.*

"His daughter": *small, rough, repulsive, bad, angry, scary, quiet, cowardly, dull, frail.*

The obtained results illustrate that paramount tones of all reviews are *angry* and *scary*. In fact, these tone characteristics are consistent with the overall negative sentiment of the reviews. Although negative tones dominate over positive ones, we can put them in antagonistic pairs. For example, *angry* /

scary / sad – cheerful, strong – frail, cowardly – brave, quiet – loud, bright – dull, repulsive – majestic. We notice the similarity between the tonality dualism and ambiguity of human nature distinguished through the content analysis of the reviews. Thus, we can extrapolate this quality of ambivalence onto the Yakut cinematic discourse. In general, the tones of the reviews indicate gloomy atmosphere created by the film stories. Having identified the main themes of the Yakut cinematic discourse, we can attribute the tone characteristics to particular content items. Thus, we suppose that the Yakut cinematic discourse depicts miserable life full of hardships and unfairness in harsh climatic conditions of disadvantaged people who are brave and coward, weak and strong at the same time. We conclude that the main themes of the Yakut cinematic discourse have and evoke negative sentiment accompanied with angry and scary tonality.

Conclusion

The current study demonstrated that a comprehensive analysis of cinematic discourse can be carried out through investigation of secondary texts. This paper considers a film review for this purpose. The results of the research showed that by means of computer-mediated content analysis we obtained the data about the main themes of cinematic discourse of the ethnic minority, e.g. everyday life of the Yakut people, nature of the republic, non-urban community, social issues, family relations, fate. The tools of sentiment and phonosemantic analysis prove to be efficient for studying sentiments of the movie content and its perception by viewers. Through the film reviews analysis we discovered that the Yakut cinematic discourse has overall negative sentiment along with angry and scary tone. The findings of the current study suggest that there is a possibility to research a specific cinematic discourse of either ethnic or mainstream movies through secondary texts and discourse in order to discover its particular features.

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- Конфликты интересов: у автора нет конфликта интересов для декларации.**
Conflicts of Interest: the author has no conflict of interest to declare.
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DOI: 10.18413/2313-8912-2022-8-4-0-3

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The world of interpretations in culture space

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Received 28 April 2022; accepted 09 November 2022; published 30 December 2022

Abstract. Text interpretation is essentially a dialogical form of knowledge. The sense of a text exists in reality only within human communication, within a situation of a dialogue. Dialogue turns out to be impossible when its participants only consider the interlocutor's messages through their own usual and limited set of senses, or they try to fully perceive the interlocutor's way of comprehension by tending to break all links with their sociocultural environment's normative-valued systems. And only partial digression beyond the limits of the conventional enables us to find common ground for understanding. Therefore, understanding always appears not simply as a dialogue, but as a collision of "the usual" and "the unusual". This process is connected with loosening of well-known ideas, taking phenomena out of their comprehension's familiar context and destructing the old sense. Understanding starts from the initial point in dialogical movement – a given text requiring understanding as a communicative subject. A movement to the past – past contexts, when it is necessary to understand the text the way the author understood it himself without going beyond this understanding. The solution of this hermeneutic issue is rather difficult and requires the involvement of a huge amount of material. And finally, a movement to the future – prescience, construction of further contexts. Senses "flatten" without such a work of understanding. They transform into knowledge and stop dividing (changing). Every author is a prisoner of his epoch, of his contemporaneity. Subsequent times liberate him from this captivity, and literary studies are called upon to assist this liberation. Hence there is a need for the skills of not only understanding, but also explaining and interpreting texts. When we move from understanding a text to interpreting it, we leave the text in its semantic uniqueness and move into the communicative space of semantic transformations.

Keywords: Dialogue; Sense; Interpretations; Understanding; Frame; Cultural context

How to cite: Nikitina, E. S. (2022). The world of interpretations in culture space, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 31-40. DOI: 10.18413/2313-8912-2022-8-4-0-3

Introduction

The functions of a dialogue are progressively extending in the modern world. As well as forming new values indirectly, dialogue also becomes a value in itself. A meaningless dialogue is absurd. The culture of mutual understanding presupposes

recreation and improvement of mechanisms and technologies of comprehension.

Furthermore, an enormous number of various texts, including fake ones, has fallen down on human memory due to the information revolution. Filtration, processing and assimilation of information prompt a person to come back to the culture of working

with a text. Semantic text processing, is the leading component of text analysis, although not the only one. There is another aspect of the relevance of semantic analysis of the text. It involves finding the senses necessary for human life. These senses are the essential characteristic of the texts. While accumulating in culture, they had to be preserved and displayed. Replacing the mythological Hermes, text acts as a mediator, as a subject of communicative act. It contains information not only about events but also about the intention (sense) to transfer this information in a certain period of time or in a specific communicative situation. Learning to understand makes people more comprehensible, and this, in turn, affects both labour productivity and a person's creativity, and even life expectancy.

The scope of research on comprehension, text and meaning has exposed the idea that narrow specialisation was precisely what slowed down the solutions to the problems posed. The basic meaning of the text is referred to as *text sense* in this article. The text sense interpreting issues turned out to be much more complicated compared to the other tasks solved in certain disciplines, in certain areas and in certain practices. Despite the fact that semantic analysis of the text affiliates to philology, G. O. Vinokur wrote that "the main task of the philologist is to interpret the content and the meaning of the text" (Vinokur, 1991: 81). Text meaning is being discussed within such disciplines as text theory, text linguistics, poetics, analytical rhetoric, pragmatics, semiotics, hermeneutics, pedagogics, speech communication, and also philology which incorporates the canons of human comprehension. These discussions define the multidimensionality of the text (Bloom, 1975; Culler, 2002; Derrida, 1972; Ma and Zalesova, 2012, etc.).

Main part

The widespread notion of understanding as something extremely simple, requiring little thought, is quite common and sometimes the word 'understanding' itself is rarely used in everyday speech to mean 'grasping' or

'assimilating the meaning of what is said'. Along with this, text is a sociocultural product. Everything is socialized in it: the form (language), the structure (logic), and the designated reality (depicted subject). Sense is a phenomenon of individual consciousness, i.e., a life discourse of a particular individual. At the same time, the individualization of sense-making is not absolute; it cannot, strictly speaking, even be called convincingly dominant. "Sense horizons" as all possible limiting levels of the text content are potentially available to all native speakers, their mentality and value system. Due to this, one can comprehend and assimilate "alien" senses. In other words, an individual can "rediscover" them.

The sense making process is a transcendental process staying beyond the sense horizon of the text. It is characteristic of prophets, geniuses or insane people. For others text understanding is interaction of minds through the text. According to psychologists, sense (personal sense), is the phenomenology of a person's individuality. Applying to the whole life (life sense) or to its individual sides, senses correlate with the ultimate purposes of existence. And it is connected with the following. Just as thinking works with different logics (formal, dialectical, probabilistic, abductive, symbolic, etc.), so comprehension uses different techniques as "the third part in communication". "Each dialogue takes place, as it were, against the background of a reciprocal understanding of an invisibly present third person, standing above all participants in the dialogue (partners)" (Bakhtin, 1979: 306). Thus, in relation to the content sense is a meta-level description of the text. This meta-level belongs to comprehension.

In this case, text can be considered as an object, as a subject and as an instrument. Understanding the author's intent (interpretation), textual meaning (making sense of what you have read) and ways of putting it into a different context (interpretation) involve different techniques

for working with textual content. "On the one hand, it can be difficult to reveal an author's intention in the text and, moreover, it is often irrelevant to the interpretation of the text. On the other hand, there is an intention of the exponent who simply "hits the shape of the text which will serve his own purpose" (in the words of Richard Rorty). A third possibility occurs between those two intentions – the intention of the text" (Eco, 1990). Detecting this "intention" means to discover, to understand the sense of the text itself. To discover this "intention" means to reveal, to understand the sense of the text itself – the ultimate goal of the creation and existence of the text, which is not always clear even to its author. Actually, only then can we talk about the author's or the reader's semantic shifts in the understanding of the text.

The sense of the text as a subject of communication is the zero-reference point in the genesis of sense. Text is an imperative as well as the author's voluntaristic project (and the proving ground for the reader's semantic exercises).

Materials and Methods

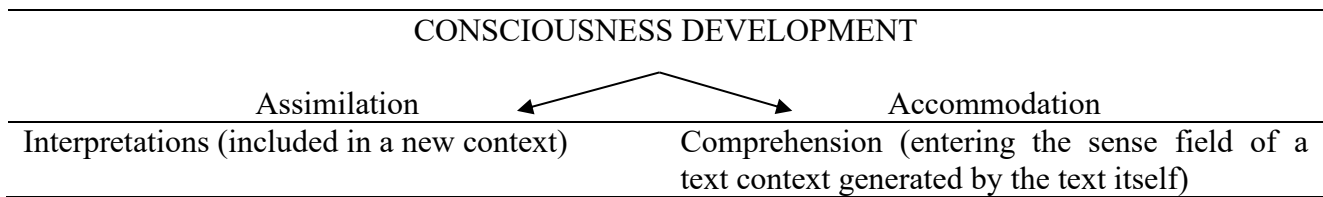
Jean Piaget substantiated such dialecticism arguing about the ways the two complex systems can be balanced with each other. The necessity to comprehend and to integrate new experience leads to restructuring of the internal picture of the world. The pairing of the new with the already established occurs through two opposite, but dialectically related processes: assimilation and accommodation (Piaget, 1954: 352-354). According to J. Piaget, the expansion and complication of connections with the outside world is carried out in a universal way, the same for both biological functioning and the consciousness development.

Referring to a procedure of comprehension of the text we can notice that

there are two similar strategies for extracting sense from the text and using the text. Text can be assimilated (included in a new context) as well as accommodated (put into the sense field or a context given by the text itself). In fact, it is referred to appropriation (using "alien" senses) and assimilation (transformation of the original according to internal phenomenology).

Assimilation always involves a constructive effort, and construction is organization. It is the "tightening up" of an event to the pattern of structure available to the individual at the moment. Assimilation involves constructing, and construction is an organization. It means "pulling" events to the pattern of the structure available to an individual ~~has~~ at the moment. As Jean Piaget asserted, assimilation by nature is a conservative process. The main function of this process is to transform the unfamiliar into the familiar, to reduce the new to the old. The result of assimilating processes is the complication and addition of the existing system without changing its essential, constitutive characteristics. This ensures a progressive but smooth nature of the capacity increase, i.e., intellectual development (which was researched by J. Piaget).

Accommodation understood by Jean Piaget as an active creative adaptation to the environment requires internal restructuring. The intellectual adaptation to reality means the construction of this reality. Moreover it should be constructed in terms of some fixed structure available to the subject. Every cognitive action includes both processes. Predominance of one component does not cancel an alternative way of processing new experience. "Cognitive exploration of reality always includes both – assimilation produced by the structure and accommodation of this structure" (Nikitina, 2019: 63).

Figure. Two strategies for extracting meaning from text

It should be noted that the above-mentioned study of two processes of constructing mental experience has something in common with other concepts. Hermeneutic methodologist D. Hirsch considered the art of interpretation and the art of understanding as two different processes. There can be many interpretations but the correct understanding is only one due to the fact that interpretations are based on the interpreter's terminology and understanding is based on text terminology (Hirsch, 1973).

Alfred Schutz, the representative of the phenomenological philosophical school of H. Husserl, described two types of individual interpretations of new information. He differentiated specific spheres of human experience. Along with everyday life, these are religion, sleep, play, scientific theorization, art work, the world of mental illness, etc. The list (which the author left open) can be also supplemented with such spheres of experience as magic, politics, parascience. Schutz defined these spheres as finite provinces of meaning, rather independent mental representations of specific experience. Direct interaction between these provinces of meanings (the exchange of meanings) is impossible. The meanings of one province are inapplicable for constructing explanatory schemes within the framework of another province. The same facts can act like "signs", phenomena indicators present in this sphere of reality as well as representatives of other reality – symbols which are not included in the given sphere of experience (Schutz, 1962: 312).

The connection of signs with the signified within a single province of meanings is quite definite. At the same time, symbols representing quasi-reality can reflect multiple

and rather arbitrary connections with other spheres of reality. According to Schutz's logics, we can say that texts can be interpreted as a sign at the first stage of text interpretation. Due to this, texts are identified with a definite sphere of meanings, they are "normalized" (typified), correlated with phenomenology and logics of this sphere. This initial step does not exhaust the possibilities of interpretation. The facts may not fully fit into the explanatory scheme dictated by the logic of a given range of values. For example, they can excessively "stick out" acquiring an inappropriately massive meaning ("Once upon a time there lived a king. And there was a flea with him..."). Or it is impossible to "normalize" them, i.e. explain them exhaustively. Then the process of interpretation moves further to assessing the phenomenon as an indicator of another reality (different system of meanings).

Schutz believed that symbols are communicative means between the realities of the spheres. Thereby, we can try to establish communication with the other sphere of reality. This is the act of metacommunication. "Thus, we can presumably talk about the existence of two types of interpretation – accommodating (detached sphere of experience) and semiotic-assimilating (establishing the interaction between spheres of culture). The first interpretation is characterized by a tendency for unambiguity of the meaning and rejection of other interpretations (references to transcendental spheres). The second one is an attempt at dialogical interactions between different provinces of meaning" (Nikitina, 2013).

Results and Discussion

The procedure of comprehension is triggered by questioning. In order to find

answers, we need to be able to ask questions correctly. Linguists get to the content through language, logicians – through concepts, psychologists – through images. But the comprehending person takes a special position between these specialists. He refocuses the sense proceeding from his “non-comprehending” position. After all, the problem of comprehending arises only when it becomes difficult to understand, when there is no understanding at all. The textual tradition where the cognizing subject has rooted, contains both the object of comprehension and its basis: one should understand what one is within from the outset. Unlike linguists, philologists, logicians, or psychologists, the understanding person faces problems of misunderstanding. Here is an example of misunderstanding and reinterpretation of the content of a text from a different cultural context.

“Never talk with teenagers about classical literature. Don’t do it. It can cause a mental trauma. I’ve already got one. Once being on vacation, I relaxed and lost my caution and decided to ask my junior gently about our great classical literature. It started off so lightly, but pretty trivial:

- And what is your favourite heroine in literature?

And he told me on the word, without hesitation:

- The old woman-pawnbroker from "Crime and Punishment".

Me, getting stunned a lot: “Why?!”

With dignity and deep conviction in voice a teenager said:

“You know, Mom, women, as a rule, were far from business in those old days. Moreover, they did not study mathematics and economics properly. This pawnbroker was a very advanced and progressive woman for her time! And mind you, she alimented her pregnant sister Elizabeth! She fended for herself and let others live their lives. And then, you know, some crazy man with an ax jumps out and bang!

One of the most deserving women of that time was killed, immediately excluded

from the plot. And so, it would be interesting to read in more details; why she chose such a job, how she did business ... It is much more interesting and useful than reading about the mental anguish of the murderer.

I didn’t ask anything else. I’m too fainthearted” (Nikolaeva, 2017).

M. Bakhtin noted that “in the field of culture, the extrinsic approach is the most powerful lever of understanding. A foreign (alien) culture reveals itself more fully and deeper only in the eyes of another culture (but not in its entirety, because other cultures will come and see and understand even more). One sense reveals its depths meeting and coming into contact with another, alien sense: a kind of dialogue starts between them, which overcomes the isolation and unilateralism of these meanings, these cultures” (Bakhtin, 1979: 334-335). We pose new questions to a foreign culture which it did not pose to itself. We are looking for an answer to this query and a foreign culture responds, revealing its new sides, new semantic depths to us. It’s impossible to understand in a creative way something different and foreign without posing your own (inside) questions (but, of course, these should be serious, original questions). When such a dialogical interaction of two cultures occurs, they do not merge or mix, each retains its unity and open integrity, but they are mutually enriched” (Bakhtin, 1979: 334-335).

The subjective attitude towards the text implies accommodation as an initial step in communication – moving to the position of the text. The attitude towards the text as an object of understanding leads to interpretive techniques, as the text itself becomes merely an element of the receiving context or frame. The subjective attitude to the text presupposes accommodation as a primary level in communication, i.e. transition to the positions of the text. Since the text becomes just an element of the receiving context or frame, the attitude to the text as an object of understanding leads to interpretative techniques. **In the first case**, the text acts as a subject with gained authority which focuses

on understanding. The emphasis therefore is on understanding. Three levels of sense have already been prepared by semiotic organization of the text itself. *In the second case*, the text leaves its usual habitat. And if it comes to the other habitat where this text can also be reinterpreted according to the logical rules of the receiving sphere, the destiny of “Kolobok” awaits it (Kolobok is a Russian fairy tale the plot of which is very simple. Kolobok is a piece of bread whom every animal (met by Kolobok) threatens to eat). One logic absorbs the other through normalising the situation and bringing it under its own, familiar logic. The bread (Kolobok), even if it talks, must be eaten. As an example of reinterpretation involving different contexts, let’s refer to “Kolobok” itself.

The tale is based on the idea that boasting is not good. The story tells that every cunning one can be tricked out by the more cunning one. Literal explanation is determined by the plot of the fairy tale. We can find this plot in different variations in the folklore with common linguistic and cultural roots (Indo-European). Like any fairy tale, “Kolobok” has considerable potential in the “crystallization” of various meanings immanent in this cultural tradition. As A. S. Pushkin wrote: “Fairy-tales, though far from true, teach good lads a thing or two!” Of the many interpretations of the sense of the tale, here are just two that are indicative of the contexts in which the understanding unfolds.

The first one is archetypal. The archetype of the Hero contains a strict definition of his mission: “The Path of the Hero” full of vicissitudes and trials, leading to victory and gaining a reward. Animal images personify human qualities in metaphorical world. The connotative meaning of these images is presented in the fantasy discourse as follows: a hare means cowardice and lack of integrity; a wolf means cruelty, a bear is a dull force, a fox is cunning and deceit. In this system of semantic reference points “Kolobok” is a metaphorically stated life story of the “last-born child” in a family.

There are no prospects in the decayed, decrepit home for him. After all adventures, disappointments and other experiences the protagonist found a new belonging. He was absorbed and integrated by a stronger family line (He simply got married and moved to his wife’s family). Recalling the Genep’s initiation scheme (Genep, 2002) its main ritual stages totally correspond to the above-described evolution of Kolobok: separation from the previous community – “non-existence”, symbolic death. And as a result, entering a new community and “rebirth” in a new role, gaining a new status.

Tales about the youngest son reflect the universal principle of hierarchy in a quite developed society. The one who joined the system later than others has less rights. This truth of life is accentuated in fairy tales. We can follow the path of youngest son whose birth was unexpected, “unplanned” (everyone needed is already there). There is no share in common resource for him. Or there can be a scanty, ridiculous part of property like an old cat and worn-out boots. There is no rightful place for the junior in his surrounding, everything is already taken. This theme of deprivation of the younger sounds even harsher in Russian fairy tales. “The elder was a smart fellow. The middle one was neither fish nor flesh. The youngest one was a fool at all”. There is nothing to count on for the youngest in his family. Thus, he is a fool. Further, the path of this completely unheroic “Hero” certainly presupposes finding an external source of strength (the “last-born” is always weak). And this leads to a natural ending – joining a powerful family (“and married to the king’s daughter”). If the way to become a knight is closed, there is always an opportunity to become a usurer (Slabinskii, 2012).

The second interpretation of the tale is sacral (reference to religious province of meanings; in this case – a context of Slavs’ pagan religious beliefs).

All characters here are considered as symbols representing the sacred reality in the tale’s content initially identified as an

“everyday” one. The Slavic myth about the creation of a man says that life appeared as a result of energy merging of Kin (creative, “created” inception) and Mother Earth. Recognizable as figures familiar to everyone from the sphere of everyday reality (elderly spouses), the characters of the beginning of the tale can also be considered (at the next level of interpretation) as symbols – metaphorical images of the Kin and Mother Earth (very old – a metaphorical indication of the eternal). The further development of the plot also corresponds to the sacred scheme: the Old Man (Kin) initiates the appearance of Kolobok (he puts the energy into “starting” the process of creation and asks to bake Kolobok). The Kin has the energy but he does not have any resources or materials. And Mother Earth has this resource and owns all the fruits (parts) of her own. The process of searching for a sufficient number of products (flour as ground grain) begins with collecting the flour remnants in “barns and hoppers” for mixing the dough and (“to bungle” according to the expression of the ancient Slavs), i.e. to please the Sky (God). It means to give not only a body but also a soul. According to beliefs of ancient Slavs the soul is manifested through a given name. “Kolo” means a circle, a circle of life, a symbol of eternity of soul (symbol within a symbol is a frequent example of metacommunication in sense-making process). Ancient Slavic mythological symbolism can be traced in this fairy tale which builds the semantic bridges to other, related mythological constructions. In particular, to the myth of mysterious, incomprehensible Russian (Slavic) soul. In this sense, a “children’s” fairy tale appears in its traditional moral didactic role: a hint is a lesson. To protect oneself and to adapt skillfully are out of the Slavs’ moral virtues. The same refers to greed, and cruelty, and desire to be “the great one” (power and mightiness). Therefore, the characters personifying the above-said – the Hare, the Wolf and the Bear – did not become a serious obstacle on Kolobok’s way. But meeting the Fox turned out to be fatal.

The openness and trustfulness (“simplicity of the soul”) inherent in the “Slavic soul” are defenseless against cunning and guile. Russian history has confirmed this fact many times. Wise ancestors’ message is to learn to recognize treachery and lies, but not to go to the other extreme of suspecting everyone everywhere. This gave rise to an aura of mystery of the Slavic soul – often a “meaningless and merciless” total protest against everything and everyone. Searching for the balance between reckless trust and total denial is a message left by Slavic ancestors to their descendants’ generations.

Concluding a short excursion into the semantic potential of fairy tales, let us ask ourselves a question. Why a fairy tale “for the little ones” contains such a global and significant meaning (in fact, the secret of nation’s viability). Children do not yet have sufficient social experience, logical maturity of consciousness. But child’s consciousness has its own considerable capabilities which are mainly lost while saving up life experience. Information presented in a figurative form accessible to the child’s psyche is assimilated without any cognitive distortions and subjective “modifications”. And it is fixed there as the basis of knowledge about life. We remember: what comes first does always have more influence and rights. And this proper knowledge about life is activated in critical (extremely critical) situations. And there are plenty of such cases in the history of the country. Though, the path from the truths, hidden in the most archaic layers of consciousness, to the particularity of conscious decisions is unobvious and tortuous, it certainly exists and it is actualized at the moment of a fateful choice.

Interpretation of senses cannot be attributed to a strictly scientific procedure. Sergei Averintsev asserted that there are two levels clearly distinguished within the analysis of a text: the description of the text and the interpretation of different layers of its symbolism. Basically, description should tend to consistent “formalization” as in exact sciences. On the contrary, the symbolic

interpretation is precisely the element of humanity within humanities in the direct sense. In other words, it is a question about the humanity, which is not materialized but symbolically realized in material. It is a firmly “extrascientific form of knowledge that has its own internal rules and criteria of accuracy” (Averintsev, 2001: 157-158).

There is a third possible variant of interpretations. This is a variant of intercommunication of two logics (or more) from two spheres of culture. It is the case of the dialogue of two different senses tending to merge into a third, additional logic. The metalogic of interpretations which can be specified as dialogics. This field is still marginal but creative.

Conclusion

There are two similar strategies for extracting sense from the text and using the text.

The first task of understanding is penetration, accommodation to the text, comprehension and evaluation of what is closer to the present moment. The second task is to be included in a context foreign to the author using temporal or cultural *outsideness* as human experience acquires sense only when it is included in a certain tradition. Cognition begins with a premise. This premise is a result of “normalizability” of the text to a certain province of meanings (typological identification of the text) and with the “standard” traditional interpretation by default pre-reason – “*vorurteil*” (Gadamer, 1999). The reduction of the stage of preliminary “template” understanding and the avoidance of understanding in a particular way deprive the understanding process of the most important orienting “tuning” link. This action leads to problematic cognition (misunderstanding). Interpretation of the text is one of the forms of existence of knowledge: dialogical. The sense of a text does really exist only within the exchange of axiological worlds, within situation of a dialogue.

Dialogue turns out to be impossible where the speech of participant is added to familiar and fixed set of senses. Or when one

of the participants of a dialogue tries to fully perceive the way of comprehending suggested by the interlocutor. It becomes possible only with complete rejection of the sense-making references inherent in one’s own sociocultural tradition (which is unreachable as long as a person’s consciousness is functioning). Partial, local admission of alternative, primarily foreign, senses to one’s own semantic system allows one to create a basis for understanding (the applicability of new senses in one’s own world cognition).

Such a transcendence of sense logics always presupposes the unity of multidirectional procedures. On the one hand, it reveals the unexpected, strange in comparison, different from traditional schemes of comprehension and ratings one. On the other hand, it brings the unknown, the unusual into compliance with the familiar, the well-known. Therefore, understanding as a dialogical form is always revealed in collision and further interaction of “the new” and “the familiar”. The result of such a collision is the inevitable restructuring of existing ideas, the removal of a subject of comprehension from the familiar context of comprehension, the transformation of sense. This is the aspect of sense-making process which V. B. Shklovsky (1925) successfully called “defamiliarisation”. As a secondary process every comprehension is basically unfolding as rethinking, creating a new semantic chain of “detached” senses.

In dialogical movement the initial point of comprehension is a given text that requires understanding as communicative subject. It is a movement to the past contexts, when we need to understand the text according to the author’s conception not going beyond the limits of his idea. The solution of this hermeneutic task is rather difficult and requires the involvement of a huge amount of material. And finally, it presupposes the movement into the future – forestalling, construction of further contexts. Without such comprehension activity the senses “compress themselves” transforming into the knowledge and stop dividing (changing). Every author is a prisoner of his epoch, of his

contemporaneity. Future times release him from this captivity. And literary studies are meant to help this liberation. Hence there is the need for the skills of not only in comprehension, but also in interpretation of texts. Moving from comprehension to interpretation of the text, we leave the text in its semantic uniqueness and shift into the communicative space of semantic transformations.

The text, as an instrument of influence, as a subject of quotation, imitation, etc., becomes a part of innumerable semantic divisions. A comprehending individual can enter a reflective stance in his comprehension through the gap between the content and the sense of the text. Self-perception guides a person to study the procedures of comprehending. The ability to separate, construct, change contexts of semantic analysis of the text is the topic of future interventions in the field of sense.

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Конфликты интересов: у автора нет конфликта интересов для декларации.

Conflicts of Interest: the author has no conflict of interest to declare.

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UDC 811.111:81'373.72

DOI: 10.18413/2313-8912-2022-8-4-0-4

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**Terminology vs phraseology:
meaning transfer in business terms**

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Received 02 March 2022; accepted 12 December 2022; published 30 December 2022

Abstract. The research is aimed at the study of Business English terminology of phraseological character, i.e. at the study of Business English terms based on a kind of meaning transfer thus acquiring a kind of phraseological meaning. As a result of the PU-terms semantics examination, coupled with private-paradigmatic methods for analysing their dictionary definitions and contextual usages recorded in the BNC and COCA, I found out the quantitative correlation of Business English PU-terms with a full meaning transfer and those with a partial meaning transfer. Among the latter, I identified two subtypes of the incomplete semantic transfer of the PU-term component composition and assign the following terms to them: an evident partial shift of meaning and a non-evident partial shift of meaning in the components. Another result of the study, presented in the text of the paper in the form of a bar graph, is the clarification of the nomenclature of the most active business English domains that operate with business PU-terms. Extensive linguistic material of the study, the proven method of phraseological identification introduced by A. V. Kunin, and reliable methods of phraseological analysis and phraseological description have made it possible to obtain essential results. Conclusion: the work proves the progress of the recent English terminology according to the phraseological scenario and provides language material for the typological study of the PU-terminology.

Keywords: Terminology; Phraseology; PU-terms; Component; Phraseological Identification; Meaning transfer

How to cite: Fedulenkova, T. N. (2022). Terminology vs phraseology: meaning transfer in business terms, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 41-56. DOI: 10.18413/2313-8912-2022-8-4-0-4

УДК 811.111:81'373.72

DOI: 10.18413/2313-8912-2022-8-4-0-4

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**Терминология vs фразеология: перенос значения
в бизнес-терминах**

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Статья поступила 02 марта 2022 г.; принята 12 декабря 2022 г.;
опубликована 30 декабря 2022 г.

Аннотация. Исследование направлено на изучение терминологии делового английского языка фразеологического характера, т.е. на изучение таких терминов делового английского, образование которых основано на переносе значения компонентов с параллельным приобретением термином определенного фразеологического значения. В результате исследования семантики ФЕ-терминов в сочетании с частно-парадигматическими методами анализа их словарных определений и контекстуальных употреблений, зафиксированных в корпусах BNC и COCA, выявлено количественное соотношение ФЕ-терминов делового английского языка с полным переносом значения и с частичным переносом значения. Среди последних я выделяю два подвида неполного переноса значения компонентного состава ФЕ-терминов и присваиваю им следующие термины: *явный частичный сдвиг значения* и *неявный частичный сдвиг значения* в компонентах. Еще одним результатом исследования, представленным в тексте статьи в виде гистограммы, является уточнение номенклатуры наиболее активных доменов делового английского языка, оперирующих деловыми ФЕ-терминами. Обширный языковой материал исследования, апробированный метод фразеологической идентификации, введенный А. В. Куниным, надежные методы фразеологического анализа и фразеологического описания позволили получить существенные результаты. Вывод: работа доказывает развитие новейшей английской терминологии по фразеологическому сценарию и дает языковой материал для типологического изучения ФЕ-терминологии.

Ключевые слова: Терминология; Фразеология; ФЕ-термины; Компонент; Фразеологическая идентификация; Перенос значения

Информация для цитирования: Федуленкова Т. Н. Терминология vs фразеология: перенос значения в бизнес-терминах // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 41-56. DOI: 10.18413/2313-8912-2022-8-4-0-4

Introduction

A. The scientific background of the research

The object of the research is business English terminology of different domains (Fedulenkova, 2015) as it is given in the entries of *LONGMAN Business English Dictionary* edited by Michael Murthy in the second decade of the new Millenium¹ and a set of other modern issues.

The subject of the research is (a) to find out the PU-terms that appeared due to full transfer of component meaning, (b) to find out the PU-terms that appeared due to partial transfer of component meaning and (c)

to fix the percentage interrelationship between both the groups of terminology of phraseological nature

The associated objectives of the study are as follows:

1) to find out the quantitative correlation of Business English PU-terms with a full meaning transfer and those with a partial meaning transfer; 2) among the latter, to identify two subtypes of the incomplete semantic transfer of the PU-term component composition and assign the corresponding terms to them; 3) to present the result of the study in the form of a bar graph, as the clarification of the nomenclature of the most active business English domains that operate with business PU-terms.

¹ Murthy, *LONGMAN*.

To achieve the research target a number of innovative ideas in the sphere of phraseological and terminological theories and methods were employed in the process, namely: Alexander V. Kunin's method of phraseological identification (Kunin, 1996: 38-43), Vladimir M. Leichik's terminological theory (Leichik, 2009: 143) and Anthony Paul Cowie's ideas on contextual phraseological studies (Cowie, 1998: 210; 2000). The idea of the corpus compilation method was partly borrowed from Attapol Khamkhien and Sue Wharton (2020: 16–17) as well as some other new methods in phraseological studies were referred to (Simpson-Vlach & Ellis, 2010: 487).

