

Popularisation of medical knowledge in online forums

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Članek raziskuje ruski poljudnoznanstveni medicinski diskurz, in sicer z vidika popularizacijskih strategij, ki se uporabljajo v interakciji med strokovnjakom in laikom. Pri tem je treba strokovno znanje približati nestrokovnjaku na način, ki mu omogoča razumevanje. Raziskava je nastala zaradi opažanj o pomanjkanju jasnih smernic za interakcijo strokovnjakov z laiki (uporabniki spleta) in zaradi izzivov, s katerimi se nestrokovna publika sooča pri poskusih razumevanja abstraktnih in/ali neznanih medicinskih konceptov. Ugotovitve podpirajo izhodiščno tezo, da strokovnjaki pri komuniciranju z nestrokovnjaki uporabljajo drugačno retoriko, razlagalne strategije pa jim pomagajo interpretirati strokovno vsebino. V članku so prikazane strategije, ki se uporabljajo za razlago strokovnih konceptov nestrokovnjakom.

The article investigates Russian popular medical science discourse which has barely been studied in terms of popularisation strategies used in expert-lay interaction where a set of specialised concepts needs to be displayed in a way that enables a lay audience to understand them. The study was, thus, motivated by the lack of guidance for interacting with non-expert lay Internet users, and challenges faced by them in attempting to understand unfamiliar medical concepts. The findings support the study's central argument that experts use a different rhetoric to communicate with a lay audience than they use with their peers, and the explanatory strategies help them to overcome the incomprehensibility of expert discourse, indicating that efforts should be undertaken to explain specialised concepts to non-experts.

Ključne besede: pojasnjevalna strategija, asimetrija znanja, medicinski diskurz, populariziran diskurz

Key words: explanatory strategy, knowledge asymmetry, medical discourse, popularised discourse

1 Introduction

In the 19th century the need to make science more accessible to a lay audience contributed to the emergence of popular science discourse. This need has been growing increasingly with the emergence of new technologies, including

the Internet, that bring with them new communicative dynamics which affect specialised discourse (Antelmi 2011). The number of popular science texts in online format is increasing constantly. In contrast to research articles, popularisations are addressed to a non-expert audience providing readable information in an accessible way. Although they deal with specialised issues, explanatory strategies used by expert authors make them targeted to a wide public.

It is well known that the understanding of a medical text can be arduous for non-experts. On the contrary, popularisations use more informal language, sometimes including conversational style. Being addressed to a lay audience, popular science magazines and forums play a crucial role: The authors of popular science texts act as mediators between the scientific content and popularised information which should become accessible to a lay audience through the right choice of lexicon that they consider transparent for lay readers. Hence, it is important for authors of popular science texts to use understandable language, where explanatory strategies are essential.

The present paper analyses explanatory strategies in popularised medical texts posted on the Russian-language health website *www.zdorovieinfo.ru*. The aim of this research is to explore the explanatory strategies used by medical reporters in popularised medical texts, which offers an interesting ground for the study of popularisation discourse production, since knowledge asymmetry in the medical field determines the potential for the communicative conflict that tends to materialise in the use of different strategies for knowledge representation.

The study intends to answer the following questions:

- (1) What functions explanatory strategies used by medical reporters perform in the popularisation of medical knowledge?
- (2) What types of explanatory strategies dominate in this type of discourse?
- (3) What linguistic markers signal these strategies?
- (4) Do medical reporters resort to semantic variation, or limit a set of linguistic means of popularisation?

Hence, this article has two focal points: It contributes to supporting the view of popularisation and examines the explanatory strategies employed to explain medical concepts in Russian popular medical science discourse.

Despite the fact that the issues of popularisation and specialised knowledge dissemination have attracted many discourse analysts (e.g. Anesa 2016; Anesa & Fage-Butler 2015; Cacchiani 2018; Calsamiglia 2003; Ciapuscio 2003; Fage-Butler & Jensen, 2013; Gotti 2011; Turnbull 2018), the ways in which specialised medical knowledge is re-contextualised and constructed on Russian-medium medical websites have not been analysed systematically, and the explanatory strategies used in Russian popular medical science discourse have barely been studied from the perspective of knowledge asymmetry. However, in the last decade, especially in the COVID-19 era, it has become natural for lay people in Russia to look for medical information online, to get the idea of what steps

they should take in this or that health-related situation. Lay people get most of their health news and information from the Internet. Making medical information available for a lay audience plays a crucial role in making citizens aware of medical issues related to their health.

The remainder of this article is divided into four sections. Following this Introduction, the ‘Current study’ section describes the methods employed to analyse the explanatory strategies and the corpus, including the corpus selection criteria. The ‘Theoretical framework’ section reviews works that deal with knowledge asymmetry and the explanatory strategies employed in specialised texts. It investigates the theoretical concept of popularisation, with particular reference to the popularisation and co-construction of medical knowledge in popularised discourse. Following the theoretical part, the analytical section focuses on the main popularisation processes realised through explanatory strategies. Finally, further research avenues