The study is also motivated by urgent pragmatic needs for preparing business vocabulary for the ESP classroom (Tangpijaikul, 2014; Fedulenkova, 2021b), taking into consideration the so-called 'holistic' nature of 'formulaic language' (Schmitt, 2004; Siyanova-Chanturina, 2015; Wood, 2015; Peters & Pauwels, 2015) and the academic requirements in developing Business English competences (Ayto, 1999: 3-10; Murthy, 2007: 6-9) alongside with the study of key concepts in information and communication technology (Cartwright, 2005; Tuck, 2000), with the view of their patterning and pragmatic functions (Fedulenkova, 2016; 2019a).

Besides the study (as well as a number of other works published) is motivated by the practical needs of compiling a manual for undergraduates on Business English Phraseology.

The novelty of the research consists primarily in the following:

a) the interrelation of Business English terminology, on the one hand, and English phraseology, on the other hand, has not been studied yet,

b) the status of business terminological set expression as referred to phraseology has not been defined yet,

c) no subtypes of the incomplete semantic transfer of the PU-term component composition have been found out and no

corresponding terms have been assigned to them.

The study of terms of a phraseological nature is **relevant**, because a significant part of the new terms in the field of business language is formed according to the phraseological model of transfer the semantics of a prototypical word-combination. That problem is tackled in the paper with the view of V. D. Arakin's explanation of the cause in the typological change of English (see below).

B. The cause of idiomatisation in terminology

It is not a rare occasion to encounter some arguments against idioms in modern English, with their authors insisting on that idioms, as well as phraseological units of other kinds, are some bizarre language units and are undoubtedly out of use because of their deeply archaic nature and obsolete character.

The value of those arguments seems to be rather problematic. The proof of that is in the fact that modern English mainly develops due to such mechanism of nomination as a metaphor (Lakoff & Johnson, 2003). A mere scanning of John Ayto's dictionary *Twentieth Century Words* reveals the fact that nearly half the volume contains entries dealing with new words and set expressions that have appeared in English for the last hundred years through some transfer of meaning based on metaphor, metonymy, hyperbole, litotes, and the like, especially in two-component set expressions (Fedulenkova, 2021a: 114).

All of those new items of metaphorical/idiomatic nomination are characterized by high frequency in business discourse (see also: (Stubbs, 2007: 89)). One can easily see it on having scanned the BNC tables at random which reveals the fact that, for instance, the PU-term *shadow cabinet* is supplied by 196 contexts, the PU-term *black market* is supplied by 157 contexts, the PU-term *Big Bang* is supplied by 355 contexts; and, to prove their professional power in

business communication, here there are some of them²:

(a) This is certainly true of the subject groups. When the Conservatives are in opposition, the frontbench spokesman on each subject area is also chairman of the parallel party group, thus providing a direct channel of communication between backbench opinion and the *Shadow Cabinet*. Naturally, when Conservatives are in office, the opportunities for meetings between backbenchers and party leaders are more restricted. They also vary greatly depending upon the attitudes adopted by individual ministers.

(b) If firms believe devaluation is likely in the near future, they typically defer investment until after the event, to avoid writing down the asset value. A prime indicator of future trends in many countries that attempt to manage the rates is the black market rate. For example, unlike Brazil, Myanmar insists that all multinationals' currency dealings are at the official rate. With the *black market* standing at roughly one-tenth of the official rate in mid-1990, many investors who might otherwise have wanted to invest were holding back, betting that the official rate could not indefinitely be propped up. The second factor is how the government intervenes to affect the exchange rate. Kenya's practices illustrate the problem.

(c) With the growth of financial conglomerates, in particular the merging together of banking and securities business, problems have inevitably arisen. As stated in chapter one, these problems revolve around the safety and soundness of the financial system and, more importantly for our purposes, conflicts of interest and duty. Conflicts of both interest and duty are not new to the City of London; indeed, they have traditionally been of great concern to financial market regulators. What has happened,

however, is this that the advent of *Big Bang*, and the consequent emergence of one stop financial conglomerates, has exacerbated the problem of conflicts of interest and duty and placed added burdens on the ability of legislation (albeit newly designed) to cope with potential abuses. A conflict of interest occurs where, for example, a market operator's interest potentially conflicts with that of a client (conflict of interest), or where a market operator owes obligations to two or more clients who's interests might well pull in different directions (conflict of duty).

"Highly technical discourses, – as Chitra Fernando puts it, – whether written or spoken, such as those belonging to the registers of mathematics or physics or symbolic logic may seem to be candidates for neutrality, but even these typically argue a thesis to prove or disprove a theory and therefore embody evaluation" (Fernando, 1996: 138). Maintaining the author's idea one might agree to her statement that "appraisals in this type of discourse may emerge more strongly at the global text level" (Fernando, 1996: 139). Though, it is not the emotion only that urges idiomaticity. It is development of a matter-of-fact language, especially in the field of business, finance and economics, that demands thorough penetration into the issue (Tangpijaikul, 2014).

The flourishing effect of metaphoric mechanism in the process of nomination might be elucidated by the lack of morphological means for the purpose of naming new things and phenomena that naturally and constantly appear in the extra-linguistic world. Interestingly, that lack happened because of the drop of the third suffix, or stem suffix, in the pre-historic time of Old English – that fact was already obvious in the Gothic manuscripts – which caused the change of the English language type from a synthetic to analytical one, as it was brilliantly proved by Vladimir D. Arakin in his monograph on comparative typology (Arakin, [1979] 2005). Incidentally, the fact was totally missed by European scholars (Stockwell & Minkova, 2002) who managed

² BNC = *British National Corpus*, available at: <http://www.natcorp.ox.ac.uk/> (Accessed 15 December 2021). (Hereinafter, the spelling and punctuation of the cited source are preserved. – T.F.)

to only register the sequence of changes in the language vowels but unluckily failed to notice its typological effect and to supply any arguments for that (Blake, 2005; Fennel, 2004). To say nothing of the specialists in phraseology who, having paid much effort to various mechanisms of semantic transfer giving birth to phraseological units, managed to ignore the basic cause in the English language evolution (Moon, 1998; Cserép, 2008; Ziem & Flick, 2018), though some of them penetrated deeply into the origin of the term 'phraseology' (Autelli, 2021), took much effort to draw linguists' attention to PU stylistic and contextual use (Naciscione, 2010; Cowie et al, 2000) and even touched upon the cognitive aspect of the phraseological processes in nomination (Erman, 2007). Unluckily, none of the paternal researches has ever paid attention to the problem (Ponomarenko, 2007; Pashchenko, 2018).

In the meantime, due to globalization, and to the efforts of the researches and lexicographers to meet the requirements of business in new terms and their pragmatic adequacy, quite a succession of special dictionaries appeared embracing business terminology. Primarily, the researcher's penetrating eye is to be drawn to such reliable defining dictionaries as a dictionary containing 4100 entries by Brian Butler et al.³, Allene Tuck's dictionary of Business English with over 5000 entries⁴, *The New Penguin Business Dictionary* edited by Graham Bannock et al.⁵, *LONGMAN Business English Dictionary* with 30000 up-to-date

business terms edited by Michael Murthy⁶, Jonathan Law's edition with over 5100 entries⁷, *The Penguin Dictionary of Marketing* including approximately 2000 entries and edited by Phil Harris⁸, John Pallister & Allan Isaacs's reliable edition including 7000 entries⁹.

Each of those dictionaries presents an abundance of new and unique terms of idiomatic nature that have started their life in the world of business, management and finance, and here there are only a few samples: time bargain, wash sale (Butler), chain store, kite mark (Tuck), marginal utility, sleeping partner (Bannock), kanban system, quality circle (Murthy), repackaged security, salvage value (Law), Wilcoxon test, zero-sum game (Harris), kamikaze pricing, marketing myopia (Pallister & Isaacs) and many others, shocking an unsophisticated mind with their fresh metaphors.

C. Discourse activity of idiomatic terminology

The intensive use of idioms in the sphere of terminology is quite evident now, and the evidence is especially eloquent – during the last few decades – in the field of business terminology where a great many business terms appear by means of a kind of semantic transfer in their prototypical word-combinations (Fedulenkova, 2019b; 2021b).

For instance the business term **golden handshake** first fixed in 1960 is used as a term in the sphere of human resources in the meaning having to do neither with a handshake, nor with the metal mentioned, and defined as 'a gratuity given as compensation for dismissal or compulsory retirement' and followed by the illustration: "1960 *Economist*: There is little public sympathy for the tycoon

³ Butler, B., Butler, D. and Isaacs, A. (1997). *A Dictionary of Business and Finance (from international to personal finance)*, Oxford University Press, Oxford, UK.

⁴ Tuck, A. (2000). *Oxford Dictionary of Business English (for learners of English)*, Oxford University Press, Oxford, UK.

⁵ Bannock, Gr., Davis, E., Trott, P. and Uncles, M. (2002). *The New Penguin Business Dictionary*, Penguin Books Ltd, London, UK.

⁶ Murthy, M. (2007). *LONGMAN Business English Dictionary*, Pearson Education Limited, Edinburgh, Harlow, UK.

⁷ Law, J. (2008). *Oxford Dictionary of Finance and Banking*, Oxford University Press, Oxford, UK.

⁸ Harris, Ph. (2009). *The Penguin Dictionary of Marketing*, Penguin Books Ltd, London, UK.

⁹ Pallister, J. and Isaacs, A. (2009). *Oxford Dictionary of Business and Management*. Oxford University Press, Oxford, UK.

who retires with a golden handshake to the hobby farm”¹⁰. A bit more detailed definition of the PU-term meaning is found in LBED that reads as follows:

golden handshake – ‘a payment made by a company to a director, senior executive, or consultant who is forced to retire before the expiry of a service contract, as a result of a merger, takeover, or any other reason; <...> this form of severance pay may be additional to a retirement pension or in place of it; it must also be shown separately in the company’s accounts, because these payments can be very large <...>’¹¹.

The intensity of the term use is illustrated by the three out of the total 24 BNC contexts, e.g.¹²:

(a) Over years, the courts have adopted varying approaches. One possibility is to ignore the part of the award of damages which exceeds the amount exempt from tax under the ‘**golden handshake**’ rules, for instance by expressing the exempt amount <...>.

(b) <...> taking into account that he would have paid income tax on earnings, then adding back ‘**golden handshake**’ tax so that he would be left with the net amount after the Revenue had collected tax on the damages.

(c) Sir Nicholas stressed that the **golden handshake** was not ‘hush money’, adding that the resignation had been mutually agreed following restructuring talks. The payment resulted from the fact that his three-year contract had some time to run.

Evidently, the spheres of use of the term **golden handshake** concern advice (a) on how to get the best deal from your employer, (b) on how to avoid extra income taxes, (c) on how to behave in order not to become a victim of criminal prosecution under the circumstances, i.e. advice on most urgent issues of the day in business routine life.

Besides, inspired by ‘golden handshake’, a number of terms gathering under the same ‘golden’ umbrella did not hesitate to enter business communication later on, namely: in 1976 – **golden handcuffs**, in 1981 – **golden parachute** and in 1983 – **golden hello**. Let us have a closer view of their semantic value:

(a) **golden handcuffs** is defined as ‘benefits (e.g. a private health scheme or a company car) provided to employees in order to induce them to remain in their jobs and not move to another company’ and illustrated as “1982 *Wall Street Journal*: Getty Oil is trying to lock ‘golden handcuffs’ on explorationists by offering them four-year loans ‘up front’ equal to 80% of an employee’s salary”¹³;

(b) **golden parachute** is defined as ‘a long term contractual agreement guaranteeing financial security to senior executives dismissed as a result of their company being taken over or merged with another’ and illustrated as “1990 *New York Times Book Review*: It was not long before most of the RJR Nabisco’s top executives ‘pulled the rip cords on their golden parachutes’... Mr Johnson’s alone was worth \$53 million”¹⁴;

(c) **golden hello** is defined as ‘a substantial sum offered to a senior executive, etc., as an inducement to change employers, and paid in advance when the new post is accepted <...>’¹⁵.

The broad use of those PU-terms may be illustrated by the numerous BNC contexts, e.g., as follows:

(a) The announcement only fuelled speculation that he is earmarked for greater things in the Shandwick organisation, <...>, or even that he was preparing the way for something completely different when his five-year **golden handcuffs** are released next year.

(b) Many of us suspected that it was John’s mismanagement of the organization that had gotten the company into trouble and

¹⁰ Ayto, *Twentieth*, 410.

¹¹ Law, J. (2006). *A Dictionary of Business and Management*. Oxford University Press, Oxford, UK, 246.

¹² BNC.

¹³ Ayto, 477.

¹⁴ Ibid, 542.

¹⁵ Ibid.

caused us to have to lay off so many of our co-workers. The grand finale, however, came later that afternoon when the evening paper reported John's resignation, as well as the payment of a \$ 4 million *golden parachute*.

(c) This amount includes fees, taxable expense allowances, pension contributions, benefits in kind and amounts paid to obtain the services of a director ("*golden hello*"). Analyse the amount between payments: for services as director of the company, <...>. ¹⁶

As far as one can gather, all the three terms under discussion deal with a good sum of money paid to a wanted employee before or after his work with the view of making use of one's talent and creative activities in the field.

The contexts illustrating newly formed terminology of phraseological nature reveal that new business and corporative needs have led to new social relationships that are not at all welcome by fair competition as it is exposed in the following statements:

(a) The concern for the people for whom you are responsible by being given a position of influence and power and authority has gone. *The Golden Handshake, the Golden Hello and Big Bang* and *the whizz kids* have changed all that.

(b) *The Big Bang* has certainly encouraged the trend towards offering *Golden Handcuffs* – to maintain *the Golden Hellos* – and the insertion of exclusion clauses in contracts to prevent executives going over to the competition. ¹⁷

Main part

Discussion of the research result

While undertaking research in the field of Business English terminology I focus my analysis on those terms that are characterized by a two-component structure. And here the attention of the researcher is drawn to the fact that a great many terms are characterized by a semantic transfer, i.e. the total component meaning of the prototypical word combination does not reveal the meaning of

the resulting term, which argues for the fact that the terms under study are undoubtedly idiomatic expressions and therefore they undoubtedly belong to the sphere of phraseology.

1. Full meaning transfer as basis for PU-terms

Semantic analysis of business terms having phraseological nature (we call them *PU-terms*) is employed to differentiate (a) those PU-terms the appearance of which as signs of nomination was caused by full transfer of word/ component meaning in the prototypical word-combination, and (b) those PU-terms the appearance of which was caused by partial transference of component meaning in the prototypical word-combination. In the course of the semantic analysis it is reasonable to rely, first of all, upon the definitions supplied by the dictionary entry and try to focus one's attention on the availability of any words in that very definition that co-inside in form and meaning with at least one component of the PU-term under discussion. In case no such coincidence is observed, the PU-term is thought to be a phraseological unit with full transference of meaning, i.e. while being able to realize the meaning of every PU-component one cannot guess the total meaning of the PU-term, e.g.:

(1) *black knight* FINANCE – 'a company that tries to take control of another company by offering to buy large numbers of its shares: *While not particularly welcome the black knight is considered more favourably than the hostile bidder*' ¹⁸, e.g.:

<...> An alternative offeror which the target company is prepared to recommend to its shareholders in preference to a hostile bidder. While not particularly welcome, *black knight* is considered the lesser of two evils <...> ¹⁹.

(2) *boiler room* FINANCE – 'an organization selling investments by telephone

¹⁶ BNC.

¹⁷ BNC.

¹⁸ Murthy, LONGMAN, 48.

¹⁹ BNC.

using unfair and sometimes dishonest methods'²⁰, e.g.:

It is a psychologically unrewarding task for the person soliciting over the telephone, and this is <indicated by> the vernacular term applied to the location from which such solicitation takes place – '*the boiler room*'. Insofar as the UK is concerned, very little of this activity takes place at end consumer levels, but its use has increased in industrial markets in support of sales, especially in relation to the following: # (i) # Initial contacts with potential customers with a view to a follow-up sales call. Such contacts can be obtained from trade directories, visitors to an exhibition stand, members of a particular group (e.g. professional body or attendees at a conference); # (ii) # Stock replenishment for established customers when an enquiry can be made about a re-ordering possibility <...>²¹.

(3) *business angel* FINANCE – 'a private investor who puts money into new business activities, especially ones based on advanced technical ideas: *In the UK, business angels are a more important source of investment for start-ups than venture capital funds*'²², e.g.:

As both company chairman and *business angel*, Sir John plays an active role. He and Ivan are equal partners. <...>. The fifty percent shareholding has worked well, because what it means no one person can impose their will, no one has control, you have to resolve problems by agreement, resolve disagreements without coming to blows. <...> Angels don't always work miracles...²³.

(4) *blue chip* – 'colloquial name for any of the ordinary shares in the most highly regarded companies traded on a stock market <...>. Blue-chip companies have a well-known name, a good growth record, and large assets; the main part of an institution's empty

portfolio will consist of blue chips <...>'²⁴, e.g.:

"HOARDING STACKS OF SHINY METAL IS NOT INVESTING!! Investing is something that takes time and consideration, and many years of painstaking research. Retail investors should only be investing in *blue chip* companies with proven records of success, and these investments should only be made under the guidance of a professional stock broker or financial advisor. Buying gold bullion is not only an esoteric and dangerous 'investment', but it also runs contrary to the opinion of some of the world's most respected accomplished investment professionals. # You are using the word 'investing' much like Krugman uses the word 'economics'. In theory, it works <...>.²⁵

(5) *dawn raid* STOCK EXCHANGE – 'a surprise attempt to buy a large number of shares in a company in the first minutes of a day's business in the stock exchange, before dealers can react by raising prices: *mount a dawn raid in the shares of an international company*'²⁶, e.g.:

<...> lecturing on the essential point of the 'up-date' key notion <...> a swift operation effected early in stock-market trading whereby a stockbroker obtains for his or her client a markedly increased shareholding in a company (often preparatory to a take-over) by clandestine buying from other substantial shareholders, as in *Bookseller*: Following his '*dawn raid*' last July, which gained him 29,4 per cent of BPC, Robert Maxwell <...> and clearly plans to secure and consolidate his control of the 'grasp' <...>.²⁷

Evidently, all the five terms under analysis are idioms because one does not see their meaning before reading their dictionary

²⁴ Law, *A Dictionary*, 63.

²⁵ COCA = *Corpus of Contemporary American English*, available at: <https://www.english-corpora.org/coca/> (Hereinafter, the spelling and punctuation of the cited source are preserved. – T.F.)

²⁶ Tuck, *Oxford*, 117.

²⁷ COCA.

²⁰ Murthy, *LONGMAN*, 51.

²¹ BNC.

²² Murthy, *LONGMAN*, 64.

²³ BNC.

definitions or the contexts the terminological expressions are used in.

2. Fully transferred PU-terms domains

Fully transferred PU-terms may belong to a variety of domains serving business communication, namely:

A. Accounting

current ratio ACCOUNTING – ‘the relation of the current assets of business to the current liabilities, expressed as $\chi:1$ and used as a test of liquidity’²⁸, e.g.:

In an essay published in the *New Statesman* in June, Amartya Sen, the Nobel Prize-winning economist, criticized the government’s austerity policy, saying it was unnecessary as the **current ratio** of public debt to GDP is much smaller than in the two decades after the Second World War, when it caused little panic.²⁹

B. Banking

discount window BANKING – ‘a method by which a central bank supplies a banking system with short-term funds, either by purchasing Treasury bills or by making secret loans’³⁰, e.g.:

The discount houses, facing the shortage which was created in the money market, were forced to borrow from the Bank of England’s **discount window** at Bank Rate. From the mid-1970s onwards greater reliance was placed on control of broad money and sales of gilts replaced the need for the government to finance its borrowing requirement through the issue of Treasury bills. Indeed, the money market shortages created by greater reliance on sales of gilts were initially relieved by buying back Treasury bills from the market.³¹

C. Finance

triple witching also **triple-witching hour informal** FINANCE – ‘a time on a financial market when futures, stock index futures, and stock options all expire (=reach

the end of their life) at the same time: *Friday’s triple-witching hour will see three sets of options and futures contracts expire on the German Futures and Options Exchange*’³², e.g.:

<...> Falling interest rates and cheaper share prices brought investors back to the stock market. Steve Young reports from New York, <...> CNN Business News: <...> voice-over *The night before Christmas*, what should appear but an advance so broad it embraced most industries. Analysts said investors cautious Friday because of **triple witching** options expirations, came back with a vengeance. JACK SOLOMON, Chief Technical Analyst, Bear Stearns: Right now was the most abrupt drop in interest rates that we’ve seen in about two decades or more. Bonds have gone sky high, and in bonds going sky high, it makes the yield on stocks competitively more attractive.³³

D. Human resources

mission creep HUMAN RESOURCES – ‘a series of gradual changes in the aim of the people who manage a company or organization, with the result that they do something different from what they planned to do at the beginning: *The penalty clause in the contract leaves no room for mission creep*’³⁴, e.g.:

The solution is to defund the left, entrenched in government. The greens sue their buddies in government for every increasing power and control. The solution is to drop the grants and **mission creep** which is pandemic in the environmental movement. We need an EPA, but not in it’s present metastasized organization. Their secret papers, the scientific basis for their regs, must be exposed. The grants that only go to leftist scientists must be shut off, with equal funding going to those who hold differing scientific judgments. The economic studies justifying their regs must be divulged. We need sunlight <...> for <...> green growth. And we need to

²⁸ Law, *A Dictionary*, 147.

²⁹ COCA.

³⁰ Butler, B. *A Dictionary of Finance and Banking*, Oxford University Press, Oxford, UK, 105.

³¹ BNC.

³² Murthy, *LONGMAN*, 561.

³³ COCA.

³⁴ Murthy, *LONGMAN*, 337.

restore trust in government. # Basically we need to restore professional technical authority in both government and the private sector.³⁵

E. Law, Insurance act of God INSURANCE – ‘a natural event that is not caused by any human action and cannot be predicted <...> however, some contracts exclude liability for damage arising from acts of God’³⁶, e.g.:

<...> shall not be under any liability to <...> any party in any way whatsoever for the destruction, damage, delay or any matters of this nature whatsoever arising out of war, rebellion, civic commotion, strikes, lock-outs and industrial disputes; fire, explosion, earthquake, *act of God*, flood, drought, or bad weather; the unavailability or deliveries, supplies, work, disks, or other media or the requisitioning or any other act or order by any government department, council or other constituted body.³⁷

F. Marketing

empty nesters MARKETING – ‘a term commonly used to describe middle-aged or older couples whose children have grown up and ‘left the nest’ to live on their own’³⁸, e.g.:

Condos are popular with homeowners who don’t want or need a lot of space and landscape to take care of, from singles to young marrieds to *empty nesters*. Usually smaller than a detached home, condos can present challenges in decorating. Their small size is to be thought of while deciding on a room’s furnishings. Small, however, doesn’t have to mean cramped and uninviting. You may have to make some sacrifices, but it is possible to create a stunning living room in very little space. #³⁹

G. Statistics, Finance

random walk STATISTICS – ‘refers to the theory that prices on a financial market move, for whatever reason, without any

memory of past movements and the movements therefore follow no pattern’⁴⁰, e.g.:

The assumptions underlying the binomial approach can be summarized as follows: # 1. # Perfect capital markets with no taxes or transactions costs. # 2. # Information is costless and universally available. # 3. # Short sales permitted; # 4. # Share prices follow a *random walk* without any underlying trend. # 5. # The risk-free rate is constant over the life of the option. # 6. # No dividends. # 7. # A one-period time horizon. Assume that at the exhaustion of the investor’s time horizon there are two possible end states, <...>.⁴¹

3. Partial meaning transfer as basis for PU-terms

3.1. Partial meaning transfer of type 1

As to partial shift of component meaning in a terminological set expression, it may be of two types. Partial meaning transfer of **type 1** is clearly revealed through the dictionary definition that accompanies a terminological set expression in its corresponding dictionary entry. Here I follow the rule: if the wording/formula of the definition repeats at least one word of the terminological set expression, it proves that the latter is a language unit of a phraseological nature having an *evident partial shift* of component meaning, c.f.:

a) **standstill agreement** FINANCE – ‘in an unwanted takeover, an *agreement* between a company and the bidder (=someone trying to take control of it) in which the bidder agrees not to buy any more shares in the company for a particular period of time in return for more power on the board etc.: *It signed a standstill agreement under which it promised not to increase its holding for three years*’⁴²;

b) **buzz group** MARKETING – ‘one of several small *groups* of people that a bigger group is divided into, in order to discuss what they think about a subject, for example a

³⁵ COCA.

³⁶ Law, *A Dictionary*, 13.

³⁷ BNC.

³⁸ Harris, Ph. *The Penguin Dictionary of Marketing*. Penguin Books, London, UK, 82.

³⁹ COCA.

⁴⁰ Law, *A Dictionary*, 437.

⁴¹ BNC.

⁴² Murthy, *LONGMAN*, 16.

training course: *Buzz groups are an excellent way of promoting discussion during training sessions*⁴³;

c) **sitting tenant** PROPERTY – ‘a **tenant** who has the right to continue to live in a property or part of it, when it is sold to a new owner: *She bought the house very cheap because it had sitting tenants*’⁴⁴;

d) **depressed market** COMMERCE – ‘a **market** where there is little demand for the products and services offered for sale: *Many traders are suffering because of the depressed market*’⁴⁵;

e) **splash page** COMPUTING – ‘a preliminary **page** that precedes the normal home page of a website; <...> site users can either wait to be redirected to the home page or can follow a link to do so’⁴⁶; etc.

Here are some contextual examples – for d) and e) – that confirm the phraseological meaning of the term having resulted in *an evident partial semantic shift*:

d) # The continuing slide in California home prices, the longest in more than a half-century, is dragging down the rest of the state’s economy in a vicious spiral. # Housing prices across the state dropped an average of 12 percent from mid-1990 to early 1993 and are still falling, according to Regional Financial Associates in West Chester, Pa. The decline in values is hitting people who bought near the peak, who try to take out home equity loans or whose inflated estimates of their net worth are being dashed by depressing real estate stories. # As a result, the **depressed market** for homes is throwing the California economy at least four punches <...>.⁴⁷

e) **Splash pages** are a wonderful way to show off the best work you can create, and hence also act as a portfolio of your work and operate capacity for potential employers. As the **splash page** states the technical

requirements necessary for their certain web site, it allows the reader to pick, prior to visiting the web site, the technology that finest fits them and their computers. It is also a fantastic means of making use of your server logs to get the complete breakdown of the actual number of consumers to the website. <...>. The cons to **splash pages** are not that a lot of or main. It is only that some readers do not like splash pages as it prevents them from entering the site instantly, and therefore might leave the internet site upon seeing the **splash page**.⁴⁸

3.2. Partial meaning transfer of type 2

To find out partial meaning transfer of **type 2** it is necessary to scan the definition and to look for either synonymous words for the components of the term under analysis or for words pertaining to the identic thematic group or field. And in case at least one of the term-component synonymous to a word in definition or belongs to its thematic group or field, then it might be called *non-evident, partial semantic shift* of component meaning. To see it, let us compare the semantic/thematic fields of the words **registration** and **record**, **income** and **money**, **doctor** and **someone**, **audit** and **examination**, **cash** and **money**, e.g.:

a) **shelf registration** FINANCE, LAW – ‘the allowance that, since 1983, larger companies may officially **record** advance details of securities with the Securities and Exchange Commission (SEC) without any date of issue so that when they need to raise capital they make an issue ‘off the shelf’ without the delay involved in waiting for clearance of an application to the SEC’⁴⁹;

b) **transfer income** ECONOMICS, FINANCE – ‘**money** received from the government in the form of pensions, unemployment benefits, farming subsidies, etc.; it is not paid for goods and services, but is transferred by means of taxation from one group of people to another’⁵⁰;

⁴³ Ibid, 240-241.

⁴⁴ Tuck, A. *Oxford Dictionary of Business English*. Oxford University Press, Oxford, UK, 425.

⁴⁵ Tuck, *Oxford*, 128.

⁴⁶ Law, *A Dictionary*, 490.

⁴⁷ COCA.

⁴⁸ COCA.

⁴⁹ Bannock, Gr. *The New Penguin Business Dictionary*. Penguin Books, London, UK, 342.

⁵⁰ Tuck, *Oxford*, 446.

c) **company doctor** – ‘*someone* with special knowledge and experience who is employed to help a business that is losing money and which may have to close: *The ailing engineering firm has called in a company doctor after shedding 90% staff*’⁵¹;

d) **green audit** ECONOMICS, FINANCE – ‘an internal or external **examination** of the impact of the activities of an organization on the environment [which] purpose is usually to ensure that the organization has clear environmental policies <...>’⁵²;

e) **cash mountain** [usually singular] FINANCE – ‘*money* that a company has available to spend, for example to buy other companies, or to give to shareholders: *The group’s cash mountain has shrunk*’⁵³; etc.

Here are some contextual examples – for d) and e) – confirming the phraseological meaning of the term as the result of a *concealed partial semantic shift*:

d) Erin Porter did an environmental audit of the photography tab at her Pittsburgh High School as part of her environmental club’s schoolwide **green audit** for Earth Day 2000. Porter searched to see: Is the fixer recycled? Are chemicals properly handled? “The teacher was slightly hesitant at first,” says Porter. But for naught. If the green survey were a report card, she says, the lab would get an A. What Porter really noticed, however, was how she started to view chemicals back home. Now, she says, I’m much more conscious of what I’m dumping down the sink.⁵⁴

e) <...> Despite its **cash mountain**, South West is still generally seen, perhaps unfairly, as the least attractive of the authorities and privately the Government is worried about its flotation prospects. The Camelford pollution incident, coupled with the bungled appointment of a new finance

director, has contributed to an impression of management incompetence.⁵⁵

3.3. Partially transferred PU-terms domains

The semantic and quantitative studies show that alongside with terminological word combinations having transparent meaning (i.e. having no signs of semantic transference of components), terminological set expression based on partial shift of component meaning are actively employed in the following domains serving business communication:

A. Accounting

day book ACCOUNTING – ‘an account book in which goods and services bought on credit and sales are recorded: *Any purchase invoices should be checked and entered into the purchases day book and the ledger*’⁵⁶, e.g.:

Special functions # If the establishment has substantial special function business, e.g. banquets, weddings, dances, dinners, conferences, etc., it is usual to open a separate special functions **day book** which is posted to a composite special functions debtors account in the ledger.⁵⁷

B. Banking

floating rate also variable rate BANKING – ‘an interest rate that can change during the life of the loan: *CB is trying to substitute floating rate for fixed rate mortgages in France*’⁵⁸, e.g.:

The net effect will be to eliminate the currency flow surplus. The demand curve for sterling will shift to the left and the supply curve will shift to the right until they intersect at the fixed rate of exchange. At that point the money will stop rising (at least from this source). Under a totally free **floating rate**, total currency flow surpluses will be eliminated by an appreciation of the exchange rate.⁵⁹

⁵¹ Murthy, LONGMAN, 160.

⁵² Butler, *A Dictionary of Finance and Banking*, 159.

⁵³ Murthy, 78.

⁵⁴ COCA.

⁵⁵ BNC.

⁵⁶ Murthy, LONGMAN, 135.

⁵⁷ BNC.

⁵⁸ Murthy, LONGMAN, 441.

⁵⁹ BNC.

C. Commerce

sunset industry COMMERCE – '<...> often contrasted with *sunrise industry* and denotes an old, dying industry such as ship-building, but that term has not stayed the course so well'⁶⁰, e.g.:

<...> Mr Harrison said: 'Following the closure of the Swan Hunter yard the Government has finally agreed to talk to the EC about getting the same subsidies for all British shipyards that we've been giving to our competitors in the EC for years. 'Shipbuilding isn't a ***sunset industry***. It's quite clear from papers issued by the EC that in the medium and long term shipbuilding is more than a viable industry it will grow and prosper. 'In 10 years' time Cammell Laird could be closed and yards in France and Spain could be on the crest of a wave because they retained their shipbuilding capacity.'⁶¹

D. Economics

invisible exports [plural] ECONOMICS – 'exports such as financial services that are not physical goods or products: *Selling insurance overseas is one of Britain's largest invisible exports*'⁶²; e.g.:

Since then we have had Polly Peck, Brent Walker, the scandal of the Bank of Credit and Commerce International, and then the greatest scandal of all – the Maxwell scandal. As self-regulation is proving somewhat less than satisfactory, is it not time to consider establishing a Securities and Exchange Commission – SEC – as exists in America? The City of London is important to the ***invisible exports*** of this country, and we cannot allow scandals such as those that have happened in the past.⁶³

E. Finance

standstill agreement FINANCE – 'in an unwanted takeover, an agreement between a company and the bidder (=someone trying to take control of it) in which the bidder agrees not to buy any more shares in the company

for a particular period of time in return for more power on the board etc.: *It signed a standstill agreement under which it promised not to increase its holding for three years*'⁶⁴, e.g.:

<...> In addition, the company confirmed yesterday it defaulted on an \$800m Eurobond issue secured by a tower in Manhattan's World Financial Centre. O &Y; failed to make a \$62m interest payment on the issue despite a 20-day grace period and is trying to negotiate a ***standstill agreement***. O &Y; has also missed a C\$450m principal payment on Toronto's Scotia Plaza development and a \$100m principal payment on a New York property. Negotiations continued yesterday in Toronto between the company and various groups of creditors.⁶⁵

F. Marketing

diffusion process MARKETING – '<...> the process by which a new idea or product is spread accepted and assimilated within a market or industry'⁶⁶, e.g.:

The Telecommunications Act of 1996, the first major telecommunications law reconstruction since 1934, possibly helped accelerate the process of accessibility. <...> Critical disadvantages may evolve during the years that it takes for technologies to trickle down to those at the end of the ***diffusion process***. For example, while most homes in the United States had telephones by the mid-1960s, the high cost of phone connections on tribal lands still prohibits many citizens living on reservations from having basic telephone services even today.⁶⁷

The analysis undertaken reveals about a dozen of business domains gathering idiomatic terms, the most powerful among them are the domains of FINANCE, HUMAN RESOURCES, COMMERCE, ECONOMICS and MARKETING. The whole ratio picture is presented in the bar graph below.

⁶⁰ Ayto, 564.

⁶¹ BNC.

⁶² Murthy, LONGMAN, 193.

⁶³ BNC.

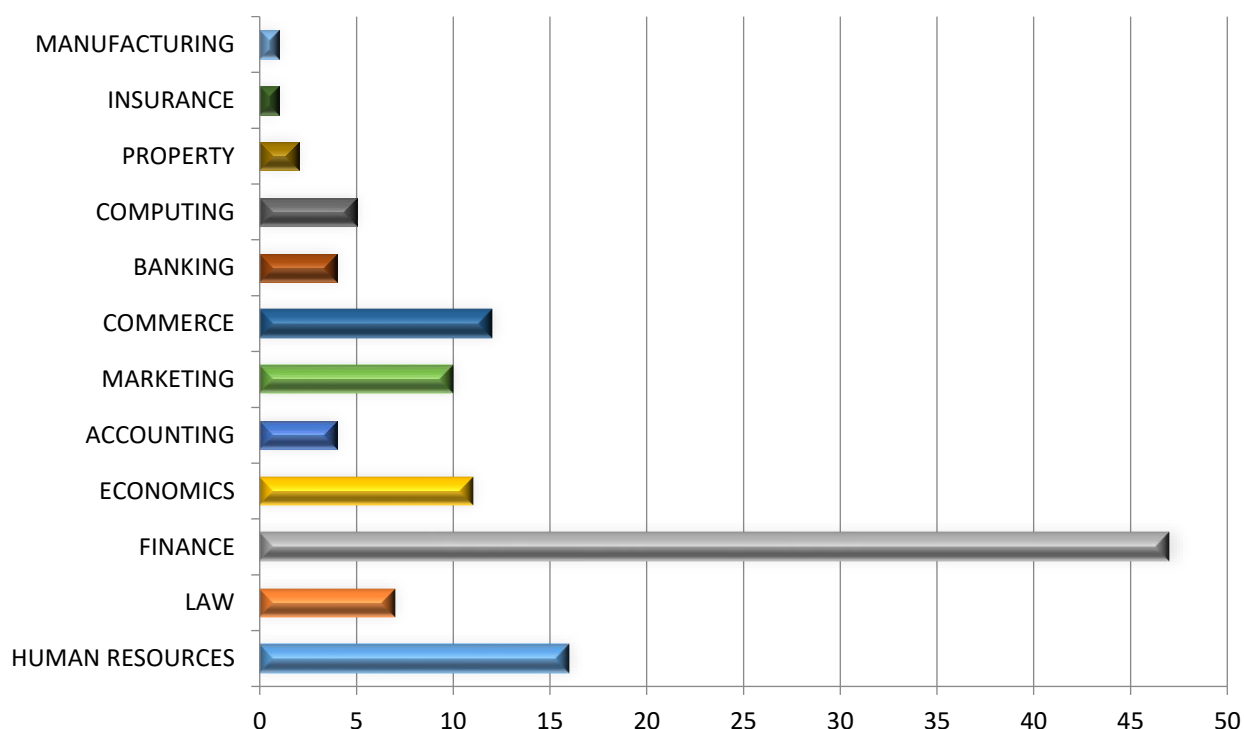
⁶⁴ Murthy, LONGMAN, 16.

⁶⁵ BNC.

⁶⁶ Harris, *The Penguin*, 69.

⁶⁷ COCA.

Figure. Percentage relations of basic Domains embracing PU-terms based on meaning transfer



Conclusion

The study was mainly urged by the two problems in modern linguistics and lingo-pragmatics, i.e.: a) the issue of interrelation of terminology and phraseology and the necessity to define the status of business terminological set expression as referred to phraseology, and b) the issue of pragmatic value of business terminological phraseology in ESP, which were successfully solved in the research.

The following associated objectives of the study have been achieved:

1) the quantitative correlation of Business English PU-terms with a full meaning transfer and those with a partial meaning transfer have been established; 2) among the latter, the two subtypes of the incomplete semantic transfer of the PU-term component composition have been found out and the corresponding terms have been assigned to them, namely: *an evident partial semantic shift* of component meaning and a *non-evident, or concealed, partial semantic shift* of component meaning; 3) the result of the study in the form of a bar graph has been

presented, as the clarification of the nomenclature of the most active business English domains that operate with business PU-terms.

The analysis based mainly on definitions and contexts gives the opportunity to establish the interrelation of terminology and phraseology and define the status of business terminological set expression as referred to phraseology in the following way:

- 1) about 38% of business terminology fixed in modern Business English dictionaries is of phraseological nature;
- 2) one third of the phraseological business terminology belongs to idioms, i.e. to phraseological units having full transfer of component meaning, and
- 3) the rest of it belongs to phraseological unities, i.e. to PU-terms having partial transfer of component meaning, which in its turn may be differentiated between:
 - (a) PU-terms being the result of *an evident partial semantic shift* of

component meaning and embracing about 32,7% of the PU-terms under study, and

(b) PU-terms being the result of a *non-evident, or concealed, partial semantic shift* of component meaning and embracing about 67,3% of the PU-terms under study.

The perspective studies are seen in the following:

(a) in structural and quantitative analysis of terminology of phraseological nature presented in the recent English-Russian business dictionaries edited by paternal specialists in the field under study (such as B. G. Fedorov, L. N. Eskin and a number of other innovative authors⁶⁸),

(b) in typological studies of PU-terms.

The pragmatic perspective of the research lies in the collective compiling a manual for undergraduates on Business English Phraseology, which obviously suggests the practical significance of the work.

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Конфликты интересов: у автора нет конфликта интересов для декларации.




Conflicts of Interest: the author has no conflict of interest to declare.

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UDC 81-114.2

DOI: 10.18413/2313-8912-2022-8-4-0-5

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The next turn in a dialogue:
key algorithms of text dynamics

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Received 14 January 2022; accepted 13 December 2022; published 30 December 2022

Acknowledgements. The work was prepared with the support of the President grant of the Russian Federation for young scientists – doctors of science MD-3824.2021.2.




Abstract. The purpose of the paper is to identify and describe the key algorithms of text dynamics in a dialogue. The relevance of the work is determined by its inclusion in the problem field of dialogic linguistics, one of the unresolved issues of which is the question of creating the next turn in a dialogue. The novelty of the research lies in the presentation of the genesis of the next turn as a manifestation of the algorithmic nature of the language – the recoding algorithm as a predictive interpretation process that genuinely anticipates the perception of the image of the language unit by the addressee. The research is carried out in accordance with the dialogical model of language as a version of the immanent-centric theory of the language. It is founded on a hypothesis under which the language is structured in such a way and not otherwise in order to serve the dialogue situation. The emergence of the next turn in a dialogue is described as the implementation of text recoding algorithms. The research is grounded on the material of the Internet dialogue, presented by a news article and comments to it in the amount of 258 units. The paper identifies and describes analytical and synthetic algorithms of text dynamics in a dialogue. The analytical algorithms are differentiated according to the form of the initial phrase, which can be either monological or polylogical. Two analytical algorithms are being distinguished and described: divergence and neutralization. The synthetic algorithms of text dynamics are represented by two varieties, stated as quoting and retelling. It is concluded that the destination image is included in the recoding algorithm. The analytical algorithms of text dynamics include a situational image of the addressee. In contrast the synthetic algorithms include an extra-situational image of the addressee. The obtained outcomes clarify the idea of the forms of updating the dialogical utterance and the specifics of its genesis.

Keywords: Recoding; The next turn; Text; Dialogue; Text algorithm

How to cite: Shpilnaya, N. N., Sologub, O. P. and Mannapova, S. A. (2022). The next turn in a dialogue: key algorithms of text dynamics, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 57-71. DOI: 10.18413/2313-8912-2022-8-4-0-5

УДК 81-114.2

DOI: 10.18413/2313-8912-2022-8-4-0-5

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Вторая реплика в диалоге: ключевые алгоритмы
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Статья поступила 14 января 2022 г.; принята 13 декабря 2022 г.;
опубликована 30 декабря 2022 г.

Информация об источниках финансирования или грантах: Работа подготовлена за счет средств гранта Президента для молодых ученых – докторов наук МД – 3824.2021.2.

Аннотация. Цель статьи – выявить и описать ключевые алгоритмы текстовой динамики в диалоге. Актуальность работы определяется ее включенностью в проблемное поле диалогической лингвистики, одним из нерешенных вопросов которой является вопрос о создании ответной (второй) реплики в диалоге. Новизна исследования заключается в представлении генезиса второй реплики как проявления алгоритмической природы языка – алгоритма перекодировки как прогностического интерпретационного процесса, предвосхищающего восприятие образа языковой единицы адресатом. Исследование выполнено в русле диалогической модели языка как версии имманентноцентрической теории языка. Оно основывается на гипотезе, согласно которой язык устроен так, а не иначе, для того чтобы обслуживать ситуацию диалога. Появление ответной реплики в диалоге описывается как реализация текстовых алгоритмов перекодировки. Исследование выполнено на материале сетевого диалога, представленного новостной статьей и комментариями к ней в количестве 258 единиц. В статье выделены и описаны аналитические и синтетические алгоритмы текстовой динамики. Аналитические алгоритмы дифференцируются в зависимости от формы инициальной реплики, которая может быть монологической или полилогической. Выделены и описаны два аналитических

алгоритма: дивергенция и нейтрализация. Синтетические алгоритмы текстовой динамики представлены двумя разновидностями – цитированием и пересказом. Делается вывод о том, что образ адресата включен в алгоритм перекодировки. Аналитические алгоритмы текстовой динамики включают конситуативный образ адресата, а синтетические алгоритмы – внеситуативный образ адресата. Полученные результаты уточняют представления о формах актуализации диалогического высказывания и специфике его генезиса.

Ключевые слова: Перекодировка; Вторая реплика; Текст; Диалог; Текстовый алгоритм

Информация для цитирования: Шпильная Н. Н., Сологуб О. П., Маннапова С. А. Вторая реплика в диалоге: ключевые алгоритмы текстовой динамики // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 57-71. DOI: 10.18413/2313-8912-2022-8-4-0-5

Introduction

The paper under study has been written in line with the immanent-centric theory of language, the variants of which (structuralism, derivational grammar, linguosynergetics) have long been known in linguistics. Keeping the line of immanent-centric research, we further develop the idea that a language is arranged so and not otherwise, in order to maintain the situation of dialogue. A dialogocentric model (theory) of language, from our point of view, is one of the versions of immanent-centric hypotheses about the structure and functioning of the language.

In modern linguistics, the idea of a dialogocentric language is certainly recognized, but it is substantiated from the standpoint of anthropodynamic theories. For example, P. Linell (Linell, 2005) proposes a dialogocentric model of language as a variant of the contextual and interactional theory of language (see also Grice, 1985; Frank, 1986; Dijk van, 1984). The idea of dialogue as a principle of organizing semiotic systems, including language, is discussed, for instance, in (Lotman, 1984).

The interest to a dialogue as to a basic principle of language communication organization in the second half of the 20th century correlated with the interest of researchers to the structure of a dialogue as a text type. Conversational Analysis became a new research area that had a certain contribution to the dialogue structure research. Particularly, many specialists on

dialogue until today use the turn-taking system described in the classical paper of H. Sacks, E. A. Schegloff and G. Jefferson (Sacks, Schegloff and Jefferson, 1974) as a basis for creating their own models of dialogue structure. They in some ways transform, specify or supplement the understanding of turn-construction, turn-allocation components and rules of H. Sacks, E. A. Schegloff and G. Jefferson's system (see for example the model of the mental processes in (Levinson and Torreira, 2015)).

The hypothesis of dialogic-centricity of a language assumes the actualization of the idea of language algorithmic nature. In a broad scientific context, this idea can be comprehended as a version of the Generative (Transformational) Grammar of N. Chomsky, defending the thesis of innate language ability and recursive rules for deriving statements in any language (Chomsky, 1957). The algorithmic nature of a language means that a language is a recoding algorithm possessing a prognostic orientation. In the field of computer programming artificial languages are viewed as the results of recoding (as algorithmic formations), we consider natural language to have the same algorithmic basis.

Recoding is a prognostic interpretive process that anticipates the perception of a language unit image by the addressee. The code transitions, and, in fact, recoding as an innate mechanism of language / speech ("speech language") have been described by N. I. Zhinkin, considering code transitions as

a process of translating the code of internal speech into an articulated code (Zhinkin, 1964). However, recoding is considered by the researcher as a manifestation of the explicative function, that is, the function of expression of the expressed (N. I. Zhinkin contrasted the communicative function and the explicative function). In the current research, recoding is interpreted as a mechanism of a dialogue, its very existence is conditional upon the adaptation of language to the situation of dialogue, namely the fact that the expressed will be perceived by the addressee, so the perceptual element (perception of the addressee) is genuinely included in the recoding algorithm. Dialogocentric orientation of the recoding inevitably assumes that this process is carried out with allowances made for the image of what will be said. In other words, the language ability of a speaker is arranged in such a way as to be able to identify and distinguish the internal form of what will be said. Otherwise, from our point of view, a speaker would be deprived of the ability to produce and perceive speech, as these language activities by some means involve a premonition of the complete unit image.

In the paper we will try to dwell upon the algorithms of text dynamics in a dialogue, illustrating the connection between the first and the next turn at the propositional level.

The aim of the paper and its methodological grounds

The purpose of the paper is to identify and describe the algorithms for recoding the next turn in a dialogue. The algorithm is considered as an intralinguistic process of prognostic interpretation of a language sign, which determines its speech manifestation in one form or another, under one or another mode. Text recoding algorithms determine the pattern of the next turn.

In order to clarify the research logic, we consider it necessary to outline the methodological grounds of the research.

A. A dialogic utterance, a turn, a dialogic unity

Bearing in mind that a dialogic utterance is always the next turn (Jakubinskij, 1987; Bakhtin, 1997), our further reasoning is based upon the differentiation of a dialogical utterance (text) and a dialogical unity. A dialogical utterance is a language unit represented in speech by a single utterance (a single turn) that implements a dialogical meaning (*vide infra*). A dialogical unity is a syntagmatic formation that includes two dialogical statements (two turns) (Mihajlov, 1984). In this case, one utterance is considered as an initial turn, and the other – as the next turn.

B. A dialogical utterance as the dialogical meaning actualizer

Considering the dialogical statement as a turn of the dialogical unity (dialogue), following M. M. Bakhtin, we believe that the dialogical statement realizes not only the referential meaning, but also the dialogical one. We assume that the dialogical meaning has a phatic referent, that is *the Other* as an image of a communication participant. According to the concept which we are developing, the dialogical meaning of a statement is related to modal predicates that correlate with receptive dialogical modalities – an agreement, a disagreement, and a neutral modal predicate. Based on the versatile nature of a dialogical meaning, we have identified some genesis models of a dialogical utterance: agreement model, contrast model and adjunction model.

C. The addressee in the dialogue

Usually, the addressee in the dialogue is the person to whom a dialogical turn is faced directly. This detail can probably be explained by the fact that for a long time linguists paid their attention to oral speech in a situation involving the visual presence of the addressee. The consequence of this comprehension was that specialists in pragmalinguistics started to distinguish between the addressee and the listener, who is present in the act of communication, but who is not the addressee of the message. The paper develops the idea according to which the addressee of the message can be any speaker

who can potentially respond to the message. The way a question is put, in our opinion, is quite justified, because in written communication, especially in the Internet dialogue (network communication), the addressee of the message is not only the author of the turn, but also any other speaker who could potentially leave a comment. It is mainly because all comments are saved and available to anyone who decides to participate in the discussion under study.

When identifying algorithms of textual dynamics, we implement a so called semasiological approach, that is, we go in the direction from the statement to those procedures that determine its external pattern. However, the very description of the algorithms for creating the next turn in a dialogue is carried out from the standpoint of the onomasiological approach, which involves modeling of the addressant's (speaker's) speech activity. Combination of onomasiological and semasiological research logic corresponds to the general tendency of linguistic research dealing with the form of a language unit, but describing it as a result of some certain language-speech procedures.

The next turn in a dialogue: the problem of genesis

The issue of the next turn emergence in a dialogue, most probably, is actualized for the first time in the work of L. P. Jakubinskij "On Dialogical Speech" subsequent to the decision on the specifics of replication. According to L. P. Jakubinskij, the appearance of the next turn in a dialogue is a manifestation of the speaker's dialogical ability, determining the manifestation of replication mechanism in the reply situation. As a consequence, replication can be viewed as a mechanism of language ability that determines the emergence of utterances in a dialogue (dialogical utterances).

Later, the idea of replication was developed in scientific papers that postulate the idea of turn-taking process in a dialogue and the conditions specifying such a process. In other words, the replication problem is comprehended as a problem of turn-taking. In

this regard, linguists were faced with the task of explaining the appearance of the next turn in a dialogue. The explanation was provided as follows: in the part "given" there are two turns, in the part "it needs being explained" there is an answer to the question of how these two turns are connected.

The most widespread is the pragmatic theory of replication (the 80-90s of the 20th century), which explains the exchange of turns by means of communication participants' intention to cooperate (Grice, 1985). According to this theory, the emergence of the next turn is a pragmatic process of illocutionary coordination in the stimulus-response model (Baranov and Krejdlin, 1992; Gerasimova, 1986; Paducheva, 1982), and it is a process anticipated by the addressant. The notion of illocutionary coercion becomes central in this approach and it generates the internal structure of the minimum dialogical unit and "connects speech acts in a real dialogue, and the latter therefore receive new content characteristics that reflect their functioning in natural language communication" (Baranov and Krejdlin, 1992: 85).

For example, it is assumed that a question can acquire the following versions of the text: an echo-question, a clarification-seeking question, an answer (a negation or an assertion); a request can obtain a consent, a refusal, a clarification-seeking question, and an echo-question etc. Pragmatic interpretation of a dialogue is discussed not only in the Speech Act Theory, but also in such theories as J. Verschueren's Linguistic Adaptation Theory and H. Spencer-Oatey's Rapport Management Theory (Verschueren, 1999; Spencer-Oatey, 2008), as well as in the framework of some other modern theories (Bragina and Sharonov, 2019; Wang and Yang, 2020; Kolmogorova, Kalinin and Malikova, 2021). It can be noticed that the pragmatic approach does not take into account the real activity of the addressee, which can hardly be described in the stimulus-response model.

In the 90s of the 20th century, there was developed a receptive theory of replication, presented in the works of N. D. Arutyunova and her disciples. N. D. Arutyunova, dwelling on the phenomenon of the next turn in a dialogue, concludes that its genuine emergence is the result of the addressee's receptive activity, and therefore the next turn is related to dialogical modalities – either agreement or disagreement (Arutyunova, 1990). According to N. D. Arutyunova, the next turns create a favorable ground for the use of modal words (*doubtfully, of course, etc.*); <...> they indicate the area of secondary predicates of truthful assessment (an assertion or a negation) (Arutyunova, 1990: 177). However, even with this approach, a certain amount of turns, non-actualizing either agreement or disagreement, remains unaccounted for.

Based on the ideas of N. D. Arutyunova and M. M. Bakhtin, we believe that the emergence of the next turn in a dialogue is associated with receptive modalities of agreement, disagreement and neutral dialogical modality, which determine the phatic patterns of dialogical text actualization. At the same time, receptive modalities illustrate the peculiarities of dialogical comprehension (according to M. M. Bakhtin), acting as a model marker of creating the next turn, but their presence does not fully explain the variability of the textual form of the next turn in a dialogue.

The current research in some ways corresponds with the general features of turn-taking process in conversation, such as, for example, Local Management System and Interactionally Managed System in a classical paper of (Sacks, Schegloff and Jefferson, 1974). In the dialogue type “Internet news article + Comments” we can observe many same facts as to the oral conversation, for example, about not fixed turn order and turn size, not specified length of conversation etc. (see Sacks, Schegloff and Jefferson, 1974: 700-701). That confirms the fact about central position of conversation among the speech-exchange systems.

In comparison with some other modern researches on the topic of turn-taking process, which often deal with oral dialogues (conversations), our research takes an Internet news article and comments to it as a specific dialogical system. That is why such facts as pauses, gaps, overlaps etc., which are often analyzed in the papers about turn-taking in a dialogue, are not in focus in the current research. While other researches concentrate mainly on phonetic and syntactic components of turn-taking (see, for example, (Levinson and Torreira, 2015)), we analyze the propositional component, concentrating on semantic corresponding between turns.

This paper discusses the issue of variability of the textual form of the next turn in a dialogue. The form of the next turn is perceived as a way of its structuring (internal programming). It is important to stress that we do not set a task of describing the variation of the textual form, our efforts are specifically aimed at finding the reasons for explaining its variations. The paper actualizes the idea according to which the emergence of the response in a dialogue is the implementation of text encoding algorithms that determine the image of the next turn in a dialogue (taking into account the perception of the addressee). We have identified two algorithms for textual dynamics – an analytical and a synthetic one. The analytical algorithm determines a segmented image of the next turn, its syntagmatic distancing from the initial utterance, and the synthetic algorithm determines a segmented image of the next turn, the element of which is the initial utterance. In both cases, there is an inclusion of the image of the addressee (we include a semantic component “a perceptual image of the addressee” in the meaning of the term “the image of the addressee”) in the recoding algorithm. In the case of analytical algorithm, the image of the addressee is situational, i.e. it is implied that the addressee is included into the communicative situation. In the case of a synthetic algorithm the image of the addressee is extra-situational, i.e. it is assumed that the addressee is not inscribed in

the communicative situation. We consider text algorithms to be mechanisms for the internal binding of utterances in a dialogue (Glekner, 1980). Text recoding algorithms, in our opinion, perform a programming function at the replication stage, where replication is a component of a speech generation model in a dialogue.

Research material

To identify the algorithms of text dynamics in a dialogue, we turned to the analysis of a social network dialogue presented by the news article and comments to it in the amount of 258 units¹. There are various reasons for choosing a virtual dialogue as a research material, including the fact that it is a variant of [oral / written] conversational speech, in which a dialogue is presented as a natural form of speech (Shcherba, 1915; Jakubinskij, 1987). P. Linell, dwelling on modern linguistic theories, characterizes linguistics as a manifestation of written-linguistic bias (Linell, 2005), assuming that most theories are based on written (monologue) speech and not on oral (we would add “written” as well) interactive language, i.e. a dialogue. In this context, the Internet dialogue lets us identify natural algorithms of textual dynamics in a dialogue, which, in all probability, can be considered as a manifestation of innate language ability.

Considering the text of the news article as an initial utterance, we believe that its content can be presented in the form of a proposition:

Импортозамещение европейских сыров привело к тому, что цена за килограмм российского сыра стала намного дороже. Между тем, чтобы просто научиться делать приличные аналоги европейских сыров в условиях эмбарго, и производством конкурентного на мировом рынке продукта, лежит огромная дистанция. Вряд ли сыр, сделанный в России, можно будет

продать по цене 40 евро за килограмм где-то кроме России². (The result of import substitution for European cheese is a higher price for one kilogram of Russian cheese. There is a great difference between simply learning how to make presentable analogues of European cheese under the conditions of embargo and producing a globally competitive product. It is doubtful that Russian cheese can be sold at 40 euro per kilogram anywhere except Russia.)

Research results and discussion

On the basis of empirical material, two types of algorithms of textual dynamics in dialogue are distinguished: analytical and synthetic. The analytical algorithm of text dynamics is manifested in the actualization of the next turn, which is implemented in a segmented way, i.e. outside the initial utterance. As well as the synthetic algorithm of text dynamics is manifested in actualization of the next turn that is not segmented with an initial utterance.

A. Analytical algorithms of text dynamics in a dialogue

Analytical algorithms of text dynamics fractionalize the dialogical meaning of dialogical unity into the meanings realized in the initial and next turns. They are differentiated depending on the form of the initial utterance, which can be either monological or polylogical. The monological form of the initial utterance is observed if the response is addressed to only one initial utterance. The polylogical form of the initial utterance is observed if the response is addressed to several initial utterances at the same time. The algorithm of response to the monological utterance is divergence (see Figure 1), the algorithm of response to the polylogical utterance is neutralization (see Figure 2).

¹ Sokolov, S. (2022). About import substitution in Russia on the example of cheese – a painful column of NGS observer [Online], available at: <https://ngs.ru/text/food/2022/08/17/71565194/> (Accessed 18 August 2022).

² Proposition is presented in the text of the article: Sokolov, S. (2022). About import substitution in Russia on the example of cheese – a painful column of NGS observer [Online], available at: <https://ngs.ru/text/food/2022/08/17/71565194/> (Accessed 18 August 2022).

Figure 1. Realization of divergence algorithm

Рисунок 1. Реализация алгоритма дивергенции

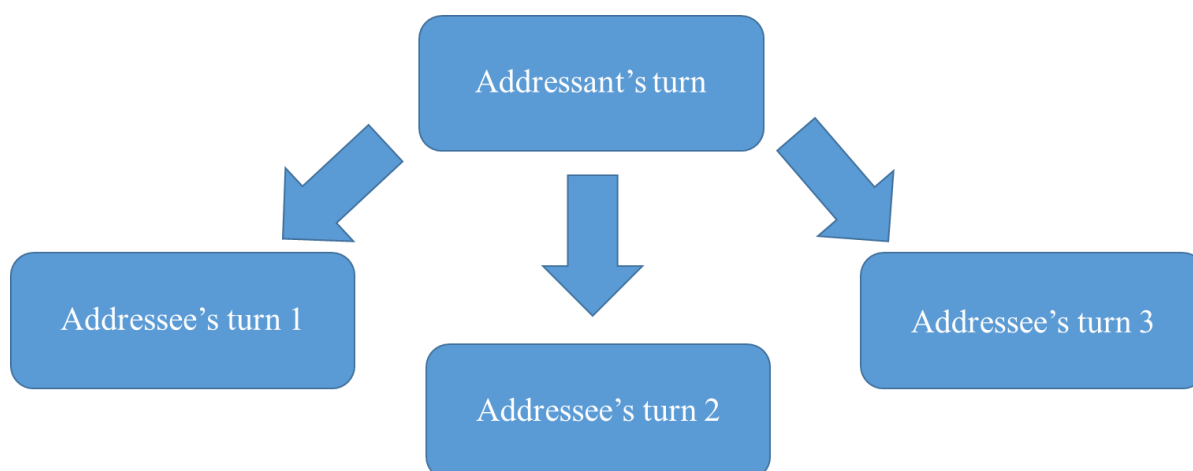
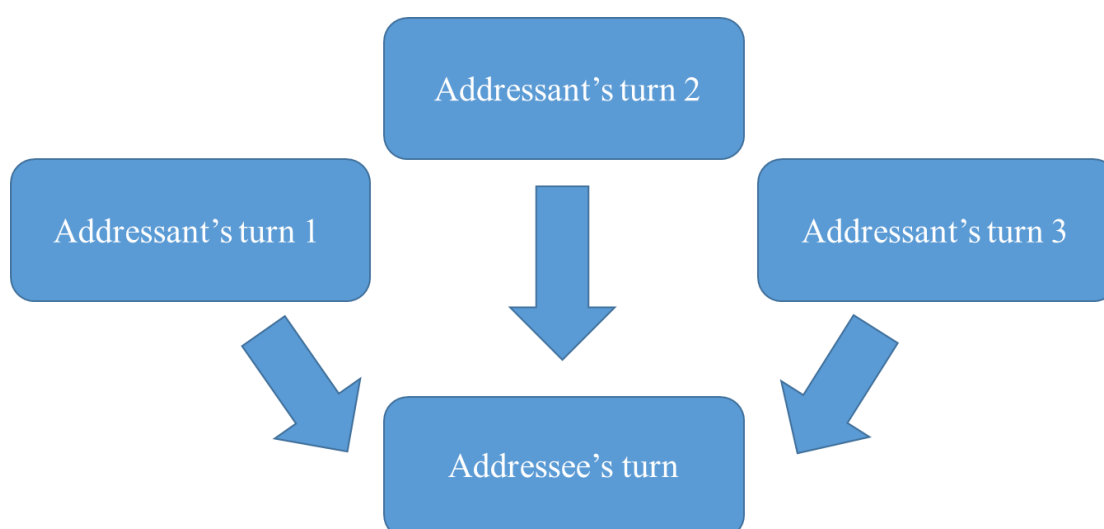


Figure 2. Realization of neutralization algorithm

Рисунок 2. Реализация алгоритма нейтрализации



It should be noted that the analytical algorithms of text dynamics include a situational image of the addressee, i.e. the addressee understands the context.

Divergence as an algorithm of text dynamics in a dialogue

Divergence is the algorithm of text dynamics, in which the dialogical meaning of the initial utterance is split into individual statements that have their own dialogical meaning.

The divergence of the analyzed initial utterance is carried out in accordance with different models: contrast model, agreement

model and adjunction model. There are some examples below.

Contrast model as an implementation of the divergence algorithm

Actualization of the contrast model means the realization of the dialogical meaning of disagreement / disapproval with the subject (agent) of the initial utterance.

По-моему автор переборщил со своим гурманскими пристрастиями. Уже давно кушаю местные сыры не дороже 800-900 руб/кг и они меня вполне устраивают! (I think the author is really an avid foodie. I have been eating local cheeses

*at 800-900 rubles per kilo and I am quite satisfied!)*³

The example shows that the speaker does not agree with the author's opinion about Russian cheeses (the initial utterance), he believes that Russian cheeses are not behind foreign cheeses in flavor.

Agreement model as an implementation of the divergence algorithm

Actualization of the agreement model means the realization of the dialogical meaning of agreement with the subject (agent) of the initial utterance.

Ну в общем понятно импортозаместилось, только вышло не дешевле, а дороже в полтора два раза т.к. нет конкуренции и производств, всё развалено а создавать с нуля о-о-о-чень дорого! (Okay, we have the example of import substitution, but as a result the product is not cheaper, it is half or even twice as expensive as the previous variants. It is all because there is no competition in this sphere, everything has broken up, and to create something new is incredibly expensive.)

As we can see, the speaker approves the author's position: Russian cheeses production under the conditions of breakup of course negatively affects the quality of the product.

Adjunction model as an implementation of the divergence algorithm

Actualization of the adjunction model means the realization of a neutral dialogical meaning, i.e. a speaker neither agrees nor disagrees with the initial utterance, his/her opinion may be ambiguous (arguable).

Завышенные цены в отсутствии конкуренции. Рашка же. Впрочем, ничего нового. (High prices and lack of competition. That's Russia. In fact there is nothing new about this.)

The paragraph above is the example of the speaker's neutral attitude to the author's

opinion. The speaker looks at the situation in the context of the events that are typical for Russia, as a result we can see a neutral reaction in the speech: *Впрочем, ничего нового (In fact there is nothing new about this.)*.

Neutralization as an algorithm of text dynamics

Neutralization is the algorithm of text dynamics, the result of which is the combination of dialogical meanings of several initial utterances in the next turn, so the dialogical meaning of the next turn is addressed to all initial utterances. In some previous works we described the effect of neutralization as a derivational mechanism that determines the convergence of utterances in a dialogue. Rethinking of the neutralization nature lets us illustrate its manifestation as an algorithm of textual dynamics in a dialogue.

There are different implementation models of neutralization algorithm, but in the framework of this paper we are going to consider as an example the model where initial utterances, created by the agreement model, are neutralized in the next turn, created by the contrast model.

Откуда знать хуже или лучше? Или у людей такая память на вкусы?.... Дайте весь импортный ассортимент в продажу, сравним. А так это блаблабла получается) (How do they know if Russian cheeses are better or worse? Is their memory about flavors so good?.. Give us all assortment of imported cheeses for sale, we will compare first. What I see now is just blah-blah-blah))

This turn is a reply to a series of some previous turns that evaluate the import substitution in Russia in a negative way. The author of this turn disagree with the comments of some speakers, because there are not enough reasons in them. According to the author of this turn, it is possible to make a conclusion about quality of Russian cheeses in comparison with imported ones only when we are familiar with "all assortment of imported cheeses".

Another example:

³ There is the authors' English translation of the Russian language examples in the paper. There are original spelling and punctuation in Russian examples.

Столько разговоров, столько претензий. Делайте сами тогда сыр, в чем проблема? Такие все знатоки сыра прям. Не ну если брать сыр за 500 р кг, то конечно наверное в сравнении сыр за 1000 р будет отличаться. Так не берите дешевый сыр. И как всегда у них там и сыры вкуснее, и трава зеленее. Я к сыру равнодушный человек, но бывала в Европе и пробовала там сыр, плюс привозили в качестве презента друзья. Ну сыр, да сыр. Че все так пицат с этого сыра. Вот хамон понравился, да. Хотя наши мясные деликатесы тоже есть очень даже. (So many talks, so many claims. Make cheese by yourself then, what's the problem? I doubt that all of you are cheese experts. Okey, if you buy cheese at 500 rubles per kilo, of course you will feel the difference in comparison with the cheese at 1000 rubles per kilo. So just do

not buy cheap cheese. And as usual "their cheese is tastier, their grass is greener". I am indifferent to cheese. But I went to Europe and ate their cheese, and my friends also brought me cheese from there as a present. So it's just cheese. Why is everybody so mad about this cheese? As for me, I like their jamon more. But at the same time some Russian meat delicacies are also quite good.)

This turn is a reply to those participants of discussion who criticize Russian cheeses. The author of the reply does not take this kind of criticism seriously: *Такие все знатоки сыра прям. (I doubt that all of you are cheese experts.)*

A complete algorithm for the implementation of various models of neutralization is schematically represented in Figure 3:

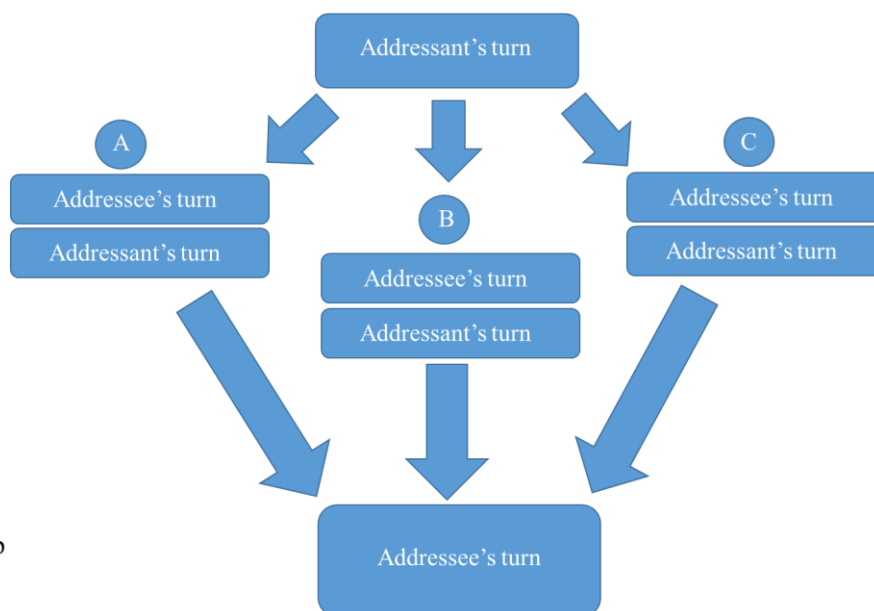
Figure 3. A complete algorithm scheme of various neutralization models implementation

Рисунок 3. Схематичное представление полного алгоритма реализации различных моделей нейтрализации

Stage 1: Internet article as an initial utterance

Stage 2: Group of reactions to the content of the article

Stage 3: Reaction to the group of initial utterances



B. Synthetic algorithms of text dynamics in a dialogue

The implementation of a dialogical statement can be associated with the

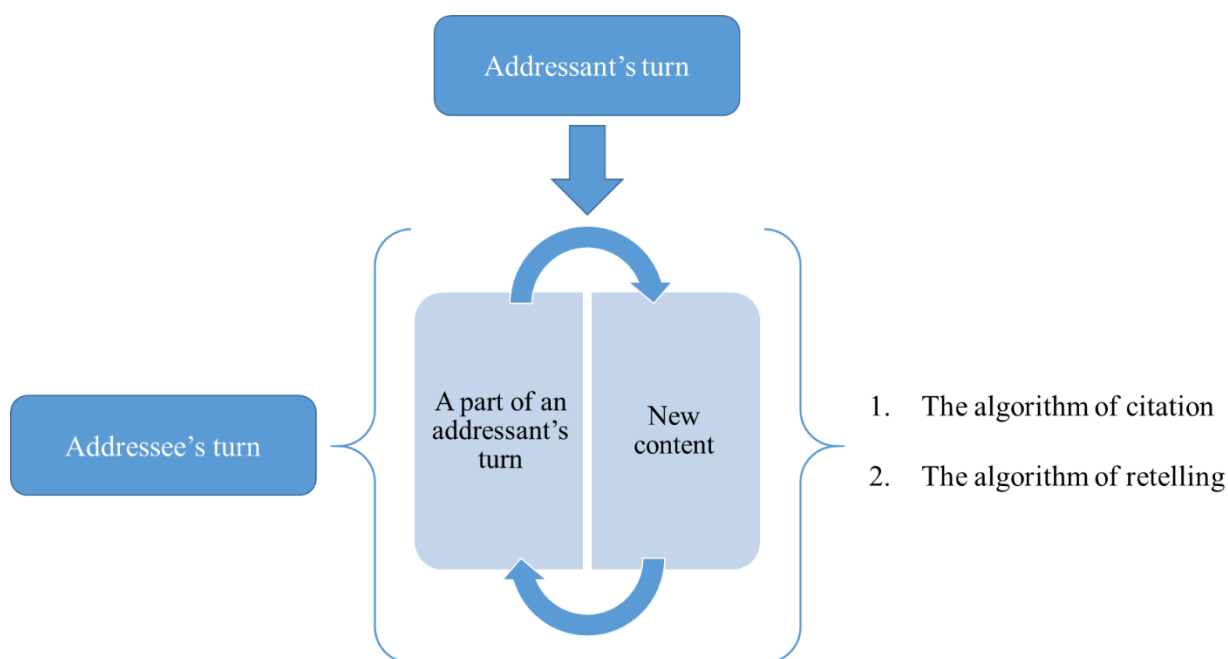
actualization of synthetic algorithms of textual dynamics, which are manifested in cases when the next turn in a dialogue includes the original utterance (see Fig. 4). In

other words, the dialogical meaning of the next turn includes the dialogical meaning of the initial utterance. Citation and retelling can be distinguished here as algorithms for the interaction between two turns.

Under implementing these algorithms, a speaker takes into account that the addressee is out of the situation, i.e. may be unfamiliar with the topic of the discussion.

Figure 4. Synthetic algorithm realization of text dynamics in a dialogue

Рисунок 4. Синтетический алгоритм реализации динамики текста в диалоге



Citation as an algorithm of text dynamics in a dialogue

Citation is an algorithm of text dynamics, the implementation of which assumes that the genesis of the next turn in a dialogue is carried out by actualization of its dialogical meaning based on the inclusion of the initial utterance into the next turn. This algorithm is closely related to the phenomenon of dialogical citation, which was described in detail by N. D. Arutyunova (Arutyunova, 1986).

Below is an example of the implementation of citation as a text algorithm actualized in the dialogue.

Initial utterance (the comment of a speaker): Основной итог импортозамещения - это ощутимое повышение цен. Самый простой сыр

Российский подорожал за 8 лет вдвое. Тот же Российский брендованный - ещё больше. Обычный сыр по цене стал деликатесом. Деликатесные же сыры стали для многих по цене недоступны (The main result of import substitution is a perceptible price increase. The price of the most common Russian cheese has increased twofold in the last 8 years. The price of Russian branded cheese has increased even more. An ordinary cheese has become a delicacy while specialty cheeses' price has become so high so it is impossible for many people to buy them.).

Response utterances (reactions to the comment):

(1) Не надо указывать 8 лет, нужно говорить за последнее почти десятилетие. (To say "in the last 8 years" is

not enough, it should be said “almost in the past decade”).

(2) *Какое вдвое? В 2014г российский сыр стоил около 120р сейчас 650!!! (Is it really “twofold”? In 2014 the price of Russian cheese was about 120 rubles, now it is 650!!!)*

As we can see, the speakers use some fragments of the initial utterance in their responses: *8 лет* (in the last 8 years), *вдвое* (twofold). That is to say that the dialogical meaning realized by the response utterances is based on the evaluation of the initial utterance’s dictum.

Retelling as an algorithm of text dynamics in a dialogue

Retelling is a synthetic algorithm of text dynamics, the implementation of which is associated with the fact that under creating a next turn in a dialogue one or another dialogical meaning is actualized. Realization of this algorithm means that the initial utterance is not included into the response utterance in the original form, but “dissolves” in the next turn as a manifestation of a generalized or personalized “voice” (a semantic position).

The following turn is the example of the response utterance constructed by using the algorithm of retelling:

Нгс подает статьи с такой подоплекой мол жили мы хорошо, но наше бесталковое правительсво сделало все, чтобы мы жили плохо. Поколение неумех блогеров, журналистов, менеджеров, экономистов, филологов, историков, юристов ни чего не умея делать руками только и могут критиковать (Ngs publishes articles with the main idea that our life was good in the past, but our stupid government has done everything to make it bad now. The current generation is the generation of bloggers, journalists, managers, economists, philologists, historians, lawyers ... They have no manual skills, but are masters of criticism.).

This turn has been created using the algorithm of retelling. The speaker seems to

retell the content of a series of articles that are criticizing the government: *Нгс подает статьи с такой подоплекой мол жили мы хорошо, но наше бесталковое правительсво сделало все, чтобы мы жили плохо (Ngs publishes articles with the main idea that our life was good in the past, but our stupid government has done everything to make it bad now.).*

Conclusion

The algorithmic nature of a language is manifested in the acts of recoding as a process of prognostic interpretation and is adapted to serve the dialogue. Recoding at the level of dialogical unity appears in the recoding of the initial utterance and its dialogical meaning into the form of a response, which is carried out in accordance with different models: agreement, contrast or adjunction models.

The paper highlights two algorithms of text dynamics, manifested in the dialogue: analytical and synthetic. The analytical algorithm determines the segmented image of the next turn, its syntagmatic distancing from the initial utterance. The synthetic algorithm, in contrast, determines the non-segmented image of the next turn, the element of which is the initial utterance. In the first case, the image of the addressee is constitutive, i.e. it is assumed that the addressee is inscribed in a communicative situation. In the second case the image of the addressee is extra-situational, i.e. it is assumed that the addressee is not inscribed in the communicative situation (he/she is not so familiar with the topic under discussion).

We can see that key algorithms of text dynamics correlate with two typological ways of expressing grammatical meaning – analytical and synthetic. The language has analytical and synthetic algorithms, the manifestations of which can be observed on different language levels – not only on the grammatical (syntactic) level but also on the levels of text and discourse.

The attained results clarify the ideas about actualization patterns of a dialogical utterance and the specifics of its genesis.

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Конфликты интересов: у автора нет конфликта интересов для декларации.

Conflicts of Interest: the authors have no conflict of interest to declare.

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РАЗДЕЛ II. ПРИКЛАДНАЯ ЛИНГВИСТИКА SECTION II. APPLIED LINGUISTICS

UDC 81'33

DOI: 10.18413/2313-8912-2022-8-4-0-6

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Boosting Speech-to-Text software potential

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Received 19 July 2022; accepted 12 December 2022; published 30 December 2022



Abstract. The article focuses on finding ways of boosting efficiency and accuracy of Speech-to-Text (STT)-powered input. The effort is triggered by the growing popularity of the software among professional translators, which is in line with the general trend of abandoning typing in favor of speech-to-text applications. Insisting that better effectiveness of such programs is contingent on their accuracy, the researchers analyze major factors, both linguistic and technical in nature, affecting the computer-assisted speech transcribing quality. This leads to an experiment, putting the hypothesis to a test. Based on numerical and performance data, errors and their breakdown into categories in an attempt to figure out their origins, it dwells on various approaches to dictation in a combination with several hardware options and configurations. These pave the way for recommendations on the improvement of STT performance based on the Dragon software. The authors arrive at a conclusion that it is possible to boost the STT accuracy up to 99 percent by adjusting the program profile to accommodate phonetic features of the speaker with due consideration of his accent, adding to the dictionary the most complex and rare vocabulary beforehand, and fine-tuning input hardware. Other noteworthy results include ways to overcome the most complex transcribing challenges, i.e. proper names, placenames, abbreviations, etc.

Keywords: Transcribing; Voice recognition; STT software; Dictation efficiency; Voice properties; Phonetic properties

How to cite: Biktimirov, A. R. and Gruzdev, D. Yu. (2022). Boosting Speech-to-Text software potential, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 72-89. DOI: 10.18413/2313-8912-2022-8-4-0-6

УДК 81`33

DOI: 10.18413/2313-8912-2022-8-4-0-6

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Способы повышения эффективности работы программы
транскрибации речи

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*Статья поступила 19 июля 2022 г.; принята 12 декабря 2022 г.;
опубликована 30 декабря 2022 г.*

Аннотация. Научная статья посвящена поиску способов повышения точности голосового набора текста с помощью программ транскрибации речи. Актуальность исследования обосновывается ростом популярности программного обеспечения (ПО) данного класса среди профессиональных письменных переводчиков, что обуславливает наметившуюся тенденцию перехода от ручного набора текста перевода к диктовке с преобразованием звучащей речи в текст. Авторы отмечают, что повышение продуктивности набора текста через диктовку зависит от точности работы программы распознавания речи. В работе анализируются основные факторы лингвистического и программно-технического характера, оказывающие наибольшее влияние на эффективность преобразования речи в текст компьютером. Для проверки выдвинутых предложений проводится эксперимент, в рамках которого анализируется количество ошибок транскрибации и причины их возникновения при использовании различных видов аппаратного обеспечения и способов диктовки. В результате исследования выявляются и предлагаются пути оптимизации работы с программой транскрибации речи на примере ПО Dragon. Авторы приходят к выводу о возможности повышения точности распознавания речи до 99% путем калибровки профиля программы под фонетические особенности речи с учетом акцента, пополнения пользовательского словаря наиболее сложной и редкоупотребимой лексикой до ввода текста, настройки технических средств голосового ввода. К другим значимым результатам следует отнести предложенные способы преодоления наиболее сложных трудностей транскрибации, таких как имена собственные, топонимы, аббревиатуры и сокращения.

Ключевые слова: Транскрибация речи; Голосовой ввод текста; Программа преобразования речи в текст; Эффективность диктовки; Свойства речи; Фонетические особенности речи

Информация для цитирования: Биктимиров А. Р., Груздев Д. Ю. Способы повышения эффективности работы программы транскрибации речи // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 72-89. DOI: 10.18413/2313-8912-2022-8-4-0-6

Introduction

Automatic voice recognition (AVR) and speech-to-text (STT) software have been gaining popularity exponentially in numerous spheres ever since the introduction of deep learning approaches in the 2000s (Kan et al., 2018). The latter has become an effective alternative to typing in translation, education, business, routine paperwork, and even medicine and police investigations (Ogunshile, Phung & Ramachandran, 2021; Trabelsi, 2022; Kurzekar et al., 2014). Some visionaries in the field even seek ways of integrating the solution in military technologies, in particular C2 systems, no matter how noisy and incoherent communications can get on the battlefield (Cornaggia-Urrighardt et al., 2022).

As handwriting was once abandoned in favor of keyboard, voice input will eventually replace typing. It is already happening for several reasons. First, dictating is faster than typing. Statistically, the rate of normal speech is 120–150 words per minute, while the speed of typing of an average person is around 100 characters per minute (Ibid, 2021). The fact that speech evolves naturally is another argument in favor of the state-of-the-art technology. Second, the advanced stage of the software development provides high quality and desired accuracy even on mobile devices, like smartphones. Many people already take advantage of it to input and send short texts in messengers (Kumar, Gupta & Sapra, 2021; Ogunshile, Phung & Ramachandran, 2021). New projects in this field has a potential not only to step up the effectiveness, but even expand the footprint of the technology application. Programmers have zeroed in on more complex tasks, namely streaming STT for TV-news to accommodate the needs of hearing-impaired citizens or provide online subtitles (Jorge, Giménez, Baquero-Arnal et al., 2021; Perero-Codosero, Juan, Fernando et al., 2022, Kuzmin & Ivanov, 2021). Needless to say, the uncontrolled noise environment inherent in such fields presents a challenge (Montegro et al., 2021). Third, ceaseless projects undertaken to expand the STT

footprint to more languages bring closer the moment of abandoning pens and keyboards in favor of voice inputs as a primary text-making tool (Brucal et al., 2021; Messaoudi et al., 2021).

This said, it is still not natural to talk to a device, demonstrating no signs whatsoever of understanding. The fact makes many new users put unnatural emphasis on pronunciation and articulation in the process of dictation. It just might not make much difference, since computers can distinguish sounds which are not pertinent to a particular language, thus not registered by the native speakers¹. However, stripped of other means of elaboration of the speech, i.e. gesticulations, eye contact, etc., those trying to master the new technology fall back on the need to pronounce words far more accurately, since without this grammar and vocabulary alone, no matter how good they are, will not provide understanding by the recipient of the message (Stubna, 2020). Thus the transition to full-fledged use of STT in routine operations calls for adapting to, for example, the need to spell punctuation marks, which is not natural for human beings, and voice commands to navigate in computer programs. In some areas much more has to be done in terms of integration. In translation it has to do with the major task of conveying the message and de facto replacement of translation with sight interpretation (Gruzdev, Gruzdeva & Makarenko, 2019).

These obstacles do not stop researchers from pursuing far-sighted ideas of mating STT and machine translation (Ma, Nguyen & Ma, 2022). However, as long as translation is still a Human-In-The-Loop trade, the primary focus of the article is on the STT aspect. Since the issue belongs to applied linguistics, it is natural that this field has accumulated considerable practical data, now needed to be sorted out and studied. Modern translators

¹ Harbeck, J. (2015). The subtle sounds that English speakers have trouble catching, *The Week*, retrieved from <https://theweek.com/articles/569137/subtle-sounds-that-english-speakers-have-trouble-catching> (Accessed 14 November 2022).

harnessed the technology several years ago, which is attested by discussions on special forums and the fact that developers of translation software, e.g. computer assisted translation, a.k.a. CAT, advertise the option of mating their products with STT input methods.

Goal

Currently, the number of different types of speech-to-text (STT) software on the market of digital products is growing, as well as their quality and popularity among specialists. Due to the application of the latest technologies there is a steady growth of the productivity of this class of programs and the increase of accuracy up to 99 percent.² This presents a stark contrast to the first attempts at making “Audrey” of the Bell Labs understand numbers in 1952 and some simple words some years later (Deng et al., 2013).

Today, Nuance’s research data shows a three-fold increase in typing speed with STT programs.³ As part of a research on increasing the productivity of translation through dictation, it was concluded that the greatest loss of time comes from post-editing the target text. For this reason, achieving maximum recognition accuracy is considered to be one of the most important aspects of the software application. In this respect, the goal of the paper is to identify the main factors that reduce the accuracy of speech recognition and propose ways to eliminate them.

Materials and methods

In previous studies a comparative analysis of the characteristics and features of the most accessible and popular STT software was conducted. Given the aggregate total of advantages, the choice was made in favor of Dragon by Nuance.

Firstly, from a technical point of view, this software does not have special hardware requirements, is compatible with most operating systems and can run off-line. Therefore, such factors as insufficient

performance or quality of hardware (computer, microphone, voice recorder, etc.), as well as low-speed Internet connection have been excluded.

Second, in terms of functionality, the software comes with such features as a customizable user profile, audio file processing in various formats, an updatable user dictionary, and a voice control and editing interface. This allows the user to improve the accuracy of speech transcribing by individually adjusting the profile (Gruzdev and Biktimirov, 2022).

In order to assess the degree of influence of various factors on the STT quality, a text dictation experiment was conducted to encompass various equipment configurations and operating modes. It was decided to use the 2015 Dragon program produced by Nuance. The translation process was excluded from the experiment to avoid additional cognitive load, preventing a full-fledged assessment of software performance and making the effort to develop recommendations on improving the recognition quality a more complex endeavor. For the dictation, an original English text, 2,735 characters long, was chosen.⁴ Since the efficiency of the transcribing process depends on the ability of hardware and software to perceive and decode speech, more problems are expected with a non-standard vocabulary, which does not constitute a part of the common used lexicon (Nugraha & Dewanti, 2022). To cover this issue, a complicating factor in the form of a large number of placenames and proper names, all foreign to the English culture, was introduced.

Before the experiment, the user profile was calibrated to the phonetic features of the speaker’s speech. The main part of the

² Nuance (2022), retrieved from <https://www.nuance.com/> (Accessed 04 June 2022).

³ Ibid.

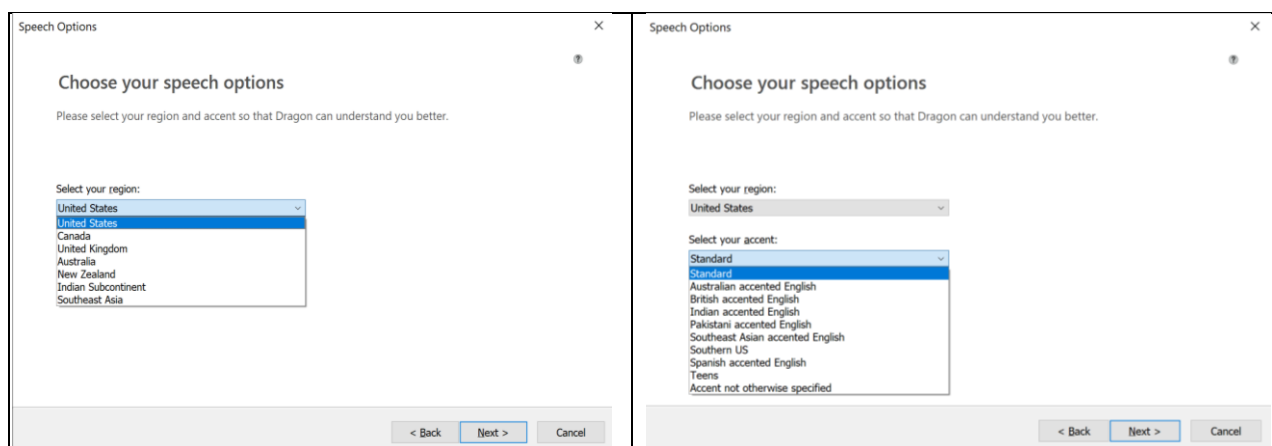
⁴ Hsu, S. S. (2021). Judge rules Afghan militant has been held in Guantánamo illegally, in what lawyers say is the first such ruling in 10 years, *The Washington Post*, retrieved from https://www.washingtonpost.com/local/legal-issues/guantanamo-bay-detainee-held-illegally/2021/10/21/1a54245e-31c2-11ec-9241-aad8e48f01ff_story.html (Accessed 25 February 2022).

procedure was reading of a passage. This was preceded by adjustments done to the extent of choosing the region and accent (see Figure 1). However, there are no suitable settings among

the offered options, reflecting Russian-accent in the English language. Thus, it was decided to use the British variant of the English pronunciation.

Figure 1. Dragon speech settings

Рисунок 1. Выбор региона и акцента для калибровки программы «Дрэгон»



In order to assess the impact of several types of input hardware on the quality of the program it was decided to use a professional microphone, a digital voice recorder, and a smartphone. The text was dictated twice into the microphone, recorder and smartphone, after which the results were subjected to analysis of the influence of extraneous noise, dictation tempo and diction on the accuracy of speech recognition. First, the text was read to all of the indicated assets with an emphasis on clear pronunciation while disregarding speed. The procedure was then repeated at a faster rate of about 100 words per minute. No corrections or pauses were allowed.

Several factors led to the choice of the selected means of input. First, the microphone option replaces only one tool of a modern translator, namely the keyboard, preventing profound adjustments to the general translating procedures. Second, the intention to use a voice recorder is accounted by the need to test the functionality of recorded audio transcribing feature, which distinguishes Dragon from most of this software class. Third, in case of good performance, the smartphone as the main audio recording tool in hand today would be

worth considering in the translation strategy, replacing typing on the keyboard with dictation.

When doing streaming STT, particular attention was paid to avoiding microphone-assisted corrections, as such attempts could result in significantly longer dictation time and complete loss of usefulness of the alternative input method. In all dictation options, voice commands for punctuation marks were not voiced, which provided grounds for testing the effectiveness of the automatic punctuation feature.

Statistical analysis

For a general picture of the software effectiveness, it is required to provide statistics first. The STT accuracy was calculated based on the ratio of mistakenly recognized words to the total length of the text. The results of the experiment are in Table 1.

Given the slight difference in speech recognition quality achieved at fast and slow dictation rates, it was decided to base further analysis on the variants with the lowest tempo readings in each of the three subgroups. The choice was made in view of the main goal of maximizing the performance of the translator using the alternative input method.

Table 1. STT performance, conditioned by the speech rate and input equipment

Таблица 1. Анализ результатов транскрибации в зависимости от темпа речи и применяемого типа аппаратного обеспечения

No. seq.	Test phase	Results			
		Characters, no spaces/words	Dictating/recording processing (min:sec)	Speech rate (word/min)	Errors (%)
0	Original text	2,735/550	-	-	-
1	1 Mic-assisted, articulated	2,665/547	6:46/-	81	40 (7%)
	2 Mic-assisted, moderate speed	2,659/550	6:32/-	83	38 (7%)
2	1 Recorder, articulated	2,705/554	5:54/0:22 (6:16)	94	28 (5%)
	2 Recorder, moderate speed	2,725/557	5:44/0:21 (6:05)	97	33 (6%)
3	1 Smartphone, articulated	2,615/546	5:54/0:22 (6:16)	94	34 (6%)
	2 Smartphone, moderate speed	2,705/558	5:44/0:21 (6:05)	97	31 (6%)

The analysis of the texts revealed a pattern of errors in terms of where they appear in the text and their density. In order to confirm the finding, error plots were made for each text using the AntConc program (see Table 2).⁵

It follows from the plots that the error density is almost the same in all dictation options, mostly found in paragraphs with proper names, which are a particular issue for the software due to the poor standardization of spelling. The situation with names of foreign origin is more complex (see Appendix 1).

In the highlighted passages there are also errors of another nature, but they are in no way related to the presence of a large number of proper names. No accumulation of errors due to uncommon collocations has been observed. Correct pronunciation of the lexical units following a mistakenly

transcribed word reduces the probability of distortions. The increased density of errors is accounted for by difficulties with the pronunciation of proper names, which requires better concentration, while the recovery of the speech organs and their return to normal functioning in conditions of reproduction of unfamiliar sounds does not occur immediately. As a result, some sounds which are not pertinent to the pronounced words, transpire, laying the ground for incorrect STT performance.

It comes from the comparison of the STT results that the microphone input quality is inferior to recorder- and smartphone-powered transcribing options. In some cases, the smartphone proved to be the most effective tool. After listening to the voice data, it was established that the microphone and recorder sound tracks are less stable; the sound progresses in waves, fades or increases sharply, after which it recovers to normal values. Such areas of the recordings coincide with the main zones of errors made during transcribing.

⁵ Anthony, L. (2020). AntConc (3.5.9) [Computer Software]. Tokyo, Japan: Waseda University, retrieved from <https://www.laurenceanthony.net/software> (Accessed 15 February 2022).

Table 2. STT error plots

Таблица 2. Графический анализ распределения ошибок в текстах, набранных методом транскрибации


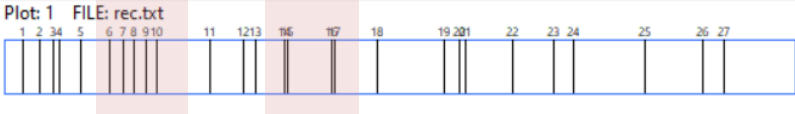

Error quantity	Error plot	Input method
Lapses: 7 Errors: 32	Plot: 1 FILE: mic.txt 	mic
Lapses: 7 Errors: 39	Plot: 1 FILE: rec.txt 	recorder
Lapses: 3 Errors: 31	Plot: 1 FILE: smart.txt 	smartphone
<div>Annex 1 Exerpt 1</div> <div>Annex 1 Exerpt 2</div>		

Figure 2. Hypercardioid directional pattern

Рисунок 2. Гиперкардиоидная диаграмма направленности



The studio microphone and the semi-professional voice recorder used in the experiment possess all properties and characteristics needed to perceive all changes in the voice flow. Both instruments are directional, i.e., they pick the signal in a narrow area, which makes them less sensitive

to surrounding sounds (see Figure 2).⁶ At the same time, the slightest jumps in tone, tempo, and strength, which were observed in segments of texts with numerous proper names, will also be registered, increasing the chances of STT errors.

⁶ Mic direction patterns, retrieved from <https://gs-corp.ru/articles/articles/Mic-direction-info/> (Accessed 11 May 2022).

The waveforms generated by Audacity allowed to establish the relationship between the unstable audio signal and the occurrence of errors in the text (see Table 3).⁷ In the selected segments captured on the recorder, sharp spikes in signal strength were observed in the pronunciation of incorrectly transcribed words. Errors are registered not only in the words corresponding to the spikes in waveforms, but in neighboring lexical units as well.

At the same time, inadvertent voice sounds do not always lead to distortions in the typed text. In a number of cases, incorrectly started words followed by correct

pronunciation or unintentional attempts to insert non-existent prepositions did not result in transcribing errors (see Figure 3). In the waveform of the passage "to comment" the inadvertently voiced preposition <of> was registered, which was not added by the program to the text. It should be noted that the trend is observed in cases where the power of the sound signal is insignificant. When the signal peaks above the strength threshold, the program begins to process the incoming information, which leads to the conversion of the erroneously pronounced sounds into written text.

Table 3. Recorder- and smartphone-based waveform of the phrase "classified opinions on"

Таблица 3. Волноформы фразы "classified opinions on", сгенерированных из записей на диктофон и смартфон

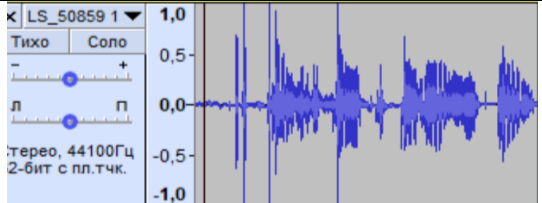
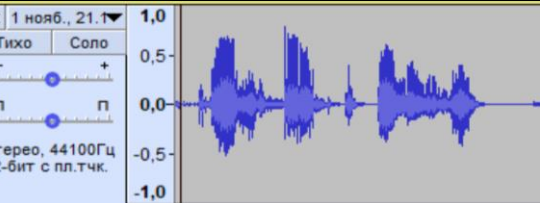
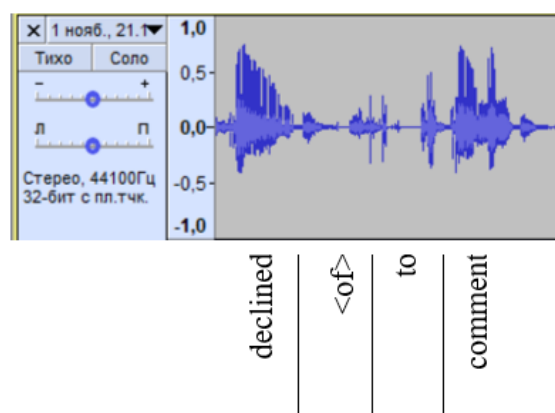
Recorder				Smartphone			
							
classified				classified			
opinions				opinions			
on				on			
classify(ied) convenience on				classified opinions on			

Figure 3. Smartphone-based waveform of the phrase "declined to comment"

Рисунок 3. Волноформа фразы "declined to comment", сгенерированной из записей на смартфон



⁷ Audacity Team (2021). Audacity(R): Free Audio Editor and Recorder [Computer application]. Version 3.0.0 retrieved March 17, 2021, retrieved from <https://audacityteam.org/> (Accessed 5 April 2022).

Another disruptive factor introduced with the replacement of the familiar keyboard with voice input is the need to pronounce punctuation marks. Due to the natural replacement of punctuation by intonation in spoken language, the need to voice punctuation leads to inconveniences that distract from conveying the message and complicate the process of information reproduction (Kol'a'r & Lamel, 2012). In this paper, the task of voicing punctuation marks was ignored by design only to evaluate the automatic punctuation feature, thus the errors of this nature were not considered in the overall statistics. The program managed to place dots and commas automatically with a moderate number of errors (see Appendix 1). Other punctuation marks, such as brackets, dashes, etc., were not implemented in the printed text. In view of this, it does not seem appropriate to consider this function as a complete automating punctuation solution in voice typing. However, the text becomes more readable, which speeds up post-editing (Kol'a'r & Lamel, 2012). The use of the function is limited to recording transcribing.⁸ Streaming input is not supported.

For a more in-depth study of STT errors, finding and identifying ways to eliminate them, it is necessary to perform their qualitative analysis in the selected passages in Appendix 1.

Qualitative analysis

STT errors are accounted for by the fact that the software in question is designed to decode the flow of spoken speech into written form. The underling factors range from linguistic features of the language to human factors. Errors are by no means chaotic. By categorizing the causes, it will be possible to eventually reduce the number. As a result, five categories were identified, namely: (1) homophones, (2) hesitation and delimitation, (3) incorrect pronunciation, (4) proper names, (5) other errors (see Table 4).

The first thing to remember is that STT software is a set of algorithms. Not able to

understand to take into consideration all factors of spoken language, the software can never demonstrate 100% accuracy when decoding homophones: won/ [wʌn] - one, two/ [tu:] - to, their/ [ðeə] - there, court/ [kɔ:t] - caught, counsel/ ['kaʊnsəl] - council (see Appendix 1) (Pernarčić, 2019). It is these errors that make up the first category. Due to the nature of the English language, this group also includes nouns, sounding similarly in the plural and possessive forms. This said, it is worth noting the insignificant number of errors caused by phonetic ambiguity. Most cases were caused by the low frequency of use in the language and the lack of a clear contextual ties of the words to their immediate surrounding. For example, the numeral *two* and noun in the plural form *opinions* are wedged by the adjective *classified*, which was incorrectly decoded by the program as a verb in the infinitive form. As a result, the numeral turned into the particle *to*. The British National Corpus provides no matches of the sought collocation.

Parasitic speech sounds caused 1.5 times as many errors as were registered in the previous group. Loud sounds, for example, hm..., um..., etc, sharp and deep breaths and exhalations, as well as background sounds caused spontaneous insertions of articles, prepositions and pronouns in the printed text. The appearance of irrelevant text elements or the omission of deliberately pronounced units is accounted for by the sound threshold, i.e., a certain signal strength when the program begins to decode the input. Poorly articulated words with a volume lower than the main stream of speech leads to the fact that the program perceives the incoming information as noise. This tendency is evident when comparing waveforms of passages with indefinite articles (see Figures 4 and 5). In the first case, the article is clearly detected with sufficient signal strength, while in Figure 5 there is a signal, barely visible on the waveform, that has not been processed by the program.

⁸ Nuance.

Table 4. STT errors breakdown

Таблица 4. Распределение ошибок транскрибации речи в зависимости от способа ввода

Input method	Errors						Error rate, %
	Homophones	Hesitation and delimitation	Accent-generated errors	Proper nouns	Other	TOTAL	
Mic	4	7	4	19	4	38	7%
Recorder	3	8	4	18	0	33	6%
Smartphone	4	5	3	19	0	31	6%

Figure 4. Smartphone-based waveform of the phrase “a former [Afghan militant]”

Рисунок 4. Волноформа фразы “a former [Afghan militant]”, сгенерированной из записей на смартфон

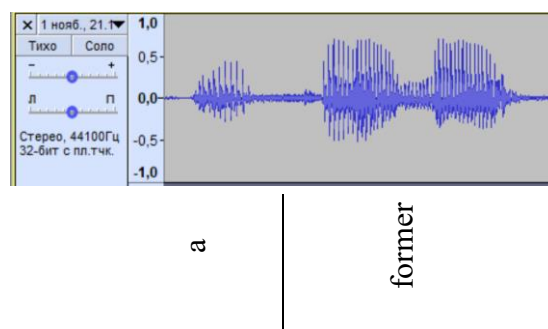
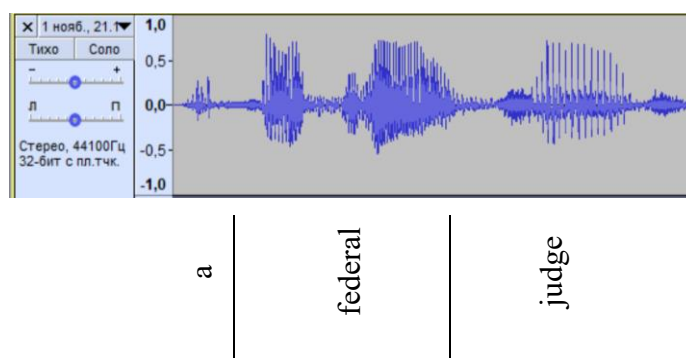


Figure 5. Smartphone-based waveform of the phrase “<a> federal judge”

Рисунок 5. Волноформа фразы “<a> federal judge”, сгенерированной из записей на смартфон

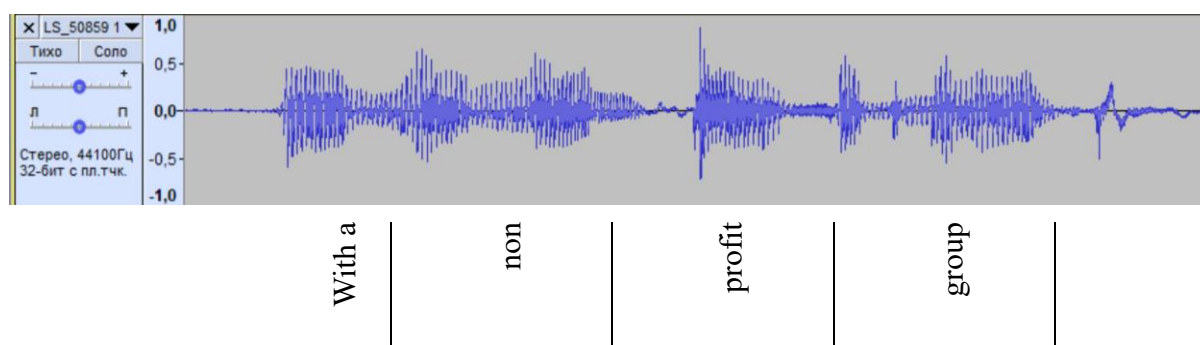


In addition to numerous hesitation pauses, the second category includes delimitation errors caused by incorrect definition of word boundaries by the software (Belitskaya, 2014). For example, as a result of a subtle pause between the preposition and

article during the pronunciation of the phrase “...with a nonprofit group...” (pronounced [wɪð-ə---nɒn'prɒfɪt---gru:p]) the combination of the preposition *with* and article *a* triggered the substitution of *a* with *the* (see Figure 6).

Figure 6. Smartphone-based waveform of the phrase “with a nonprofit group”

Рисунок 6. Волноформа фразы “with a nonprofit group”, сгенерированной из записей на смартфон

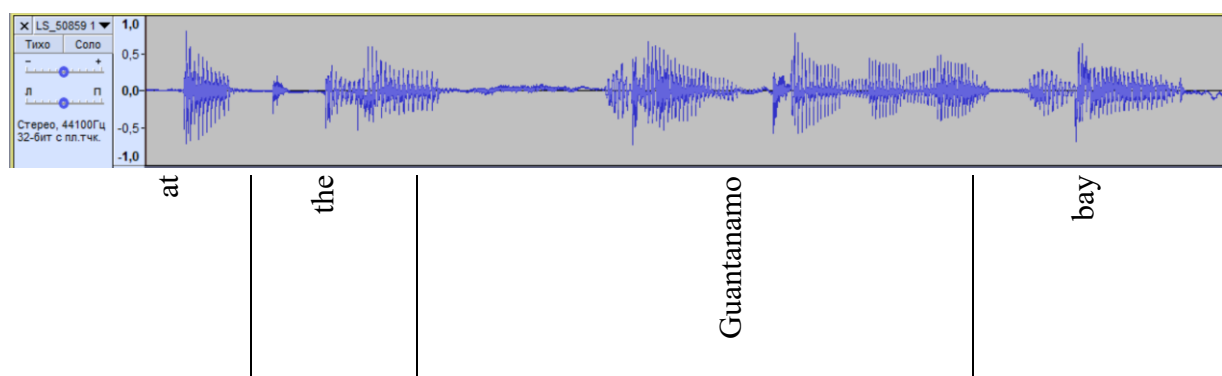


It follows from the analysis of the recordings and waveforms of the sections of texts where incorrect transcribing of the definite article was registered that in most of the cases it was pronounced [ðə]. When the

article assumed its strong phonetic form [ði:] such a problem was not observed (see Figure 7). Missing articles situations are due to the predominance of the weak form in the general speech.

Figure 7. Smartphone-based waveform of the phrase “at the Guantanamo Bay”

Рисунок 7. Волноформа фразы “ at the Guantanamo Bay”, сгенерированной из записей на смартфон



Hesitations are also a consequence of the natural desire to follow the graphical result on the PC monitor when doing STT into the microphone. As a result, the translator is distracted from the main task, and the delayed processing of the voice signal disrupts the dictation tempo, forcing the translator to stop in the middle of a sentence, which affects the integrity of the text. Thus, editing during translation should be done after finishing a meaningful text segment, such as a paragraph. On the other hand, increasing pace leads to loss of information. It will be more expedient

to maintain an optimal speech rate, which allows articulating all the sounds.

Hesitation pauses between sentences or meaningful text parts can be eliminated by means of the press-to-talk (PTT) feature on the input device. The Dragon manufacturer has made this available in its standard microphones. The recorder also allows to adopt a similar strategy by using the PAUSE key.

Pronunciation, typical for the variant of the English language other than the one selected in the profile settings, also caused a number of errors. For example, the phrase

final order is transcribed with significant errors, *final oral*, *final quarter*. This is accounted for by the sound [r] ([ˈfain(ə)l ˈɔːrdə]), tended to be reduced in the British

version ([ˈfain(ə)l ˈɔːdə]) (see Figure 8). In view of the obvious trend, it was decided to group these STT inaccuracies into a separate category.

Figure 8. Pronunciation of the word *order* in the Cambridge Dictionary

Рисунок 8. Транскрипция английского слова *order* в Кембриджском словаре



It is worth noting the complex nature of individual cases in the category. Thus, when processing the word *necessitates*, voiced according to the American English standards [nəˈsesəˌtets] instead of the pronunciation adopted in British English [nɪˈsesɪtɪts], the program typed the noun *necessity* in one instance. In another iteration this led to a

delimitation error, resulting in three words *and assists dates*. Both cases were detected in texts dictated at a slow rate. As the dictation speed increased, the number of errors in processing complex words pronounced in accordance with the phonetic norms of the other variant of English decreased (see Table 5).

Table 5. American accent-provoked errors

Таблица 5. Ошибки, вызванные произношением по нормам американского варианта английского языка

Original	Mic	Smartphone	Speech rate
Lawyers for those detainees say their continued detention despite having been cleared necessitates action by a court.	lawyers for those detainees see their continued detention despite having been clear(ed necessitates) action by the court	Lawyers for those detainees say they are conducted detention despite having been cleared necessitates action by a court	Moderate
	lawyers for those detainees see the continued detention despite having been cleared necessity action by the court	Lawyers for those detainees say there conducted detention despite having been cleared and assists dates action by a court	Low

The analysis of this category of errors suggests that it is possible to reduce their number by increasing the clarity of speech, correcting pronunciation in accordance with the phonetic norms of the selected language variant, articulating word endings. No less important is the correct calibration of the user profile, with due consideration of the accent.

Most of the aggregate total STT errors, incorrect spelling of proper names has been registered in each of the input options. There have been significantly fewer errors registered in proper names of European origin than Oriental or Asian names (Khan, Asadullah Haroon Gul, Amit P. Mehta). As a result, *Khan* became *hand*, *can*, *clan*, and *town*, and

Asadullah Haroon Gul turned into *la blue girl*, *are circular her own gulf*, and *I supply her own gal*. More euphonious names for English speakers – Roman, Tara, Alex Brandon, Mark Meyer, Asad, Biden, etc. – were typed by the program correctly in most cases. One way to eliminate errors of this nature is to take advantage of Dragon's special feature, its open vocabulary. If a certain name is used frequently in a text, it is advisable to add it to the user database in advance. For single cases, a more effective and faster solution would be its omission or descriptive rendering based on the function performed by the person, his position or role in the described situation (see Table 6).

Table 6. Real-time STT dictation

Таблица 6. Голосовой ввод через микрофон в режиме реального времени

Proper names kept	Proper names replaced
earlier this month in a separate proceeding the US government determined that it was safe to transfer <u>well</u> who has never been charged with a crime out of Guantánamo he is among 13 men who have been recommended for transfer by the multi agency periodic review board PRB on the basis that they are not considered to pose a threat to US national security	Earlier this month in a separate proceeding the United States government determined that it was safe to transfer <u>the prisoner</u> who has never been charged with a crime out of Guantánamo. He is among 13 men who have been documented for transfer by the multiagency periodic review Board on the basis that they are not considered to pose a threat to US national security.

Ad-hoc acronyms and abbreviations, which are not uncommon especially in science and engineering, can also be subject to incorrect transcription due to their absence in the vocabulary (Chistova, 2021). In this case, potentially complex acronyms and abbreviations should be added to the profile database or replaced with a striking, out-of-the-context substitute word to be edited or changed to the necessary lexical unit through the auto-replacement function of the text editor.

A number of errors have not been assigned to any of the highlighted categories. Though no phonetic norms were broken, each of these turned up only once in one of the six STT variants: *Afghan refugee* ['æfgæn ,refjʊ'dʒi:] - *and come refugee, the opinion* [ði: ə'pɪnjən] - *their pinion, classified opinion* [ə'pɪniənz] - *classified convenience, Biden's troop* [tru:p] - *Biden's group*. However, the recordings unveiled unstable sound quality in most cases, which probably led to the errors. Considering their singular character, they

have an insignificant impact on the overall statistics.

Most of the identified problems can be solved by approaching the issue from two general perspectives. First, the input devices and software should be adjusted. Secondly, it is necessary to maintain an optimal speech rate at which it is possible to ensure articulation of all elements of the text, including endings and service parts of speech, often weakened in speech due to their auxiliary functions in the sentence. An important role is assigned to signal clarity, free from hesitations and noises.

Corrections

To check the suggestions for improving the STT quality, another text was picked containing terminology and proper nouns. The equipment was adjusted and fine-tuned with all necessary preparations done beforehand.⁹ First, the sensitivity of the voice input devices was reduced and a noise filter was enabled in the settings. Second, the most difficult and rarely used vocabulary was identified to

include special terms, abbreviations, acronyms, company names and proper nouns and added to the user vocabulary.

When dictating, due considerations were given to the English variant, to which the profile was set, focusing on the proper pronunciation of articles, prepositions and word endings.

The milestone text was divided into three equal segments. The first segment was dictated through a microphone, while the second and third were recorded on the smartphone and recorder, respectively. The STT accuracy grew to 99 percent (see Table 7).

The recordings confirmed that all errors resulted from incorrect pronunciation, mostly due to ignoring vowels in stressed syllables. After fine-tuning of the equipment and vocabulary preparation the transcribing efficiency improved significantly, which has been established through a comparative analysis of the quantitative readings accumulated in both phases of the experiment (see Figure 9).

Table 7. Milestone STT statistics, based on lessons learned

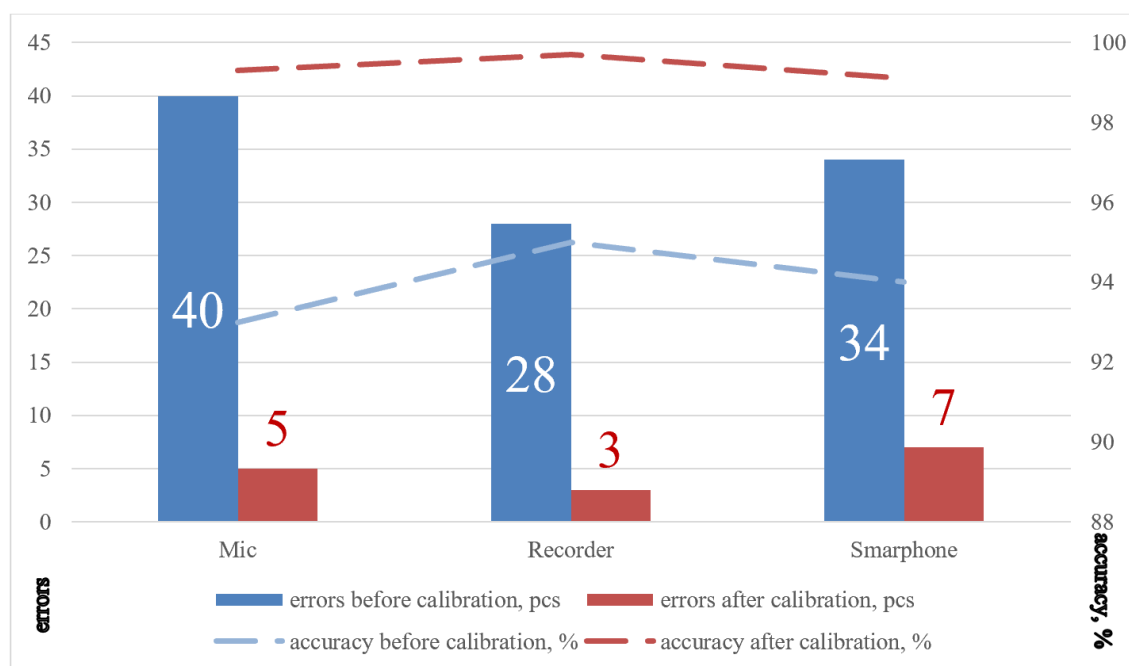
Таблица 7. Статистика транскрибации речи при диктовке контрольного текста

Input method	Results		
	Words	Errors	Accuracy, %
Mic	672	5	99.3%
Smartphone	727	7	99.1%
Recorder	907	3	99.7%
TOTAL	2,306	15	99.4%

⁹ Antonov, N. (2017). Let there be light... lidar, *Top War*, retrieved from <https://en.topwar.ru/125104-da-budet-svet-lidara.html> (Accessed 20 February 2022).

Figure 9. Setting- and calibration-based comparative analysis of STT accuracy

Рисунок 9. Сравнительный анализ эффективности транскрибации с учетом базовых настроек и калибровки



Conclusions

The research shortlists major linguistic and software factors that have the greatest impact on the STT accuracy. Based on the experimental data, recommendations were made to improve the efficiency of this class of software and boost its accuracy to 99 percent. Firstly, it is possible to use different input devices without incurring significant losses in the quality. However, the minimum number of errors was registered when a professional digital voice recorder was used, provided all hard- and software adjusted and fine-tuned. Transcribing a recording proved to be a faster option than streaming voice data into a microphone, as text visualization kept distracting from the main task, provoking unwanted hesitations and delimitation errors, acting as “speed bumps” to the tempo. Second, attention should be paid to maintaining an optimal speech rate that will allow all sounds to be articulated. Acceleration above the average tempo inevitably leads to more errors and omissions. In this regard, it is necessary to note a lower susceptibility of wired systems to interference

and, by implications, losses of voice data. The use of wireless technology also provides good capturing of the audio stream, although inconsistent at times. On the other hand, an extremely slow rate will lead to an increased number of delimitation errors. Third, accuracy can also be boosted through the adjustment of input devices. Setting the sensitivity of the microphone or recorder correctly will reduce background noise. However, a significant drop in sensitivity can lead to the omission of short parts of speech when they are pronounced at a volume lower than that of the main stream. Some devices, such as smartphones, lack such adjustments and tuning options. Fourthly, the program is based on the analog principle of audio input processing, thus the avalanche-like generation of errors is an unlikely scenario. Nevertheless, the STT texts have pockets of inaccurately transcribed words and their combinations. As a rule, such strings of errors are triggered by a word, pronunciation of which is not typical for the phonetic system of the language. Destabilization of the vocal organs leads to jumps in the strength of the incoming signal

and rate of speech, causing a detrimental effect on the quality of data registration. Fifth, the vocabulary with destabilizing potential includes long proper names, especially with complex phonetics, specialized abbreviations and acronyms. They account for more than 50 percent of all errors. Adding them to the user vocabulary in advance will step up the overall efficiency. For rare cases, it is advisable to replace phonetically complex units with a substitution word that will attract the attention at the editing stage, or implement them in the text descriptively, e.g., through their roles or functions assigned in the described situation. Sixth, if there are several variants of the language, their phonetic systems should not interfere with each other. This aspect should also be considered when performing the initial setting of the profile. Seventh, automatic punctuation is only available in the recording transcribing mode. Because of the functionality limited to two symbols, the dot and comma, the range of potential users of the tool is narrowed down to the beginner group, who will find it difficult to immediately adjust to the need to voice punctuation marks. With practice, the computer-assisted approach can be replaced with voice input.

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Appendix

Excerpts with the greatest number of errors

Original	Mic	Smartphone	Recorder
A federal judge has found that a former Afghan militant has been held unlawfully at the Guantánamo Bay detention camp, the first time in 10 years that a detainee has won such a case against the U.S. government, his lawyers said.	A federal judge has found that (a) former Afghan militant has been held unlawfully at (the) Guantánamo Bay detention camp the first time in 10 years that ADD has one such a case against the US government his lawyers said	(A) federal judge has found that a former Afghan militant has been held unlawfully at the Guantánamo Bay detention camp. The first time in 10 years that (a) detainee has one such (a) case against the US government. His lawyers said	a federal judge has found that (a) former Afghan militant has been held unlawfully at the Guantánamo Bay detention camp, the first time in 10 years that (a) detainee has won such a case against the US government. She is, lawyers said
U.S. District Judge Amit P. Mehta in Washington on Tuesday entered a final order and two classified opinions on Asadullah Haroon Gul's petition for a writ of habeas corpus and immediate release, court	US district judge Annie eat nectar in Washington on Tuesday entered the final oral and two classify opinions on a similar dance petition for a writ of habeas (cor)opus and immediate release caught filings	US District Judge Annie Pat met in Washington on Tuesday entered the final order and to classified opinions on a similar Korean gals petition for a writ of habeas corpus and immediate release court	US district judge. I need be nectar in Washington on Tuesday entered the final order and to classify(ied) convenience on this underlying her own gal's petition for a writ of habeas corpus and

filings confirmed, without disclosing their contents.	confirmed without disclosing their contents	filings confirmed without disclosing their contents.	immediate release court filings confirmed without disclosing the contents
<p>The control tower is seen through the razor wire inside the Camp VI detention facility in Guantánamo Bay Naval Base, Cuba. (Alex Brandon/AP)</p> <p>Gul's counsel Mark Maher, with the nonprofit group Reprieve, said the lawyers were thrilled for their client.</p>	<p>the control tower is seen through the razor wire inside the camp six Detention facility in Guantanamo Bay_naval base Cuba Alex Brendan /AP</p> <p>Gulf Council Mark Meyer (with) the nonprofit group green said (the) lawyers were thrilled for their client</p>	<p>the control tower is seen through the razor wire inside the camp six detention facility in Guantánamo Bay naval base (in) Cuba, Alex Brandon/AP</p> <p>gal's counsel Mark Meyer with a non-profit group reprieve, said the lawyers were thrilled for their client,</p>	<p>the control tower is seen through the razor wire inside the camp VI detention facility in Guantánamo Bay naval base, Cuba, Alex Brendan/AP</p> <p>Gulf Council, Mark Meyer, with the nonprofit group reprieve, said the lawyers were thrilled for their client,</p>

Конфликты интересов: у автора нет конфликта интересов для декларации.




Conflicts of Interest: the authors have no conflict of interest to declare.

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UDC 811.111'367.7

DOI: 10.18413/2313-8912-2022-8-4-0-7

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English possessives and the definiteness effect in there-sentences:
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Received 12 May 2022; accepted 09 December 2022; published 30 December 2022




Abstract. This paper investigates one of the instances of the definiteness effect: the access of the prenominal possessives “my/your/its/her/his/their/our” to the postverbal noun phrases in existential there-sentences. The definiteness effect is still one of the most topical and controversial problems to discuss. The existing studies of the definiteness effect are centred on the definite article and skip the prenominal possessives. Considered as strong determiners the prenominal possessives can occur in existential contexts under certain conditions. The corpus-based analysis results in fixing these licensing conditions. We suggest that it is the enumeration and not the definiteness/indefiniteness distinction that sets the constraints for this licensing. We assume that being scalar-neutral elements the possessives support the listing contexts at any stage of the enumeration process: at the beginning, in midstream or at the final point summing up the previous ideas. The enumeration process is associated with pointing the location of the mentioned objects, which in turn supports the deictic meaning inherent in existential sentences with possessive postverbal noun phrases. The scheme constructing the unified meaning of there-sentences with possessive pivots covers four features: existence, enumeration, location and deixis. It is enumeration that ultimately turns out to be the necessary licensing condition.

Keywords: Definiteness effect; Possessives; Determiners; Deixis

How to cite: Dolmatova, O. V., Getmanskaya, M. Y. and Razduyev, A. V. (2022). English possessives and the definiteness effect in there-sentences: a corpus-based study, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 90-104. DOI: 10.18413/2313-8912-2022-8-4-0-7

УДК 811.111'367.7

DOI: 10.18413/2313-8912-2022-8-4-0-7

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**Притяжательные детерминативы и эффект определённости
в английских экзистенциальных предложениях:
корпусное исследование**

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*Статья поступила 12 мая 2022 г.; принята 09 декабря 2022 г.;
опубликована 30 декабря 2022 г.*

Аннотация. В статье исследуется один из случаев эффекта определенности: допуск английских притяжательных детерминативов “my/your/its/her/his/their/our”/ «мой/ваш/его/ее/его/их/наш» в посткопулярной именной группе экзистенциальных предложений “there-sentences”. Эффект определенности до сих пор остается одной из самых актуальных и дискуссионных проблем современной лингвистики. Притяжательные детерминативы наряду с другими так называемыми «сильными» детерминативами, определенным артиклем the, квантификаторами all, every, указательными детерминативами this/these и that/those имеют некоторые ограничения на допуск в посткопулярную позицию экзистенциальных предложений. Однако существующие исследования эффекта определенности сосредоточены на определенном артикле и не предоставляют информации о вариантах с притяжательными детерминативами. Анализ данных Британского национального корпуса позволил выявить условие допуска притяжательных детерминативов в указанную позицию. Таковым оказалось обязательное участие в перечисляющих контекстах. Будучи скалярно-нейтральными элементами притяжательные детерминативы поддерживают контексты перечисления на любом этапе этого процесса: при вводе счета, при собственно счете и при подведении итога перечисления, суммируя предыдущие идеи. Процесс перечисления связан с указанием на локации упоминаемых объектов, что в свою очередь поддерживает дейктическое значение, присущее экзистенциальным предложениям с притяжательными посткопулярными именными группами. Общее значение экзистенциального предложения с притяжательным детерминативом в посткопулярной именной группе обеспечивается следующими характеристиками: существование объекта по умолчанию, перечисление, указание на локацию, дейксис. Обязательным лицензирующим условием для доступа притяжательных детерминативов в

конструкцию является перечисление.

Ключевые слова: Эффект определенности; Детерминативы; Притяжательные детерминативы; Дейксис

Информация для цитирования: Долматова О. В., Гетманская М. Ю., Раздудев А. В. Притяжательные детерминативы и эффект определённости в английских экзистенциальных предложениях: корпусное исследование // Научный результат. Вопросы теоретической и прикладной лингвистики. 2022. Т. 8. № 4. С. 90-104. DOI: 10.18413/2313-8912-2022-8-4-0-7

Introduction

Since J. Milsark (1979), the definiteness effect in English existential *there*-sentences refers to the restriction that not all the determiners may be built into the postverbal noun phrases (pivots). He suggested that the definite article, the universal quantifiers “all, every, each”, the quantifier “most”, possessives and demonstratives should be excluded from this position as they cannot indicate the size of the set denoted by their nouns. Thus, the ability to express quantity of some kind can be regarded as a sort of access to this particular position. This restriction has become the basis for dividing the determiners into strong and weak (excluded and admitted to the position, respectively). The following examples show this difference:

(1) a. There was a man.

b. There are some/several/many/three policemen.

(2) ?? a. There was the man.

?? b. There is my uncle.

?? c. There is every man.

?? d. There are all books.

The definiteness effect has a long and rich history (Milsark, 1977; Safir, 1982; Hannay, 1985; Reuland and ter Meulen, 1987; Lumsden, 1988; Freeze, 1992; McNally, 1997, 1998; Hazout, 2004; Sorrenti, 2015; Bassaganyas, McNally, 2020). The comprehensive overviews can be found in (Francez, 2007; McNally, 2016) *inter alia*.

The definiteness effect has gained a great popularity, it has been studied on the English data (Abbott, 1993; Barwise and Cooper, 1981; Beaver, Frances and Levinson, 2005; Keenan, 2003; McNally 1998; Zucchi, 1995), on the material of other languages, for example, Catalan (Villalba, 2016; Leonetti,

2008), Icelandic (Norris, 2011), Hungarian (Peredy, 2009), Spanish (Rodriguez-Mondonedo, 2007), Korean (Chang and Mikkelsen, 2005), Sardinian (Bentley, 2004), French, Italian, Brazilian and European Portuguese, some Italo-Romance dialects, Galician, Romanian (Bentley, 2013), Danish (Mikkelsen, 2002), Russian (Paducheva, 2003), as well as in a typological perspective (Mc Nally, 2016). It has been observed by many others that this restriction has some exceptions (Erdmann, 1976; Rando and Napoli, 1978; Ziv, 1982; Woisetschlaeger, 1983; Holmback, 1984; Hannay, 1985; Lumsden, 1988; Prince 1988, 1992; Abbott, 1992, 1997, 2014; Keenan, 2003; Hartmann, 2013). The above-mentioned studies are concentrated on the definite article for the most part, restrictions on universal quantifiers “all, every” in postcopular noun phrases are given in details in (Dolmatova, 2016; 2019).

Postcopular possessive noun phrases have not received much attention yet. The paper adds to the empirical basis of the exceptional cases by introducing the data via the British National Corpus. Corpus data provide sufficient number of natural language contexts to justify the possible exceptions to the definiteness effect. Milsark's theory is initially based on isolated sentences with no or little context. Access to the pivot position was then governed by the determiners' ability to express quantity. Possessive determiners do not express quantity but do occur in the pivot position. We aim to overcome this contradiction and to find the constraint licensing possessive pivots. We shall try to fulfil the task by analysing the contexts, describing them, classifying their types and subtypes. Correlating semantic features of

there-sentences and possessive pivots via pragmatics of the whole contexts adds up to the task.

Materials and methods

The research material is presented by the British National Corpus (BNC). We opt for the BNC because it is the “oldest” (updating the Corpus was over in 1993), the smallest (as opposed to other large corpora, e.g. Corpus of Contemporary American English or News on the Web Corpus) and it does not exploit World Englishes as News on the Web Corpus does. Thus, we need it as a prototypical corpus (if we may call it this way).

As per the definiteness effect, possessives are excluded from post-verbal noun phrases in *there*-sentences. The corpus data do not support this theoretical prohibition. The total number of tokens is 405. We use quantitative and qualitative methods as it is a regular procedure for the corpus-based studies (Biber, Conrad and Reppen, 2004; Leech *et al.*, 2012; Dubovsky and Zagraevskaya, 2019; Axelrood and Brodskaya, 2020; Makoeva, Tishchenko and Getmanskaya, 2021): counting, semantic decomposition, descriptive method, interpretative analysis. We are planning to describe and explain the range of communicative contexts for the whole construction with regard to the semantics of the existential constructions and possessives.

Results

Possessives in postverbal noun phrases in English *there*-sentences

BNC gives 405 *there*-sentences with possessive noun phrases as pivots. For the most part this construction includes two main constituents: expletive *there* with copula and a pivot – a postcopular noun phrase with a possessive pronoun “*my, your, our, his, her, their*”. Usually there is no coda in these

sentences. The exceptions are rare; there are 35 tokens with the coda out of 405. And these constructions are not of great variety. There are only five types of them (not many if compared with 15 types of the coda for postcopular noun phrases with universal quantifier “*all*”). We shall use the following notations here: EXPLETIVE stands for “*there*”, COPULA – “*be*”, PIVOT – postcopular noun phrases, CODA – the phrase after the pivot nominal, Vpp – 3d form of the verb, Ving – ing-form of the verb, Vinf – infinitive, PP – prepositional phrase.

(3) EXPLETIVE + COPULA + PIVOT
+ CODA – Clause: Vpp + PP

There was his name written in the corner.

(4) EXPLETIVE + COPULA + PIVOT
+ CODA – Locative (AdvP or PP)

There's your mother there.

There's my son in the crowd.

There was my plate on the wall beside me.

(5) EXPLETIVE + COPULA + PIVOT
+ CODA – (THAT) CLAUSE

There's my boat that I made with my two hands.

There's my Smith's tapes you never wanted to hear.

(6) EXPLETIVE + COPULA + PIVOT
+ CODA – Ving

There's my little clerk sniggering away.

(7) EXPLETIVE + COPULA + PIVOT
+ CODA – Vinf

There's your tractor to do.

There was my family to look after.

As stated by A. Zucchi (1995:56), A. Bende-Farkas and H. Kamp (2001: 125) and E. Keenan (2003:194), the semantic role of the coda is to provide the context for the interpretation of the pivot.

Table 1. Types of coda in there-sentences

Таблица 1. Типы коды (это часть за посткопулярной именной группой) в экзистенциальных предложениях

Coda					
Locative	(that) clause	Vpp	Ving	Vinf	No coda
4	10	5	8	8	370

Codas serve as pivot modifiers forming their “modifier structure” as D. Aksel’rud puts it (2016: 65). All kinds of the coda enable to clarify the reference of the postcopular noun phrases. When there is none, it is the context itself that defines this reference. According to these corpus data, the coda is certainly not a must-have for the possessive pivots.

The corpus data provide three main contexts for existentials with possessive pivots. They are introduction reading, enumeration, or listing reading and anaphoric summing up reading.

The first block presents introduction context. There are 254 passages out of 405. In fact, it is the main role of there-sentences – to introduce a new referent. The presentation of a relatively new referent is explicitly shown in the following examples.

(8) **There’s my dog.** It’s called Dempsey

(9) **Well, there’s its name** painted on it.

Just up there, look.

(10) **There’s your mother** there, look.

(11) *We followed the noise of the fighting and came to a hill. There stood a strong wooden house, big enough for forty people, and with holes for guns on every side. All around the house was a wide open piece of land; and around that was a fence, two metres high, with no doors or openings, and too strong to pull down easily. As soon as Ben Gunn saw the English flag flying over the house, he said, ‘**There are your friends.**’ More likely to be the pirates,’ I answered.*

It is difficult to expect the meaning of total novelty and indefiniteness from possessives. Their definiteness is inherent in them due to their possessive nature. We can

speak rather of hearer-new or the interlocutors’-new information or about the first appearance of the person/object referred to in the postcopular pivot phrase. So, we can call it “introduction reading” when the speaker introduces a person/object one way or the other.

There are also four other readings in this group. We unite them into one type as they differ from the mere introduction reading but share similar shade of meaning. Persons/objects are introduced into the communicative situation (sometimes in flesh, sometimes in the virtual status of being my good/clever/etc someone), it may be even their first appearance or at least labelling but they are “nobody-new”. We may call it “greeting/finding/caress/encouragement” type.

(12) *Aye, where’s my card! I didn’t get, oh **there’s my card!*** - finding

(13) *Here’s Alison (pause) there’s a good boy, **there’s my good lad*** - caress

(14) *Hello birds. Hello birds. **There’s my good boy. Oh!*** - caress

(15) *Oh right there we are close the window. Yeah. Eh eh eh eh Daddy’ll wash his hands. Just wait there. Oh, you’re brushing your teeth there’s a clever boy. **There’s my clever boy.*** - caress and encouragement

(16) *We got drunk together the night before Boris left. He got the cross out and showed it to me. He kissed it. ‘**There’s my beauty,**’ he said.* - caress

In the next passage Mrs Hollidaye greets her fruits, she is happy to see them, she loves them, she thinks about them as if they are children who need warmth and care. Surely, these melons are not unknown to her,

she grows them, she sees them every day so we are not be able to define them as “Mrs Hollidaye-new”. But she sees them for the first time that particular day and thus these melons are brought to the scene.

(17) *And there was that strange smell again which Dot recognized from the darkness of the night before of things dying and rotting and growing again. Now, in daylight, she knew it was not something to fear. 'There's my little dears,' said Mrs Hollidaye, speaking to the fruits.' Melons.*

And coming along nicely. Just like children. All they need is a warm corner, a nice bit of sun, careful feeding – that's splendid pig manure we put in - and plenty of interest. Then they grow and grow. Ooh, they are going to be such a treat! So long as the frost doesn't get to them first.

In the above cases we deal with the first presentation of an object/person not in the whole context but in some particular status – the status of someone's good boy/clever boy/little dears/beauty/etc.

Table 2. Subtypes of introduction reading contexts

Таблица 2. Подтипы вводящих контекстов

introduction reading contexts				
interlocutor-new	nobody-new			
	greeting	finding	caress	encouragement
<i>There's your mother there, look!</i>	<i>There's my little dears!</i>	<i>Where's my card? I didn't get, oh there's my card!</i>	<i>Hello, birds. There's my good boy. Oh!</i>	<i>Oh, you're brushing your teeth! There's my clever boy.</i>

In all these instances of introduction reading contexts we see the meaning of location, there is some kind of pointing. For the interlocutor-new introduction reading contexts this pointing can be formed with the words “Look!”, “over there”, so we can attach the referent in question to the particular location whether real or virtual. In nobody-new introduction reading contexts with greeting/finding/caress/encouragement elements the referent is already settled in some location and the speaker points to it and picks it up at the same time. The default meaning of existence is just a companion but not the main idea of such contexts.

The second block involves enumeration contexts, there is no scale or gradation of any kind here but the listing is present. There are 120 tokens out of 405. The typical patterns are as follows:

(18) *There's my three brothers and their spouses and one of the nephews.*

(19) *Just taking this along and say well there's my business plan, that's what I*

intend to do, there's my profit, and all the rest of it, plus accounts.

(20) *There's your tractor to do, there's my motorbike to do, and so many other...*

(21) *I've got your two polo necks, there's your hat, your gloves, your socks, your glasses.*

In the next extract the speaker sees many buildings on their way to school (as they put it “many different buildings”), decides to describe some of them and starts with their own house. The phrase “for a start” manifests the first stage of enumeration process and implies the continuation afterwards.

(22) *There are many different buildings in my usual day. I pass a great variety of them on the way to school and I myself actually live, work and play in some of them. For a start there is my house. It was built about one hundred and twenty years ago as a small but sturdy bungalow. Since that time there has been a number of extensions put on it. The*

first of which was probably about twenty years after it was built.

In the following passage the speaker lists all the possibilities available for their interlocutor: “staff, other work colleagues, personnel department, advisory agencies, training organizations, specialized bodies, a person with some training”. There is no quantitative scale but there is enumeration. Though, no gradation is observed: the listed objects are mixed, not in strict order, and the speaker does not give preference to any of them.

(23) *Though recruitment and selection is not a particularly difficult process to master, it is time consuming. You can seek help with it in a number of ways: **there are your own staff** and possibly other work colleagues; and there may be a personnel department or at least a person with some training in this area. You could also look to outside advisory agencies for assistance, such as employers' associations, training organizations, and specialized bodies for articles and literature such as the British Institute of Management, or the Institute of Personnel Management. The latter have a free code of practice on this area.*

The above extracts give prime examples of such a context even if there is no proper listing of the objects in the form of cardinal or ordinal scale “one, two, three ...” or “first, second, third ...”. Possessives themselves cannot form a scale as numbers and quantifiers can. For example, the phrase “all guests were drunk” implies (due to the scalar implicature) that “some guests were drunk”. But it does not work the same for possessives: the phrase “my guests were drunk” does not mean that somebody else’s guests were drunk too. This implication is possible if the hosts belong to one group: a family, friends or any other community; or in case of extreme etiquette hospitality formulas “my house is your house”, “my car is your car”, “you guests are my guests”, “your problems are my problems”. This hospitality situation does not by all means entail reverse movement “your house is my house”, “your car is my car”,

“my guests are your guests”, “my problems are your problems”. This reading is not typical but not banned though. So, possessives do not create a scale, do not support scalar implication, but they may take part in an enumeration context.

The next block of the examples presents the third reading typical for the contexts with certain possessives pivots, namely anaphoric summing up reading. There are only 31 of them.

(24) *'You can't stay here alone, Theda. You will have to hire a companion.' A companion!' echoed Theda. 'For me?' The irony of it struck her forcibly and her gurgling laughter broke out. **'There is your answer.** I shall hire Benedict to live with me and leave him the place in my will!'*

Theda, the girl from this extract, could not pronounce a word because of the surreality of the idea offered by her interlocutor. “Gurgling laughter” was her only reaction. It is her behaviour, not words, that constitutes this non-verbal answer. And Theda’s interlocutor derives this answer from her reaction, thus summing up the whole situation.

(25) *What's your estimate of the value of the electronic gear we have aboard? Twenty million. Maybe twenty-five. A lot, anyway. **There is your answer,** Doctor. That thing's gone bang once already. It can go bang once again. I am not going alongside. You are. In the launch. That's expendable. The Ariadne's not. Well, thank you very much.*

(26) *At the same time she didn't see why she shouldn't benefit from it, and get herself a husband into the bargain. She decided to have a bit of fun therefore -- at their expense. "Then mark this, Master Harry: if you won't take Sam here on at fishing, you'll not have me as a wife. You either win me in fair competition, or you don't have me at all, and **there's my last word on't**".*

In these two passages (25) and (26) the answers are verbal, but it is still the result of the interlocutor’s summing up. In (26) we can present this “last word” as a complex unit dividing it into smaller parts that constitute it.

We can find four of them: drawing of attention (*"mark this, Master Harry"*), immediate goal setting (*"take Sam here on at fishing"*), adverse consequences in case of a failure of the above assumptions (*"if you won't take Sam here on at fishing, you'll not have me as a wife"*), detailed explanation of goal setting (*"you either win me in fair competition, or you don't have me at all"*). And all these elements, one by one, without missing or overlapping a stage, constitute the resulting summing up expressed by the phrase *"there's my last word on't"*.

The constituents of the summing up reading are not always so explicit and detailed as in the previous passage.

(27) *Now, Alison and Jack were away, gone to Amsterdam. Or rather, they would now be on their way back, since they had decided (Franca could imagine the little conversation, she thought of it as a' little' conversation) to stay away only one night, instead of the three nights originally planned. Franca was sorry about the change of plan. She had said to herself, thinking of that absence, **there's my chance!** But her chance for what? She could not run away. She could not.*

In (27) only one clear-cut constituent of Franca's chance can be extruded from the immediate context – *Franca's change of plan*. More close tracing needs more generous context that serves as some kind of nesting doll thus revealing the constituents of Franca's chance.

Passage (28) gives that rare example of a possessives pivot followed by a coda. It is the coda that sums up the situation and explains the meaning of authority in this particular context.

(28) *"And you're authorizing me to leave for Brussels, to handle the problem in any way I see fit? Have I understood you?" Broadly speaking, yes. In the interests of the Service. Draw any amount of expenses you need. **There's my authority** for you to do that inside the envelope. Mission unspecified, of course. For your protection.'*

In these contexts the speaker sums up the previous words or the whole situation and labels them as answer, last word, notes, chance, authority to do something, etc. There is no explicit listing (though there is implicit one by all means) in such contexts and one cannot treat them as an attempt to introduce new information.

Table 3. Types of contexts for there-sentences with possessive pivots

Таблица 3. Типы контекстов экзистенциальных предложений с притяжательными посткопулярными именными группами

Contexts (405)		
introduction	enumeration proper	anaphoric summing up
254	120	31

The data show some ordering of the contexts possible for possessive pivots. This list is exhaustive (at least for BNC). It seems that these types of contexts reflect the stages of enumeration process itself. The nature of the listed elements does not matter, whether they are simple or complex, solid objects, abstract ideas or situations.

Discussion

In the previous section we described pragmatic contexts for possessive pivots. In

this section we shall assess the data correlating the obtained information and the semantics of possessives and there-sentences.

Possessives have two semantic features: the ability to express possessive relation itself and definiteness which is inherent in them due to this possessive relation (Antonova, 2020). A possessive denotes a relationship between a possessor and a possessee, the exact nature of this relation is determined by the context. So, the possessive determiner performs two roles:

it indicates the presence of a possessive relationship in a given phrase and anaphorically refers to the possessor without naming it. According to J. Taylor, proper possession is the base for prototypical possession relation. John Taylor (1989: 679-680) gives the following characteristics of this relation: "a specific animate or inanimate person who has exclusive rights to access the possessed object acts as the possessor; other persons have the right to access such an object only with the permission of the possessor; the attitude of belonging is usually long-term; the possessed object must be within the reach of the possessor, in some cases the possessed object constantly or at least regularly accompanies the possessor". In a broad sense, possessiveness implies a rather extensive set of semantically similar relationships. In the one and the same phrase, for example, "his film", the possessive relationship between subject and object can have different interpretations, for example, a cassette with a film belonging to a person, the rights to rent a film, a film in the creation of which he participated and so on. The semantics of possession relations has been given a thorough research by numerous linguists (Williams, 1982; Lyons, 1986; Partee, Borschev, 1999; Barker, 2000; Barker, 2005; Jensen and Vikner, 2005; Storto, 2005; Willemse, 2007; Barker, 2011; Koch, 2012; Peters and Westerståhl, 2013; Kolkman and Falkum, 2020).

The type of possessive relation is determined by the semantic features of the noun denoting the object of possession. There are different classifications based on various criteria. R. Quirk (1985: 321) identifies eight main genitive meanings: possessive genitive (John's father, his passport), subjective genitive (the boy's application), objective genitive (the family's support), genitive of origin (the girl's story), descriptive genitive (a women's college), genitive of attribute (the victim's courage), genitive of measure (the ten days 'absence), partitive genitive (the baby's eyes). According to the classification based on the principle of inalienable / alienable

possession (Vergnaud and Zubizarreta, 1992; Vikner and Jensen, 2002) the members of the possessive relationship are semantically interdependent. An inalienable possession, which operates mainly on the relationship of kinship, part and whole, is registered on the basis of common sense and cognitive experience. C. Barker (2011, 2000), C. Vikner and P. A. Jensen (2002: 195) differentiate 'lexical' and 'pragmatic' interpretations. 'Lexical' interpretations are derived from the lexical semantics of the possessive NP (e.g. John's granny, John's birthday), while 'pragmatic' interpretations require supporting information from the wider context. Out of the context, the phrase "my train" means the train I am traveling/meet/work/possess as an owner. Any particular meaning is provided by the broader context. J. Kolkman and I. L. Falkum (2020: 1) claim that in fact both readings (lexical and pragmatic) receive various kinds and degrees of contextual support. As per the available corpus data we may claim that the type of possession relation (of any origin) in possessive pivots does not affect their licensing in the position discussed.

Now we shall pay our attention to the next semantic feature of possessives – definiteness. Once definiteness was the moot point in linguistics. In this paper we do not aim to give a full overview of all the theories as it does not add solutions to the problem raised, i.e. possessive pivot licensing. The most representative works on the semantics of definiteness (to name a few) are those of (Hawkins, 1978; Kadmon, 1990, Lyons, 1999. Abbott, 2004). And the main question was and to some extent still is the definitive and indisputable criterion for it. Numerous works on the problem can be roughly divided into three main groups according to what they believe the licensing condition for definiteness. There are three main ideas for this licensing – uniqueness, familiarity and salience. Salience is a more general criterion; it is based on the situational salience of the referred object. This situational salience consists of all necessary information to single out the referent. The salience criterion

represents a unified combination of conditions and circumstances leading to the definiteness of the expression in question. In this case, uniqueness and familiarity can serve as constituents of salience. Thus, salience can be regarded as a common notion. Bearing in mind all their differences linguists agree on the same thing: the basis for definiteness is the unambiguity of reference, i.e. the connection between a certain description and the entity it expresses is transparent and clearly tracked. As for the possessives, their definiteness is inherent in their nature. It is the anaphoric reference to the possessor that provides salience for possessives. If we pronounce “my/his/your/her/its/our/their something” we single out, point the referent. We can identify the following semantic features for possessives: possessiveness, definiteness and deixis (as definiteness inevitably leads to deixis). We accept the idea of deixis as the function by means of which a speaker relates an entity to the current speech situation. We follow the line that all determiners are deictic.

Thus, on the one hand we have “there + be” constructions which present the semantics of existence and on the other hand there are possessives with the semantics of possessiveness, definiteness (on the basis of salience whatever it may be) and deixis. We should reveal the circumstances under which all these semantic features and their carriers (existential constructions and their possessive pivots) converge in one unit. We assume that there-sentences greet only those determiner elements in their pivots whose semantics does not contradict or duplicate that of there-sentences. Existentials introduce, first and foremost, new information, that is common knowledge. As observed and as stated earlier in (Prince, 1992; Ward, Birner, 1995; Abbot, 1997; Barker, 2000; Gaeta, 2013) definiteness is quite compatible with novelty. As E. Prince (1992: 302) put this: “There-sentences do not require indefinite NPs at all: rather, they require Hearer-new NPs”. We can continue that there-sentences do not require not only Hearer-new or Speaker-new but even

Possessee-new as it is seen from the analysis in previous section. It is this Possessee-new status that accounts for semantically anaphoric uses of the pivots. So, definiteness is not a barrier for the possessive pivots therefore we claim that it is not definiteness that sets the constraints for pivot licensing.

Our analysis of the corpus data allows us to describe this interaction of existential structures and its possessive pivots in the following way. An existential construction implies existence of a certain entity, a possessive shows this entity as the possessed by one of the participants and most salient in the speech situation, the speech situation itself presents enumeration context backed up with relevant linguistic and extra linguistic information. In our corpus data all these enumeration contexts are accompanied with the pointing to the location of the entity in question. The enumeration and location are parts of deictic meaning. Thus, deictic meaning of the possessives gets support from the deictic meaning of the corresponding contexts.

The abovementioned characteristics can be summed up into four items constructing the unified meaning of there-sentences with possessive pivots: existence, enumeration, location and deixis. As we do not have other contexts suitable for possessive pivots but enumeration+location ones we may assume that the licensing condition lies in the enumeration/listing contexts of there-sentences. Possessives do not duplicate, do not contradict these enumeration/listing contexts and can be freely introduced into them, they can work at every stage of enumeration process whether it is the beginning, the listing proper or the end of it (summing up).

Conclusions

Our corpus study of the licensing conditions under which possessive postverbal noun phrases may appear in *there*-sentences has shown that the semantics-pragmatics interface can be very important in this respect as it deals with the issue combining the semantic features of the elements under

consideration with their usage in broad discourse surroundings. The paper describes a wide range of the corresponding contexts and provide some explanations in accordance with the semantic peculiarities of the two participants: *there*-construction and its possessives pivots. According to our findings, we may assume that the type of possession relation in possessive pivots does not affect their licensing in the position discussed (at least there are no proofs to think the opposite). Based on a study of a corpus of natural data, we have identified three types of contexts suitable for possessive pivots. They are introduction reading, enumeration/listing reading and anaphoric summing-up reading. These three contexts correspond to the three stages of the enumeration process: the start, the listing itself and the summing up. As it is shown in the paper, anaphoric contexts give rise to the suggestion that the ability of *there*-sentences to introduce new information is not crucial when choosing determiners for postverbal pivots. As observed earlier, the definiteness of the possessives is neither a barrier nor a facilitator in obtaining access to the position in question. Thus, we claim that it is not definiteness that sets the constraints for possessive pivot licensing. As the above study of the corpus data show, the licensing condition lies in the enumeration/listing semantics of *there*-sentences. Possessives are neutral in this respect and can be freely introduced into the listing contexts. It seems reasonable to say that there are no specific licensing constraints for possessive pivots. Their access to the postcopular position of *there*-sentences is not limited. The semantics of possessives does not contradict or duplicate the semantics of *there*-sentences. As possessives are scalar-neutral elements, they can support the listing contexts being at any stage of the enumeration process whether it is at the beginning, in midstream or at the final point summing up the ideas. And it is this enumeration process that is responsible for location pointing and thus leads to the corresponding deictic meaning.

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Конфликты интересов: у авторов нет конфликта интересов для декларации.

Conflicts of Interest: the authors have no conflicts of interest to declare.

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DOI: 10.18413/2313-8912-2022-8-4-0-8

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**Lexical and syntactic features of academic Russian texts:
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Received 29 August 2022; accepted 12 December 2022; published 30 December 2022

Acknowledgements. This paper has been supported by the Kazan Federal University Strategic Academic Leadership Program (“PRIORITY-2030”), Strategic Project №4.

We thank Polina Alexandrovna Lekhnitskaya, a student at Kazan Federal University, for her assistance in compiling the corpus of academic texts and cooperation while conducting the research.





Abstract. This article presents three mathematical models to differentiate academic texts from three subject discourses written in Russian (i.e., Philological, Mathematical, and Natural Sciences) which further enable design and automated profiling of corresponding typologies. Our models include 5 indices, one at surface level (i.e., sentence length) and 4 syntax features (i.e., mean verbs per sentence, mean adjectives per sentence, local noun overlap, and global argument overlap). We identified and validated the five statistically significant features out of 45 linguistic features extracted from our research corpus consisting of 91.185 tokens. The shortest sentence length is found in Russian language textbooks while the longest sentences are identified in Natural Science texts. The mean number of verbs, nouns, and adjectives per sentence is higher in Natural Science textbooks, whereas Mathematics

discourse is characterized by the shortest word length, highest local noun overlap, and highest global argument overlap. We assign the metric differences between the three discourses to their functions: Natural Science texts are characterized by descriptions and narrative passages in contrast to Philology that is associated with opinions. Mathematical discourse operates with precise definitions, explanations and justifications thus exercising numerous overlaps. The discriminant analysis built on top of the features supports the development of text profilers targeting parametric analyses. The automation of these features and the provided formulas for classification enable the design and development of text profilers required for textbook writing and editing. Our findings are useful for professional linguists, technologists, and academic writers to select and modify texts for their target audience.

Keywords: Typology; Lexical features; Automation profilers; Subject domain; Syntactic features; Mathematical model; Discriminant analysis

How to cite: Kupriyanov, R. V., Solnyshkina, M. I., Dascalu, M. and Soldatkina, T. A. (2022). Lexical and syntactic features of academic Russian texts: a discriminant analysis, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 105-122. DOI: 10.18413/2313-8912-2022-8-4-0-8

DOI: 10.18413/2313-8912-2022-8-4-0-8

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Статья поступила 29 августа 2022 г.; принята 12 декабря 2022 г.;
опубликована 30 декабря 2022 г.

Информация об источниках финансирования или грантах, благодарности: Работа выполнена за счет средств Программы стратегического академического лидерства Казанского (Приволжского) федерального университета («ПРИОРИТЕТ-2030»), Стратегического проекта №4.

Мы благодарим Лехницкую Полину Александровну, студентку Казанского федерального университета, за помощь в подготовке корпусов учебных текстов и проведении исследования.

Аннотация. В статье представлены математические модели дифференциации академических текстов трех предметных дискурсов на русском языке (филологического, математического и естественнонаучного), которые являются основой разработки и автоматизации профилирования текстов. Наша модель включает индексы двух групп параметров, а именно, поверхностных (например, длина предложения) и синтаксических (например, среднее значение глаголов в предложении, среднее значение прилагательных в предложении, локальный повтор существительных и глобальный повтор аргументов). Мы определили и подтвердили 5 статистически значимых признаков из 45 лингвистических признаков, извлеченных из нашего исследовательского корпуса, состоящего из 91185 токенов. Дискриминантный анализ, осуществленный на основе этих функций, подтвердил валидность профилирования текстов основанного на параметрическом анализе. Наши результаты будут полезны профессиональным лингвистам, программистам и разработчикам учебных и контрольно-измерительных материалов при выборе и модификации текстов для целевой аудитории.

Ключевые слова: Профилирование текста; Лексические признаки; Автоматические профайлеры; Предметная область; Синтаксические признаки; Математическая модель; Дискриминантный анализ

Информация для цитирования: Куприянов Р. В., Солнышкина М. И., Даскалу М., Солдаткина Т. А. Лексические и синтаксические параметры академического текста: дискриминантный анализ // Научный результат. Вопросы теоретической и прикладной лингвистики. Т. 8. № 4. С. 105-122. DOI: 10.18413/2313-8912-2022-8-4-0-8

Introduction

The modern paradigm of applied linguistics addresses numerous problems – for example, translation algorithms, Natural Language Processing, and text mining (lit.Russ. "intelligent" text analysis). Results of applied linguistics research are extensively applied, from selecting texts with the designated content to recommendations for modifying the text for a certain category of potential readers. At present, researchers and users have readily available several automated text analyzers like TextInspector, Lextutor, Coh-Metrix, ReaderBench, Textometer, and

RuLingva. These systems compute more than 200 text features and provide researchers with materials for describing, comparing, and altering texts depending on the users' linguistic-pragmatic goals. For example, Lextutor (<https://www.lex tutor.ca/vp/eng/>) classifies vocabulary by origin, while TextInspector (<https://textinspector.com/>) considers the Common European scale (eng. CEFR) (<https://www.coe.int/ru/web/lang-migrants/cefr-and-profiles>). However, none of the existing analyzers is a discourse profiler – i.e., they do not define the register, discourse, and the type of a text based on its linguistic

features. Of interest for these systems is the identification of reference ranges for the parameter metrics which enables the classification of text types. The demand for such profilers is especially high when selecting texts for specific purposes (e.g., educational, monitoring, informative, suggestive), as well as for authorship identification or the selection of text materials for various categories of users.

This article aims to establish a list of typological linguistic features that differentiate texts corresponding to three subject discourses (i.e., Mathematical, Philological, and Natural Science). The mathematical model relies on a discriminant analysis that enables follow-up automated text profiling (i.e., the attribution of a text to a certain level of complexity and discourse type).

The **hypothesis** of this study is that academic texts of a predefined complexity (i.e., within the range of one academic year) and intended for use in various subject areas (i.e., Mathematics, Philology, and Natural Science) exhibit quantitative lexical and syntactic differences. Such differences are typological in nature and can lead to the identification of discourse type and even the author (source). The identification of discriminative features and the design of a mathematical model of the text further facilitate the inter- and intra-discourse classification of texts.

Our main research objective is to develop a mathematical model to predict the complexity of academic texts in Russian using a limited list of linguistic features. We also aim at providing researchers with a practical and reproducible route to developing new language resources for Russian as a low-resource language.

Literature review

The specificity of an academic (or educational or scientific) text lies in its communicative function and pragmatic component, namely, in its focus on comprehension from the target audience. Zhrebtsova (2007: 29) emphasizes the

importance of information transfer when defining an educational and scientific text as a written message characterized by semantic and structural completeness. As such, the information content of a text as a unit of discourse is largely determined by its linguistic features: morphological, lexical, syntactic, and discourse (Solnyshkina, Harkova, Kazachkova, 2020). These features reveal the specifics of the educational and scientific text in different ways, determining its perceived difficulty for various categories of linguistic profiles (Solnyshkina, Kazachkova, Harkova, 2020).

The perception of difficulty for oral and printed (electronic) texts is correlated to quantitative features that include text length, syllable or character means for words (i.e., word length), or word counts in a sentence (i.e., sentence length). These features are considered in statistical analyses of text complexity and their correlation to text difficulty is linked to the capacity of working memory (Oborneva, 2006: 5).

Sentence length as a predictor of complexity is of particular interest because it relates to syntax. Inherently, syntax may be more complex for sentences with an increased number of words; thus, high values for this feature are indicative of potential difficulties in understanding the text (McNamara, Graesser, McCarthy & Cai, 2014: 2). Word length is evaluated in a similar manner: longer words require more time to comprehend, work with, and store for a short term (Vakhrusheva, Solnyshkina, Kupriyanov, Gafiyatova, Klimagina, 2021: 15). Shorter words are easier to read; moreover, they are easier to comprehend and disambiguate since they tend to have fewer senses (Kiselnikov, 2015: 4).

Other morphological features also play an important role in text comprehension – for example, the proportions of various parts of speech in the text. Corpus linguistics has developed methods for identifying genres based on the relative frequencies of individual parts of speech (Seifart, Danielsen, Meyer, Nordhoff et al., 2012: 10). Statistically

significant differences in registers and types of discourses were validated in several languages (Biber, 2006: 261). For example, verbs overlap was confirmed to create a more cohesive event structure that is easier to comprehend using the situational model; this parameter is especially relevant in the analysis of narrative texts (McNamara, Graesser & Louwerse, 2012: 89–116). Similar patterns have also been identified in Russian texts (Zhuravlev, 1988: 84–150; Sirotinina, 2009: 312). For example, the mean adjective and noun counts, as well as the genitive case, were validated as reliable complexity predictors. The increase of genitive cases in biology texts from the 5th to the 11th grade is 7% (from 34% to 41%), while social science texts exhibit a more drastic increase from 23% to 38% (Gatiyatullina, Solnyshkina, Solovyev, Danilov et al., 2020: 393–398).

Linguistic features of text complexity also include relative predictors (i.e., measures based on the relation of specific groups of units to others): the nominative ratio of verbs to nouns and the descriptive ratio of adjectives to nouns (Martynova, Solnyshkina, Merzlyakova, Gizatulina, 2020: 72–80).

Lexical features relate to the overlap of individual lexemes. Research indicates the significance of local overlap of nouns – i.e., repetitions of the same lexeme within one sentence or in adjacent sentences –, as well as global repetitions within the entire text (Corlatescu, Ruseti & Dascalu, 2022: 354; McNamara, Graesser, McCarthy & Cai, 2014: 2). Similar features include local and global argument overlaps (Crossley, Varner, Roscoe & McNamara, 2013: 3) that consider noun, pronoun, or a noun phrase in one sentence as a co-referent of a noun, pronoun, or a noun phrase in another sentence (McNamara, Graesser, McCarthy & Cai, 2014: 90).

Researchers also highlight lexical diversity (TTR - Type Token Ratio; the ratio of words to word forms) as a complexity predictor (Graesser, McNamara, Louwerse & Cai, 2004: 194). With TTR=1.0, none of the words in the text are repeated; however, such texts are not natural since the absence of

lexical repetitions increases the difficulty of texts. Low TTR values (< 0.5) indicate a high repetition of words, which positively impacts text processing. The target audience of these texts consists of speakers with a limited vocabulary, namely foreign language learners or young students (Malvern, Richards, Chipere & Durán, 2004). TTR is measured on texts no longer than 1000 tokens as lengthier sequences result in an increase of functional words on one hand, and a decrease in content words, on the other. TTR values measured on texts longer than 1000 tokens are considered unreliable; thus, these texts need to be divided into fragments on which TTR is measured separately (Vakhrusheva, Solnyshkina, Kupriyanov, Gafiyatova, Klimagina, 2021: 88–99).

A validated predictor for the complexity of academic texts is the Flesch-Kincaid Readability Index (FK), originally developed for texts in English (Flesch, 1948: 221–233) and adapted for the Russian language only at the beginning of this century (Solnyshkina and Kiselnikov, 2015). The popularity of this index was facilitated by two factors: ease of calculations (and subsequent successful automation) and its match to the academic age of the reader (i.e., the number of years of formal schooling). Currently, this formula is successfully used for a variety of purposes from matching books to reader vocabularies, to predicting the success of a website. This text readability index is measured based on two basic metrics – mean sentence length and mean word length (Solnyshkina and Kiselnikov, 2015). FK is widely used to assess text appropriateness for different categories of readers pertaining to the military, medical institutions, insurance companies, and even car dealerships.

The two most notable readability formulas for the Russian language were designed for texts containing various discourse types. First, FC (SIS) (eq. 1) was developed on the corpus of academic texts and validated in psycholinguistic experiments with school children:

$$(1) FC(SIS) = 208.7 - 2.6 \times ASL - 39.2 \times ASW$$

where ASL is the mean sentence length in tokens and ALS is the mean word length in syllables (Solovyev, Ivanov & Solnyshkina, 2018).

Second, the readability formula of Osborne (2006) [FC(O), eq. 2] was developed on fiction texts; however, it provides overestimated results when applied to texts of other types:

$$(2) FC(O) = 206.835 - (1.3 \times ASL) - (60.1 \times ASW) \text{ (see Solnyshkina, McNamara \& Zamaletdinov, 2022).}$$

The index of abstractness is also recognized by many researchers as a complexity predictor (Solovyev, Ivanov & Akhtiamov, 2019: 215–227) since abstract concepts hinder text comprehension (Solnyshkina and Kiselnikov, 2015). This parameter is especially significant in the complexity assessment of texts intended for younger students who more easily understand concrete words and may struggle with abstract concepts (Vakhrusheva, Solnyshkina, Kupriyanov, Gafiyatova, Klimagina, 2021: 15).

Methods

The set of features as listed above enables not only to carry out a multi-factor analysis of the linguistic complexity of the text but also to define a profile of the text using a limited number of features (i.e., assign it to a certain type, discourse, and level of complexity).

The starting point for this study was the idea that academic texts exhibit a quantitative typology, namely their "homogeneity" to teach a certain subject to students of a certain grade. Typology as a method is based on the concept of "fuzzy sets" of elements in which the transition of an element (in our case, a text) from one class (category) to another is carried out gradually. Elements of a class possess two types of features: inherent features (i.e., features typical of a class) and specific, individual features. The transition of an element from one class to another implies

the accumulation of typological features of another set. For example, the complexity of Mathematics texts for the 2nd and the 3d grades is supposed to be different, although linguistic differences between them are few and minor. However, these differences may be elicited in the metrics of morphological, lexical, and syntactic features. In contrast, when considering texts of the same complexity but different subject areas (e.g., texts used to teach Russian in the 2nd grade and texts used to teach Mathematics in the 2nd grade) we assume they differ in several features. Moreover, the list of these features may differ when comparing texts of the same subject, but of varying complexity.

Our study was carried out in three stages described subsequently:

(1) Preparation, cleaning, and corpus pre-processing

The corpus for this study was compiled from seven textbooks on three subjects (the Russian language, Mathematics, and Science) from the Federal list of textbooks of the Russian Federation (<https://fpu.edu.ru/>, Order of the Ministry of Education of Russia No. 254, May 20, 2020), summing up to a total size of 95377 tokens. The selection of the books was performed based on the expert opinion of teachers practicing in primary schools. The sub-corpora for the 3 subjects were balanced in terms of their size (see Table 1).

Meta-descriptions, prefaces, author's introductory words, contents, illustrations, inscriptions, phrases like "Figure 1", notes, self-control questions, laboratory tasks, chapter titles, subheadings, footers, and running headlines were deleted to ensure consistency of the language material at the pre-processing stage. The textbooks were divided into 87 texts of about 750 – 1000 tokens: 20 Mathematics texts, 30 texts from the textbooks used to teach the Russian language, and 37 texts from textbooks on Natural Science. The variation in the sizes of texts under study, i.e. the range of 750 – 1000, was caused by the following: 1) we followed the textbooks segmentation into chapters and

did not add a fragment to a chapter which in Natural science varies within 700 – 1000 words; 2) we did not increase the recommended sample text size to be within the range of 700 – 1000 words (Biber, 2006).

We also randomly selected 10 texts (3 in Mathematics, 3 in the Philology, and 4 in Natural Sciences) to test our model. These 10 texts were not used in the discriminant analysis.

Table 1. Corpus Size

Таблица 1. Размер корпуса исследования

Discourse domain	Textbook size (in tokens)	Subcorpus size (in tokens)
Philology	13702	38478
	20384	
	4392	
Maths	16991	28728
	11737	
Science	19770	28171
	8401	

(2) Measurement of metrics of 45 linguistic features with the help of the automatic analyzer RuLingva (<https://rulingva.kpfu.ru/>) and the analysis of 14 statistically significant features

The metrics of the linguistic features of the texts under study were calculated using the automatic analysis RuLingva (<https://rulingva.kpfu.ru/>). After the initial screening, we selected 14 of the 45 features calculated with RuLingva in accordance to the previous work performed by Solnyshkina, Solovyev, Gafiyatova, Martynova (2022): sentence length (mean words in a sentence), word length (mean syllables in a word, mean nouns per sentence, the mean verbs per sentence, mean adjectives per sentence, Flesch-Kincaid index – FK(SIS)), index of abstractness, local noun overlap, global noun overlap, local argument overlap, global argument overlap, lexical diversity (Type token ratio, TTR), the nominative ratio of verbs to nouns, the descriptive ratio of adjectives to nouns, number of one-syllable words, number of two-syllable words, number of three-syllable words, number of four-syllable words. All other features (e.g., number of nouns in different cases, number of tense forms of the verb, Flesch-Kincaid index (FK(O))) were excluded from the analysis

based on the similarity of the values for these features across all three sub-corpora.

(3) Development of the profiling method based on a discriminant analysis of the metrics of linguistic features.

The statistical analysis of the 14 features from the 87 texts was carried out using STATISTICA. After checking for the normality of the distributions, non-parametric Kruskal-Wallis H tests were conducted to assess differences between the blocks since the features were not normally distributed.

The discriminant analysis was employed to identify typological features of the texts and to calculate the formulas for classifying texts by subject discourse. We used the Discriminant Analysis module in STATISTICA and calculated the values of Wilks lambda (λ) and F-criterion. Wilks lambda value (λ) close to 0 indicates good discrimination (i.e., the contrasted objects have statistically significant differences). The F value of a variable in contrasted objects also indicates their statistically significant differences, thus being a measure that has a unique contribution to predicting the classification of an element to a group. Thus, we assess the correctness of the classification of the texts from this study based on the values of λ Wilks and the F-criterion.

Research results

In accordance to our research method, 14 features were analyzed in detail. Columns III - V from Table 2 present the means and standard deviations of all features

corresponding to the texts under this study. Column VI denotes statistically significant features with an asterisk * ($p < .05$). Kruskal-Wallis H test confirmed that most of the features of the texts, with the exception of the 'abstractness index' and 'global noun overlap' (lines 9 and 11), are statistically significant (see Table 2).

Table 2. Linguistic features of texts of three sub-corpora

Таблица 2. Лингвистические параметры текстов трех предметных подкорпусов

	Parameter	Science ($N = 37$)	Maths ($N = 20$)	Philology ($N = 30$)	Kruskal- Wallis Test $H(2, N = 87)$	p
I	II	III	IV	V	VI	VII
1.	Mean sentence length	9.05±0.73	8.76±1.43	6.30±1.07	53.66	< .01*
2.	Mean word length (in syllables)	2.38±0.18	1.97±0.14	2.27±0.22	51.16	< .01*
3.	Mean of nouns per sentence	3.32±0.36	3.15±0.47	2.55±0.37	40.07	< .01*
4.	Mean verbs per sentence	1.42±0.17	0.97±0.15	0.95±0.19	57.59	< .01*
5.	Mean adjectives per sentence	0.96±0.16	0.74±0.21	0.63±0.15	39.97	< .01*
6.	Nominative ratio	0.43±0.07	0.31±0.03	0.37±0.06	38.54	< .01*
7.	Descriptive ratio	0.29±0.05	0.23±0.05	0.25±0.04	19.90	< .01*
8.	FC index (SIS)	4.83±0.59	2.51±0.81	3.18±0.82	56.53	< .01*
9.	Abstract index	2.60±0.13	2.57±0.12	2.58±0.10	0.61	0.73
10.	Local noun overlap	0.15±0.06	0.39±0.10	0.10±0.04	53.13	< .01*
11.	Global Noun overlap	0.04±0.02	0.03±0.01	0.05±0.07	0.05	0.98
12.	Local argument overlap	0.45±0.13	0.69±0.12	0.28±0.10	54.57	< .01*
13.	Global argument overlap	0.14±0.05	0.08±0.02	0.11±0.07	21.28	< .01*
14.	TTR	0.64±0.05	0.45±0.06	0.60±0.04	50.83	< .01*

* $p < .05$ — statistically significant differences

We consider for in-depth analysis all features that exhibit statistically significant differences between the three sub-corpora. Based on the data (see Table 2) and range diagrams (see Figures 1 a and b), we argue that the mean sentence length and mean syllables discriminate texts of different subject areas: sentences in Philological texts

(sub-corpus of texts used to teach Russian) are the shortest – 6.30±1.07 words, and the longest sentences are in texts in the natural science sub-corpus – 9.05±0.73 words. The shortest words are used by the authors of the Mathematical texts – 1.97±0.14 words, and the longest appear in Natural Science texts – 2.38±0.18 words.

Figure 1. a) Mean sentence length (in words); b) Mean word length (in syllables)

Рисунок 1. а) Средняя длина предложения (в словах); б) Средняя длина слов (в слогах)

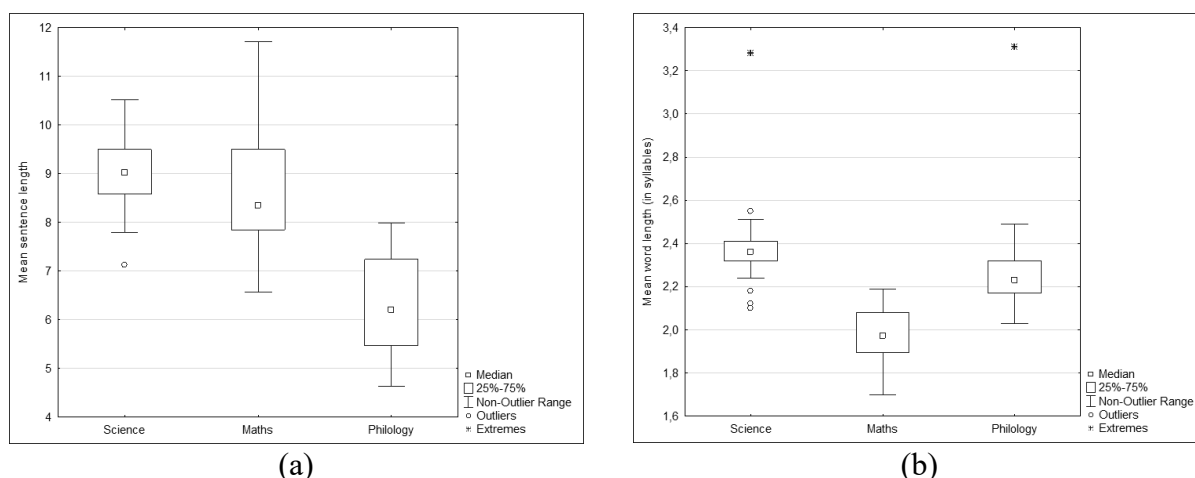
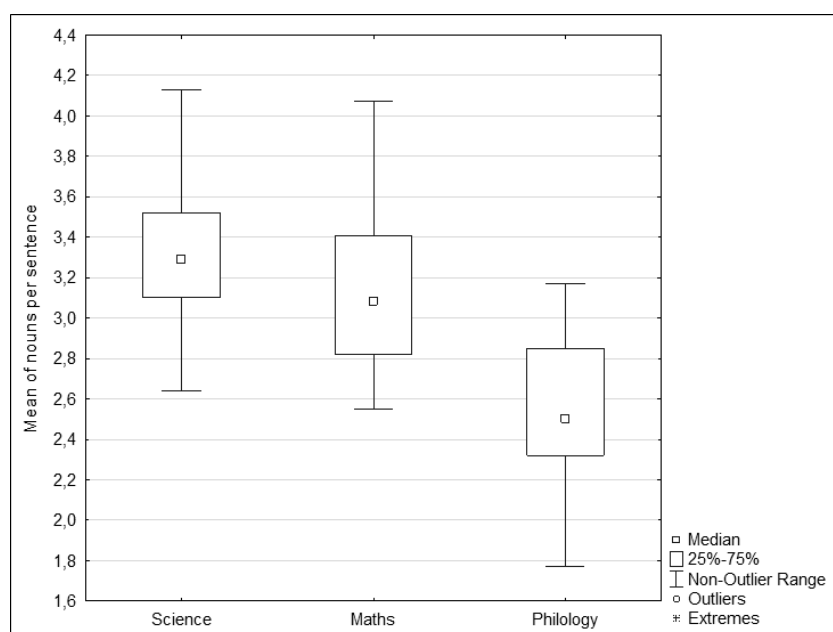


Figure 2 shows that Philological texts differ from the rest of the blocks: the number of nouns per sentence (2.55 ± 0.37) in these

texts is the lowest, while the same metric in Natural science (3.32 ± 0.36) and Mathematical (3.15 ± 0.47) texts differs insignificantly.

Figure 2. Mean nouns per sentence

Рисунок 2. Среднее количество существительных на предложение

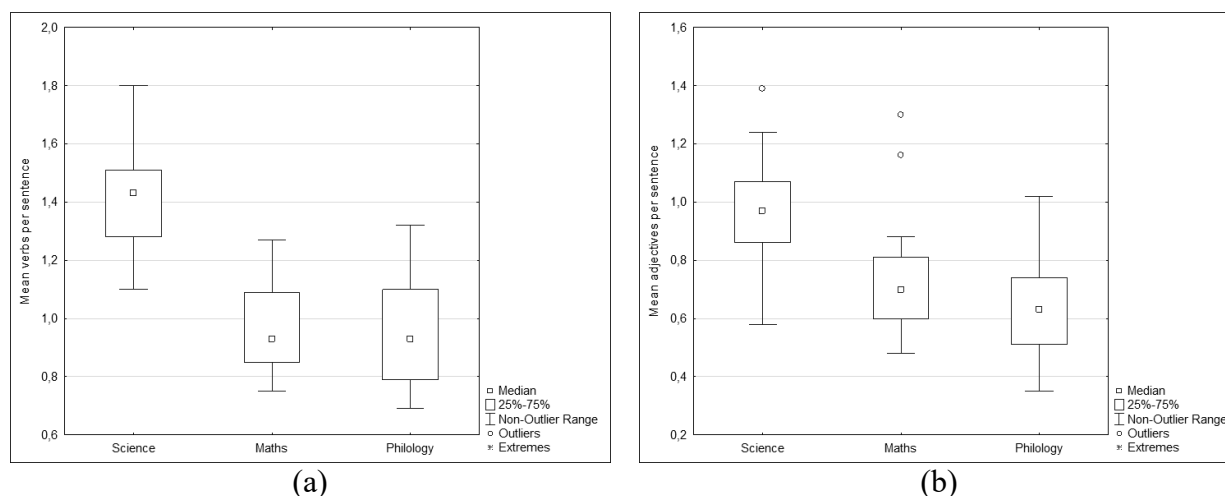


The mean numbers of verbs and adjectives per sentence are also the highest in natural science texts: with verbs having 1.42 ± 0.17 and adjectives 0.96 ± 0.16 per

sentence (see Figures 3a and 3b). The differences in these features in texts of Philological and Mathematical sub-corpora are statistically insignificant.

Figure 3. a) Mean verbs per sentence; b) Mean adjectives per sentence

Рисунок 3. а) Среднее количество глаголов на предложение; б) Среднее количество прилагательных на предложение

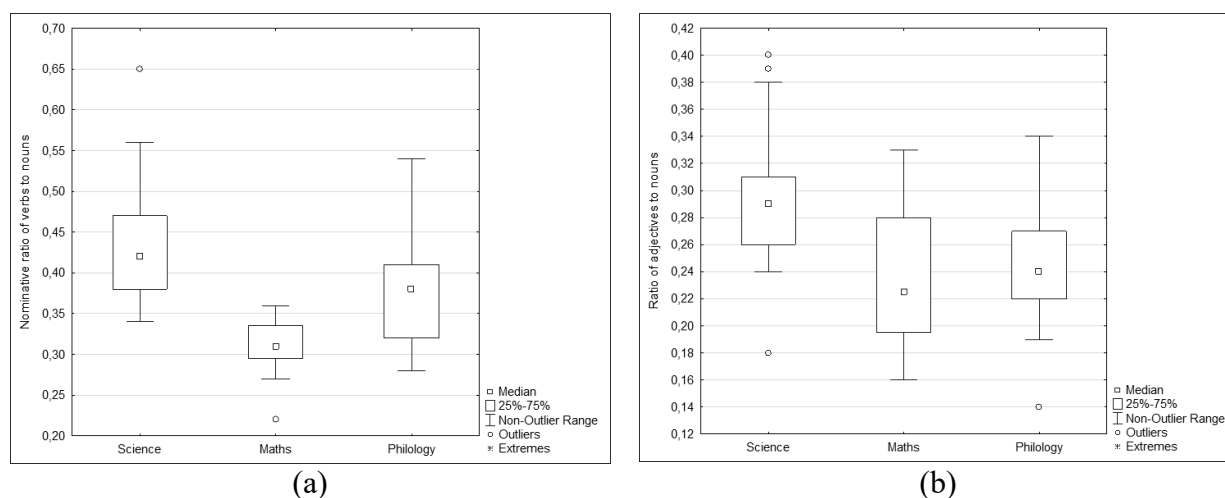


The nominative ratio of verbs to nouns also exhibits significant differences (see Figure 4 a); the highest values are observed in the natural science corpus (0.43 ± 0.07), while the lowest are in the Mathematical corpus (0.31 ± 0.03). The Philological and Natural Science texts have similar values for these features: Philology (0.37 ± 0.06) versus Natural Science (0.43 ± 0.07). Higher metrics of the

descriptive ratio of adjectives to nouns are also a characteristic of the texts of Natural Science (0.29 ± 0.05), while Mathematical texts demonstrate a low descriptive ratio – 0.23 ± 0.05 . The metrics of Philological texts (0.25 ± 0.04) in this respect are similar to the metrics of the Mathematical texts, rather than the ones of Natural Science ones (see Figure 4b).

Figure 4. a) Ratio of verbs to nouns; b) Ratio of adjectives to nouns

Рисунок 4. а) Отношение глаголов к существительным; б) Отношение прилагательных к существительным

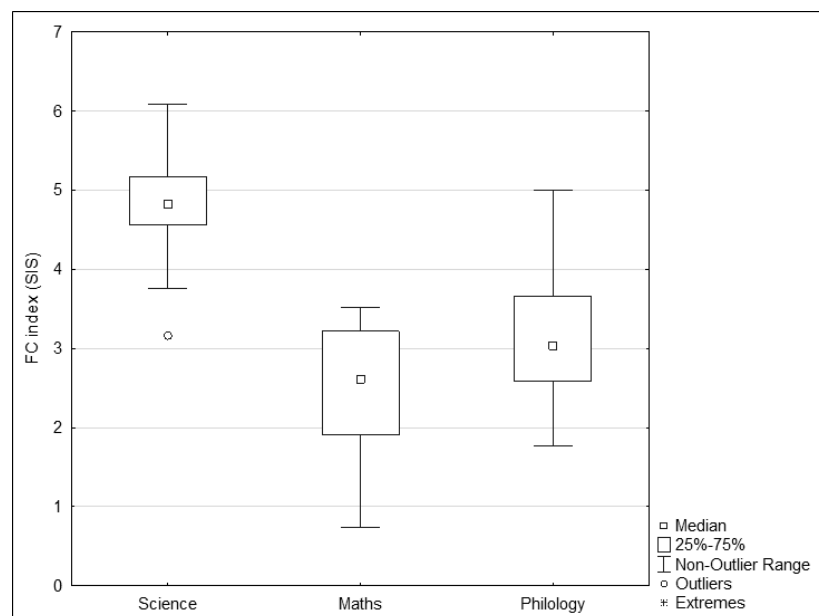


The Flesch-Kincaid index (SIS) is highest in natural science texts (4.83 ± 0.59), while the metrics are quite similar in in

Mathematical (2.51 ± 0.81) and Philological (3.18 ± 0.82) texts (see Figure 5).

Figure 5. Flesch-Kincaid (SIS)

Рисунок 5. Индекс Флеша-Кинкейда (SIS)

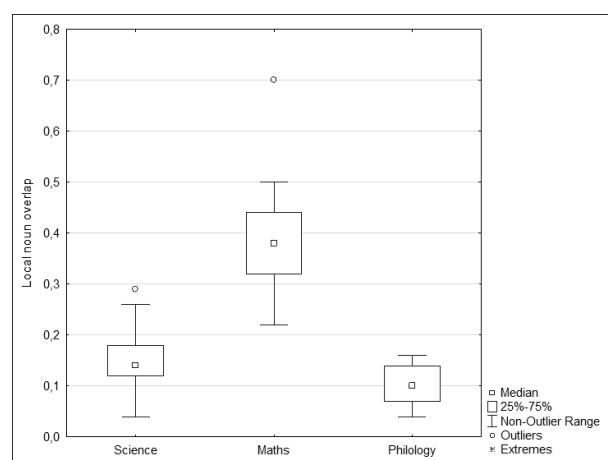


Mathematical texts demonstrate significantly higher metrics of local noun overlap ($LNO=0.39 \pm 0.10$) and local argument overlap ($LAO=0.69 \pm 0.12$). The values of these features are the lowest in the

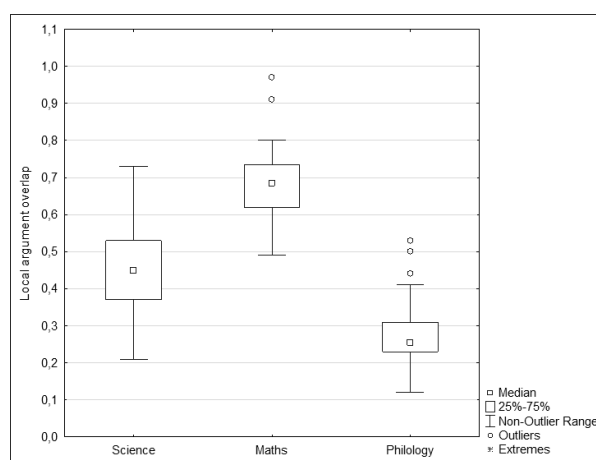
Philological texts ($LNO = 0.10 \pm 0.04$, $LAO = 0.28 \pm 0.10$), while the metrics for Natural Science texts occupy an intermediate position with $LPS= 0.15 \pm 0.06$, and $LAO = 0,45 \pm 0.13$ (see Figures 6a and 6b).

Figure 6. a) Local noun overlap; **b)** Local argument overlap

Рисунок 6. a) Локальный повтор существительных; **b)** Локальный повтор аргумента



(a)



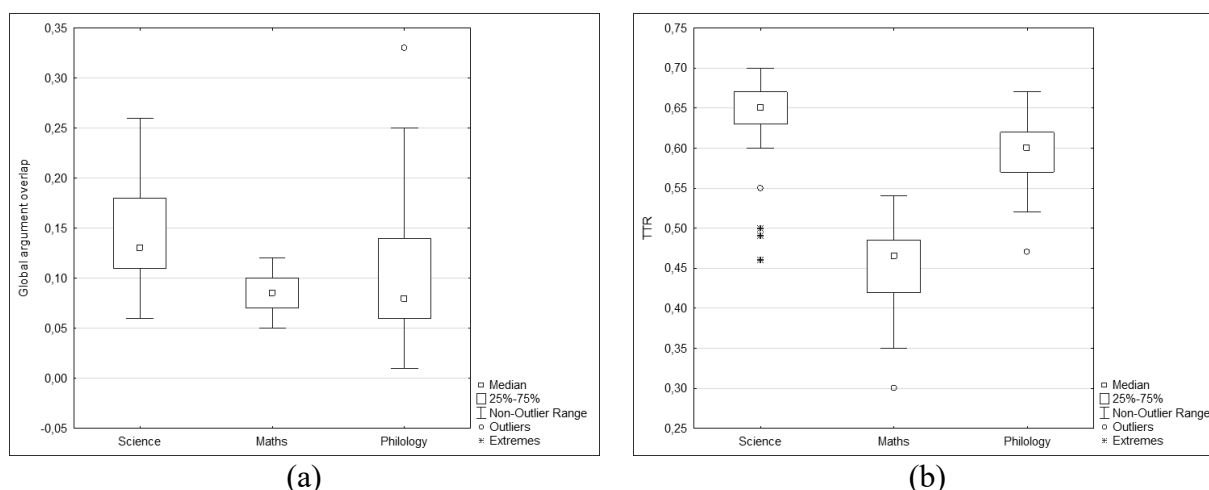
(b)

Figures 7 a and b show differences in metrics of global argument overlap (0.14 ± 0.05) and lexical diversity (TTR) (0.64 ± 0.05). Global noun overlap in the Mathematical texts (0.08 ± 0.02) are slightly

lower than in the Philological texts (0.11 ± 0.07), while the difference in the values of TTR of the Philological (0.60 ± 0.04) and Mathematical (0.45 ± 0.06) texts is higher.

Figure 7. a) Global argument overlap; b) TTR

Рисунок 7. а) Глобальный повтор аргумента; б) Лексическое разнообразие



The identified linguistic features of educational texts were used to develop a mathematical model for profiling texts of the three discourses. To design a predictive model, we employed a discriminant analysis, one of the most validated multivariate methods in style studies (Andreev, 2010: 100–110). Discriminant analysis was also used in attribution studies (i.e., authorship identification; Baayen, Halteren & Tweedie, 1996: 121–132; Holmes, Forsyth, 1995: 111–127; Stamatatos, Fakotakis & Kokkinakis, 2001: 193–214).

For the profiling technique, we used the 12 statistically significant features from Table 2. We considered a backward stepwise Discriminant Analysis that retained 5 variables (see Table 3). The discriminant analysis of the 77 texts used for training showed the following results: Wilks' Lambda $\lambda = .03821$, $F(10.140) = 57.619$, $p < .001$. The values of λ Wilks close to 0 indicate good discrimination of the contrasted objects. Based on the values of λ and F-criterion, we confirm the accuracy of the classification.

Table 3. Discriminant Analysis Results

Таблица 3. Результаты дискриминантного анализа

Features		λ Wilks'	λ Partial	F	p
1	Mean sentence length	0.067	0.760	12.633	< .001
2	Mean verbs per sentence	0.108	0.474	44.368	< .001
3	Mean adjectives per sentence	0.068	0.749	13.399	< .001
4	Local argument overlap	0.078	0.657	20.838	< .001
5	Global argument overlap	0.079	0.643	22.233	< .001

Given the test set of 10 texts, the accuracy of our model proved to be as high as

90% since 9 out of the 10 tested texts were correctly classified (see Table 4).

Table 4. Classification matrix

Таблица 4. Классификационная матрица

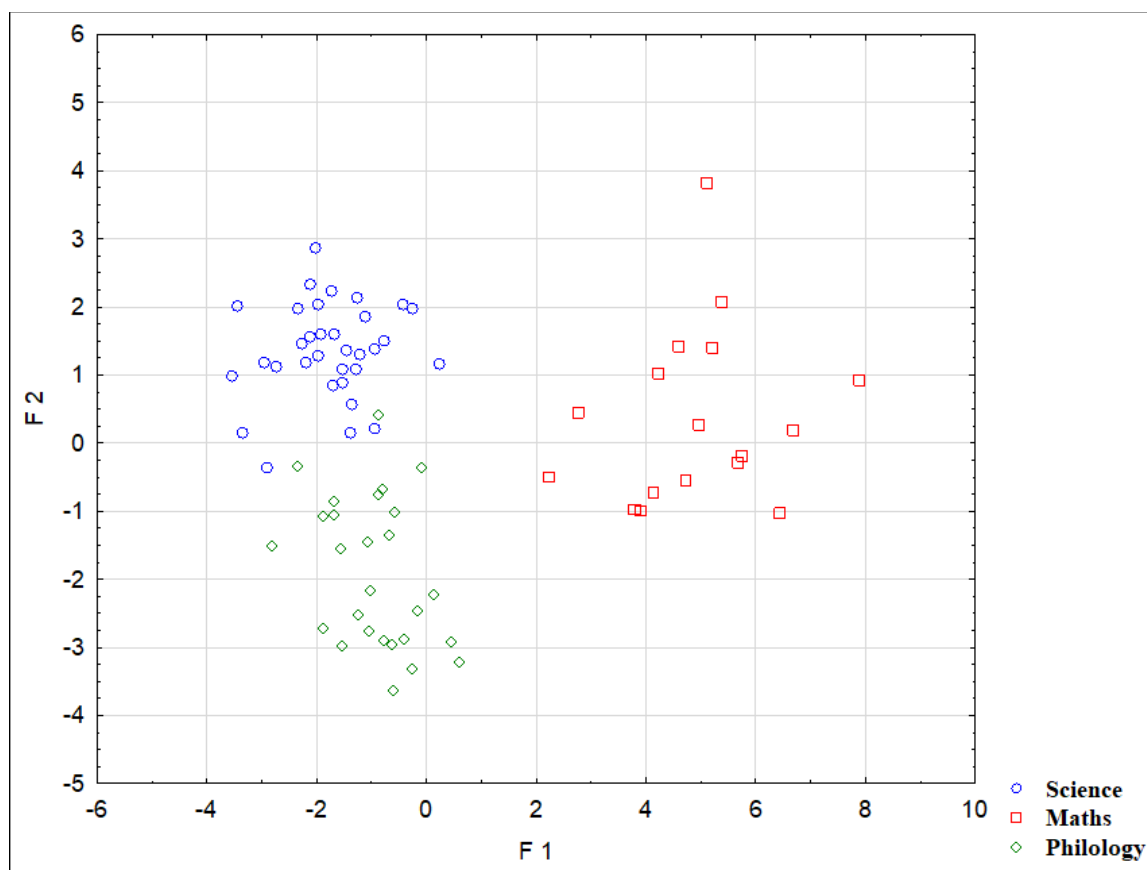
Sub-corpora	Projected Classifications			
	Accuracy (%)	Science	Maths	Philology
Science	100.0%	4	0	0
Maths	100.0%	0	3	0
Philology	66.7%	1	0	2
Total	90.0%	5	3	2

The scatterplot of the canonical values for canonical roots enables the identification of the contribution of each discriminant function in discriminating texts of each sub-corpora. As it can be seen from the diagram from Figure 8, the canonical function 1 (F1) differentiates Mathematics texts from philology and natural science texts: the higher the value of F1, the more likely it is that the text is Mathematical. Canonical function 2

(F2) enables us to differentiate Philology texts from Mathematics and Natural Science texts: the lower the value of F2, the more likely it is a Philological text. While inspecting the scatterplot, if the values of both canonical functions are negative, then the text is more likely to be classified as Philological; if the values of both functions are higher than zero, then the text is more likely to be classified as Mathematical.

Figure 8. Scatterplot of canonical values for canonical roots

Рисунок 8 Диаграмма рассеяния канонических значений для канонических корней



Based on the values of the standardized coefficients of canonical functions (see Table 5), we can define the impact of the linguistic features of the text on the values of canonical functions 1 and 2. Judging

by the coefficients, the following linguistic features have the greatest influence on these functions: mean sentence length, mean verbs per sentence, and mean adjectives per sentence.

Table 5. Standardized coefficients of canonical functions

Таблица 5. Стандартизированные коэффициенты канонических функций

Text features	Acronym	Canonical Functions	
		F1	F2
Mean sentence length	M(Sen/L)	1.081	0.095
Mean verbs per sentence	M(VB/Sen)	-0.915	0.723
Mean adjectives per sentence	M(JJ/Sen)	-0.728	0.350
Local noun overlap	LocalNNOver	0.716	0.335
Global argument overlap	GlobalArgOver	-0.598	-0.035

Thus, the formulas for classifying texts by subject discourse are as follows:

F(Science) = -

$51.46 + 0.74 * M(\text{Sen/L}) + 47.67 * M(\text{VB/Sen}) + 21.75 * M(\text{JJ/Sen}) + 18.59 * \text{LocalNNOver} + 26.48 * \text{GlobalArgOver}$

F(Maths) = -

$51.21 + 7.65 * M(\text{Sen/L}) + 5.78 * M(\text{VB/Sen}) + (-7.56) * M(\text{JJ/Sen}) + 97.95 * \text{LocalNNOver} + (-44.34) * \text{GlobalArgOver}$

F(Philology) = -

$23.77 + 1.31 * M(\text{Sen/L}) + 28.55 * M(\text{VB/Sen}) + 11.93 * M(\text{JJ/Sen}) + 9.72 * \text{LocalNNOver} + 19.63 * \text{GlobalArgOver}$

Discussion

Text analysis showed that the educational texts from the three discourses exhibited statistically significant differences. For example, Natural Science texts differ from classroom texts on the Russian language and Mathematics by having longer sentences and higher nominative and descriptive ratios. The latter is probably caused by differences in their functions: Natural Science texts are supposed to create a holistic picture of the world and broaden the readers' horizons. An additional specific feature of Natural Science textbooks considers the constituency of the sample that includes texts from natural history, social science, and historical facts; as

such, longer and more complex sentences are more frequently encountered.

On average, the number of verbs and nouns per sentence is higher in texts of the Natural Science textbooks. This argues that the authors of these texts draw attention to the subject or object of the action (higher frequency of content words), as well as to the internal structure of events (high ratio of verbs) (see Seifart, Danielsen, Meyer, Nordhoff et al., 2012: 10). Natural science texts contain more narrations of events and more descriptions of facts than opinions; in contrast, Philological texts contain more opinions.

Mathematics textbooks have a higher nominative ratio and a larger number of nouns per sentence compared to Philological texts (see Figure 3) and the mean word length in Mathematical textbooks is lower than in the contrasted discourses. Moreover, Mathematical texts have a low lexical diversity (see Figure 7b) since Mathematics operates with specific terms (traditionally denoted by nouns), and the use of synonyms in this type of discourse is either not recommended or impossible. This can also explain the higher values of local argument overlap in Mathematical texts when contrasted to texts from the two other discourses.

Educational texts in the textbooks used to teach the Russian language in elementary school differ from texts in other discourses by having shorter sentences, arguable since a large proportion of texts are intended for memorization and further reproduction. Short sentences are necessary to develop basic skills in writing and spelling skills.

Conclusion

The academic texts from three subject discourses (i.e., Philological, Mathematical, and Natural Sciences) exhibit statistically significant differences on 12 linguistic features, namely: sentence length, word length, mean nouns per sentence, mean verbs per sentence, mean adjectives per sentence, local noun overlap, local argument overlap, global argument overlap, nominative ratio, descriptive ratio, Flesch-Kincaid index (SIS), and lexical diversity (TTR). These differences are caused by the changes in the functions of these texts and are manifested in their lexical and syntactic levels.

Based on the discriminant analysis, we designed a model of text profiling that includes 5 linguistic features, namely: mean sentence length, mean verbs per sentence, mean adjectives per sentence, local noun overlap, and global argument overlap. The automation of these features and the provided formulas for classification enable the design and development of text profilers demanded for textbook writing and editing. Our model also contributes to the design of a quantitative linguistic typology of Russian academic texts.

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Конфликты интересов: у авторов нет конфликта интересов для декларации.

Conflicts of Interest: the authors have no conflict of interest to declare.

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РАЗДЕЛ III. ЛИТЕРАТУРЫ НАРОДОВ МИРА SECTION III. WORLD LITERATURES

DOI: 10.18413/2313-8912-2022-8-4-0-9

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Posthuman and pandemic elements in the feminist retellings
of fairy tales in Marissa Meyer's *Lunar Chronicles*

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Received 02 September 2022; accepted 05 December 2022; published 30 December 2022

Abstract. Fairy tales have transcended time, space, context and their original media of propagation. Retelling or reworking familiar fairy-tale tropes has long been a literary tradition which still enjoys a position of popularity in contemporary times. This process revivifies seamlessly the literary endeavours of the ancient as well as the medieval authors. This paper explores how the *Lunar Chronicles* by Marissa Meyer, while being a feminist retelling of fairy tales, deals with posthuman concepts of biological warfare, genetic modifications, cyborgs and authoritarian autocratic regimes, set in the context of a raging pandemic sometime in the future retaining considerable literary integrity. The novels draw on the fairy tales of *Cinderella*, *Red Riding Hood*, *Rapunzel* and *Snow White*, and chronicle the eponymous female protagonists Cinder, Scarlet, Cress and Winter who take action, claim agency and collaborate to bring down the autocratic regime of the Lunar Queen Levana who in pursuit of sole ownership of natural resources, engages in murder, ruthlessly creating genetically modified hybrid super soldiers and a bio engineered pandemic. This study chronicles the posthuman facets which set the works in the foreseeable future. This paper also identifies and analyses the similarities between the strands of the fictional Letumosis pandemic and the recent COVID-19 pandemic and the significance in how fictional works can predict human response. These fairy tale retellings go to demonstrate that the tales sustain their relevance through reinterpretations and retellings that address contemporary concerns.

Keywords: Feminist retelling; Lunar Chronicles; Fairy tales; Pandemic; Posthumanism; Cinder; COVID-19

How to cite: Kalloli, A. T. and Tyagi, S. (2022). Posthuman and pandemic elements in the feminist retellings of fairy tales in Marissa Meyer's *Lunar Chronicles*, *Research Result. Theoretical and Applied Linguistics*, 8 (4), 123-131. DOI: 10.18413/2313-8912-2022-8-4-0-9

Introduction

The number of contemporary fairy tale retellings, with the amalgamation of a feminist bent and science fiction, has increased dramatically in recent years, especially in the realm of young adult literature. While this expansion indicates change and combines formerly magical-based stories with technological progress, the impact of integrating science and magic warrants further exploration, especially in the light of the turn of events since 2020. The incorporation of cyborgs, androids, and other artificial beings into fairy tales is a relatively new phenomenon with a growth of considerable interest since 2010s, with the debut of Marissa Meyer's *Cinder*. The 'Lunar Chronicles' is a collection of Four Novels: *Cinder*, published in 2012, *Scarlet*, published in 2013, *Cress*, published in 2014 and *Winter*, published in 2015. She also published a novella titled *Fairest* in 2015, whose events place it chronologically before the final novel *Winter*, and the compilation of short stories *Stars Above*, both of which contain elements that tie in to the events of the novels or are standalone narratives which occur in the same universe. The two graphic novels *Wires and Nerve* and *Wires and Nerve Gone Rogue* are also considered to be under the umbrella of the Lunar Chronicles collection. The works are a postmodern, post-human and feminist retelling of fairy tales set in the context of a raging pandemic called 'Letumosis or the Blue fever'. This paper endeavours to explore the elements of posthumanism in the backdrop of the pandemic arrayed in the feminist revisioning in the four novels.

The plot of the Lunar Chronicles takes place in a future world a century and a half in the socio-political milieu of post-World War IV, where new empires and coalitions are founded and the moon is colonised. Each novel traces the lives of a fairy tale figure. *Cinder* (Cinderella) is a cyborg mechanic from New Beijing in the first book, *Scarlet* (Red Riding Hood) is a French spacecraft pilot in the second, *Cress* (Rapunzel) is a computer hacker in the third, and *Winter* is the Lunar queen's stepdaughter in the last

volume (Snow White). The moon, Luna, is governed by the charmingly tyrannical Queen Levana who intends to marry Prince Kai of the Eastern Commonwealth, the emperor of the Earthen Union's most powerful kingdom. She will indeed dominate both Earth and Luna should she secure this relationship. Lunars have particular abilities, like the capacity to alter bioelectricity or employ glammers, that allow them to appear attractive and manipulate people, which is one of the reasons the Earthens first oppose Kai and her alliance. However, in order to force Earth to comply with her goals, Levana engages in the unthinkable, as revealed in *Winter*:

We thought this war began when her special operatives attacked those first fifteen cities, but we were wrong. This war began when Letumosis was manufactured in a Lunar laboratory and brought to Earth for the first time. All these years, she's been waging biological warfare on us, and we had no idea (Meyer, 2015: 130).

Only gifted Lunars are immune to this disease. While Levana has created an antidote, its availability to those affected and in dire need around the world depends on the young emperor Kai's consenting to marry her and making her an empress of the Eastern Commonwealth. Levana thus wields significant influence over earth and the Eastern Commonwealth in particular.

Feminist Retelling of Fairy Tales

"Stories that survived centuries, such as epics, myths and parables, often entail extraordinarily rich elements, with their narrative values widely recognized since the emergence of the field of psychology e.g., Freud's Oedipal Complex and Jung's archetypes" (Zhu and Zheng, 2021: 1). These tales provide insight through imagery and themes that serve as means for meaning construction rather than by explicitly stating any truths or doctrines. Throughout recorded existence, heroic tales notably have been recounted and retold several times, yet with each recounting comes a fresh and current viewpoint, according to Campbell and

Neimeyer et al (2010). "The fairy tale genre is old and closely intertwined with folk tales, myths and stories of wonder. The fairy tales we know now have evolved from multiple cultures and are sometimes centuries old. At first, a fairy tale was a simple, imaginative oral tale containing elements of magic and miracle. Before they were written down and became fixed texts with conventions of narration and reading" (Kersten, 2018: 19), these wonder or magical tales underwent many transformations. Even then, and up to the present day, fairy tales have been rewritten (Zipes, 1988: 135). The fairy tale is a nebulous and fluid genre due to its various intertextual borrowings among authors and iterations. The word "fairy tale" is a broad concept, and it's complicated to encompass all of its plotline patterns, common motifs, and narrative functions in categorising it as children's stories (Carney, 2012: 5).

"Through these fairy tales, the unsettled fantasies, fears and ideologies of the male members in societies have been transformed across generations... transcribing moral and social messages mostly with respect to androcentric ideologies, perpetuate the self-admiring, self-stimulating and self-congratulatory masculine point of view and push women to the side of the HIsTory by keeping them on the kitchen side and/or the bedside" (Nazlipinar Subasi, 2022: 427). The romantic constructs of fairy tales could hold sway, not only among children and adolescents but also in "adult women's experiences, who internalize romantic patterns from ancient tales and continue to tailor their aspirations and capabilities to conform with romantic paradigm" (Haase, 2000: 17). The feminist literary scholar Carolyn G. Heilbrun in 1979, offered 'Grimm's Fairy Tales' as an example of cultural texts whose models of male selfhood could be adopted and reinterpreted by women in light of their own search for identity (Haase, 2000: 19). But it is the books, movies, and television shows that completely reimagine traditional folk and fairy tales for a new generation that are the true "revolution"

in folk and fairy tale retelling. Folk tales are adaptable by their very nature as a form of storytelling, and fairy tale retelling "symbolically seeks to represent some unquestionable natural state of being, [and] postmodern fairy tales seek to expose this state's generic and gendered 'lie' or artifice" (Bacchilega, 1997: 93). Bacchilega asserts that while fairy tales present a distorted mirror image of our world, postmodern fairy tales attempt to expose the distortion.

Many academics and authors have begun to challenge the androcentric depictions of women in fairy tales, which typically show them as pliable objects for male desires. They do this by "creating a new world for wo/men where they can articulate their unspoken desires and feelings. Within this scope, the number of the feminist/queer criticisms and re-writings of fairy tales has accelerated since 1960s" (Nazlipinar Subasi, 2022: 427), and the patriarchal stereotype of the woman as a "passive, victimised, destroyed, or asleep" (Dworkin, 1974: 48) waiting for her Prince or a Knight in shining armour has been deconstructed. Subsequent generations see the emergence of a "self-assertive woman," aware of her own value, capable of choosing her own path, and able to forge her own future, in these subversive fairy tales, which take place in the present or foreseeable future (Nazlipinar Subasi, 2022: 428).

The stock phrases "once upon a time and they lived happily ever after are well-known fairy tale tropes, popularised by Disney" (Kustritz, 2016: 5), are now synonymous with fairy tales and its elements of a quest, a princess, princes, supernaturally charged negative and positive elements or magical creatures and so on. Rife with recognizably well-known story lines, allusions to canonical fairy tales and their popular adaptations and employing lines verbatim, The Lunar Chronicles novels are obvious retellings of the fairy tales that traces the life of a fairy tale princess.

All characters have clear references to their recognizable and original stories.

For example, Cinder lives with her stepmother and stepsisters since her father has died, and she is invited to prince Kai's royal ball, where she loses her foot. Scarlet lives with her grandmother, but when her grandmother disappears, she goes looking for her and meets Wolf. And princess Winter is the most beautiful person on Lunar, although she does not use her glamour to appear this way. To become the most beautiful and beloved queen, Levana asks one of her royal guards to kill Winter... Cress's love interest is Captain Carswell Thorne, who has stolen a spaceship called The Rampion and who becomes blinded when he tries to save her from her satellite (Kersten, 2018: 52, 53).

Both the traditional powers of fairy tales, such as magic, and the modern capabilities of science fiction, such as technology, are entangled in moral perils and probable corruption: we use them at our peril, but we are justified in using them to defend oneself and those loved.

In the Lunar Chronicles, Meyer challenges gender stereotypes by featuring two fierce female heroines, Cinder and Scarlet, as well as two demure princesses, Cress and Winter. Their male romantic partners are also categorised: Kai is the caring individual, Wolf is the rugged warrior, Thorne is the renegade reject, and Jacin is the knight in glorious armour. She also changes the sex and gender of her fairy godmother persona to male and gives her androids gender. In providing the princesses tolerant and protean conclusions, Meyer challenges the patriarchal viewpoint. Cinder turns out to be the last Queen of Luna as she willingly abdicates the throne and transfers the government into a republic. Only much later at end of the short story collection, after years of being a diplomat, activist and sorting out gubernatorial issues, does Cinder accept Kai's proposal to become the Empress of the Eastern Commonwealth and his wife. Scarlet

chooses to marry Wolf only after they settle down on her farm as equal partners of a horticultural endeavour. Cress and Thorne choose to be crew aboard the Rampion on the mission to deliver antidotes for the letumosis outbreak and decide not to be in a romantic relationship until they both feel ready. Winter, unlike the prototypical Snow White, does not wake up to the kiss of Jacin but rather recovers gradually due to the medical facilities. She chooses to help the technological development of the devices that would allow lunars to make choices without compromising their mental health and it is Jacin who wants to be at her side. The Android Iko goes on to have her own adventures (Insenga, 2018: 64).

The Posthuman

Fairy tales have remained so ubiquitous across millennia, that the premise of these stories may be leveraged to acquaint mankind with new characters, concepts, and circumstances that the world may meet in a modern, technologically sophisticated, and posthuman future. The Lunar Chronicles series by Marissa Meyer is a modern incarnation of fairy tales that presents readers to the idea of living in a posthuman world. Whilst science fiction is the most often utilised genre to portray notions of posthumanism, The Lunar Chronicles mixes features of science fiction and fairy tale motifs to create hybridized fairy tales. Fairy tales are recounted, retold, and reworked for a variety of reasons in literature and entertainment. Meyer crafts multifaceted and hybrid characters to reflect posthumanist ideals and urge readers to explore various types of beings, which makes these stories stand out.

With the inclusion of technology and science connected with posthuman and transhuman ideals, several modern young-adult fairy tale books are entangled in the propagation of ancient anxieties such as isolation and political intrigues; nevertheless, they disclose and comment on more deeply embedded cultural worries while also lauding science and technology. In addition, the

subversive and transformative essence of both fairy tales and technology generates a schism between creators and created. To fully realise the relevance of these statements, one must first grasp three concepts:

The human, the posthuman, and the transhuman. The idea of the human has the simplest definition; it is often identified as *homo sapiens* in the scientific community and is without any alterations, additions, or implants to the body or mind from outside sources. The posthuman, however, relies on the modification of the human body in some way, whether implants or prosthetic limbs, in order to make up for a loss or lack of ability, whether perceived or real, which gives way to the transhuman (Scholz, 2018: 12).

As Emily Jones simplifies, “Transhumanism is a form of posthumanism that seeks to use science and technology to extend humans (usually men) beyond their human limits” (Jones, 2022: 3). Critical posthumanism – a convergence of post-humanism and post-anthropocentrism, with the latter seeking to challenge the human subject's hierarchical position in dominant Western thought over, for example, technology or non-human animals and the environment. To intervene in the posthuman state, posthuman feminism is a stream of critical posthumanism that relies on a long heritage of feminist work, from intersectional feminism to queer feminism, cyberfeminism, ecofeminism, and xenofeminism (Jones, 2022).

Cinder veering from typical divestitures – a lack of lineage, parental neglect, hardship, and the associated societal enmity, is a good example of a hybrid human being in Meyer's characters since she is a cyborg – a blend of biology and technology and is rejected as a human by the bulk of society inside the novel's environment: ‘the socio-political atmosphere of post-World War IV New Beijing’. “I am not human. I am a cyborg. I am a mechanic. That's all I am... right?”

(Meyer, 2013). The Letumosis outbreak and an uneasy peace between Earth and the malevolent Lunar Queen cause unrest 126 years in the future. Linh Cinder's existence merely adds to the residents' fear because she is 36.28 percent cyborg in a world that is mostly unaccepting of biotechnological augmentation. Readers might ponder the possibility of tolerating various sorts of creatures in a technologically evolved society that are not typically “human” through rooting for Cinder's success. This narrative provides a context for how people are fusing with technology by using it as an efficient instrument in their daily lives, demonstrating that mankind is not really all that dissimilar to the cyborg “other.” Cinder evidently has the most complex identity considering that she's not earthen rather an alien or ‘Lunar’, in the context of the novel, a mutated form of humanity capable of unnatural powers or the gift of glamour (Caban, 2019: 6).

Meyer's novel *Scarlet* includes motifs from Jacob and William Grimm's tale best known as ‘Little Red Riding Hood’. Rather than emphasising the wolf's deliberate malice and reinforcing the terrible consequences of trusting strangers, Meyer's story invites readers to be cautious while being open-minded and empathetic to those who do not reflect the standard definition of humanity. The character Ze'ev Kesley called Wolf (a Lunar-wolf hybrid) demonstrates how his hybridity affects human nature owing to the fusing of human and animal nature. In addition, to accepting a posthuman future, the themes of agency and choice are examined. Iko, Cinder's loyal android transforms into many kinds of physicality during the series, including a refurbished android, a space freighter, and an escort droid. These transitions represent the flexibility of different states of existence. Iko presents a scenario that shows how humans might become socially hybrid with technology by embracing a posthuman being by accepting herself and being mutually welcomed by her constructed network of equally nonconformist companions (Caban, 2019: 7).

Circumstances of the Pandemic: Letumosis and COVID-19

The pandemic in the *Lunar Chronicles* evokes comparison with the very real pandemic that has wracked our world as we know it, since 2020. "In 2020, a single virus changed many of the worlds in which humans live. From restrictions on immigration, movement and gatherings, to changes to public health policy, through to economics and housing, the SARS-CoV-2 virus restructured laws and lives" (Boulot et al., 2021: 3). "It should be noted that the "coronavirus" concept has gone far beyond medicine and its terminology and has become a phenomenon of our everyday life, as well as economic, socio-political and media communication. Being a global social phenomenon and affecting all aspects of human life, changing reality at everyday and global levels" (Voyakina, 2022: 2). COVID-19 much like Letumosis in the novel, is highly contagious, fatal and capable of mutation. The origins of COVID-19 remain a cause for debate with aspersions that it is not a natural virus but one that was created in a lab and that it had dubious agendas linked to its spread, is very much reflected in the novel. The mutative nature of the virus in the books easily create parallels with the real-world scenario. The hectic dire straits caused due to the pandemic due to quarantining, lockdowns being enforced, forced separation from loved ones, unideal gubernatorial sanctions, the political, economic and social crises due to suspension of trade and lack of resources are dealt with in the novels. "Letumosis. The blue fever. Worldwide pandemic. Hundreds of thousands dead. Unknown cause, unknown cure" (Meyer, 2012: 38), is how the disease's nature is described in the first novel. On reading the novels one is able to glean that Letumosis is an airborne infection that has killed millions of people worldwide. These aspects allow one to easily draw parallels to the nature of the corona virus causing COVID-19. Letumosis features four stages: the first is an incubation period, followed by a blotchy rash. The visible indicators of the

bluish lesions being the reason the disease is called the blue fever. In the third stage, the weakened patients develop a fever. In the fourth and final stage, their skin turns yellow and flaky, and the patches engulf the patient's torso. Patients swiftly meet their end on approaching the fourth stage. Lunar shells are initially theorized to have brought and spread letumosis to Earth but have in fact been unwitting carriers of the infection much like the international travellers of our world. The leading political concerns in the novel are tied to finding a vaccine, cure or antidote to the pandemic. Much like in our world, the underprivileged were at an unfortunate end especially with regard to being entailed to go in for clinical trials for the development of vaccines.

Subjects had been carted in from provinces as far-reaching as Mumbai and Singapore to act as guinea pigs for the antidote testing. It was made out to be some sort of honour, giving your life for the good of humanity, but it was really just a reminder that cyborgs were not like everyone else. ... It's only right that they should be the first to give up their lives in search for the cure (Meyer, 2012: 24).

The state of affairs on earth as described in the novel due to a pandemic, such as being in a state of paranoid caution, the youth in a state of hopelessness, loss of avenues of structured education and a condition that makes people willing to do anything to get a normal life again, despite the state of a pandemic induced emergency slowly becoming the new normal serves as a prediction. This bears an eerie connection to the results of the real-life survey conducted by the United Nation representatives in Geneva. "The global survey 'Youth & COVID-19: Impacts on jobs, education, rights and mental well-being' aimed to capture the direct physical and mental impact of this virus on their everyday lives" with the results showing that that 65% of young adults claimed they had learned less than they had before the COVID-19; 51% thought their educational

trajectory had been impeded; and 9% anticipated they would fail their courses. One out of every six students would no longer be able to attend school or a training centre as a result of closures. The impact of disadvantaged female young adults in certain areas of the world, where being trapped in their homes means sliding back into a cycle of conventional family responsibilities and forced marriages, is significant. Instances here include shutdown of schools, colleges, and training centres as well as a lack of tools to live at home, such as access to the internet. But for all the bleakness of the scenario, much like in the series, the youth of the world despite their hapless circumstances were proactive. The survey also reveals “1 out of 4 young adults have acted as volunteers in their community and are not afraid to speak out and fight for equality and safety during this crisis” (De Vos, 2020)¹. While the pandemic reinforces inequities through automated process-based discrimination and surveillance, it also provides opportunities for progressive transformation toward the humanization of the posthuman via human–nonhuman assemblage and greater reliance on technological advances in Artificial Intelligence in general. As a result, COVID-19 is more than just a catastrophe marking the denouement of the ‘old normal.’ It is the recent instance in which existential crises spark creativity in society, resulting in new discourses, behaviours, and infrastructures. Much of this begs the question: “What are the implications for pandemic-era’s cultural shaping of the digital?” (Qiu, 2022: 1).

Observations

The Lunar Chronicles, like several other retellings from the preceding two decades, demonstrates how people unite together to defeat despotic leaders like Levana. Because of Cinder's prior insurrection against Levana,

which shows that the opposition may prevail against Levana's government, the disadvantaged and marginalized residents of Luna trust her resistance in *Winter*. To thwart deadliest threat, People of earth and Lunars, who have been secluded and divided for aeons, must work together. *Winter* reveals how the characters of the three preceding books aid Cinder/Selene in seizing control of Luna. Despite the danger, the other characters stand beside Cinder. This story emphasises free will and individual agency. The characters voluntarily assist Cinder; they are not required to. Cinder allows individuals to choose whether or not to help her, as opposed to Levana, who manipulates them.

In the story's resolution, the cooperation between the characters is shown to the reader to continue even after Cinder abdicated her monarchy, proving that collaboration to bring about social, political, or cultural change does not end with the fall of an authoritarian. All of the protagonists enable Cinder/Selene get the power she needs to re-establish Luna, become its new ruler, disseminate the leutomosis vaccine across Earth and Luna, and restore the cities that the Lunar army devastated. (Lykissas, 2018: 312). Though at first glance, collaboration against tyranny may seem utopian, it has occurred throughout history. Most notably by the Allies in World War II, how most Asian nations reclaimed their independence and sovereignty. These cases use collaboration to resist the tendency to separate rather than unite.

Unlike the original tale generating phallogocentric discourses and presenting them as the norm, Meyer allows for different types of ‘happy endings’ for the leading ladies in the Lunar Chronicles which is not up to their male leads. Thus, she celebrates the fluid aspects of nature and refuses to entirely parrot patriarchal sex and gender roles “to challenge both our gender expectations and moral expectations, pushing readers toward a larger spectrum of possibilities” (Didicher, 2020: 49). In the light of the contemporary wave of retellings of a fairy tale or mythical nature, Meyer's “expansion of gender roles is mainly

¹ De Vos, B. (2020, August 27). *The impact of the Covid-19 pandemic on young adults - Soroptimist International*, Blog by Berthe De Vos, SI United Nations (UN) Representative in Geneva, retrieved from <https://www.soroptimistinternational.org/the-impact-of-the-covid-19-pandemic-on-young-adults/> (In English)

adding traditional stereotypes back into the spectrum of possibilities, not adding characters with genders and sexual orientations beyond the cisgendered and heterosexual binaries” (Insenga, 2018: 64). The kinds of which are now expected in the genre of young adult fiction and fictional retellings of current times.

Conclusion

Young adult literature's adaptation of fairy tales to tackle current challenges enables the stories keep their relevance. Postmodern and feminist literary theories emphasise this. This study comes to the conclusion that young adult popular fiction might indeed engage with diverse audiences while addressing adult issues. Such feminist fairy tale retellings are the bridge that stems from the familiar to the novel while crossing the tumultuous cataract of real-world catastrophes and the imbalance that the posthuman condition can cause. They address concerns of the youth of the century, suggest viable and optimistic solutions, while keeping them entertained.

This exploration of Marissa Mayer's novels ushers the understanding that postmodern retellings of fairy tales can address much more than its predecessors. Being more than a cautionary tale or a narrative of a magical fantastical quest and living happily ever after with a handsome prince who solved all the princess' problems, they manifest their latent potential. In employing a futuristic or posthuman revisioning and a feminist lens, *The Lunar Chronicles* show that the solution to unfair authoritarian regimes and systems is to form or forge friendships. To unite and let diverse traits, capabilities, backgrounds and conditions bring people together and make them stronger. *The Lunar Chronicles* gain significance from the fact that it has largely predicted the state of the human condition and the inadequate response to a fatal airborne pandemic.

The Fairy Tales Retellings under study posit that the youth of the world regardless of gender, culture, creed, race and physical conditions put their foot down and declare

that they will have no part in the politics of hatred and wars of destruction waged in the interests of autocratic and authoritarian regimes in a scheme for unchecked power and access to resources. The novels also propose that the youth accept their diversity as a catalyst to help achieve a world where the growth of science, technology and medicine ensures equality, equity and a heightened quality of life free of disease and conditions that plague the value of human life.

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Конфликты интересов: у автора нет конфликта интересов для декларации.

Conflicts of Interest: the author has no conflict of interest to declare.

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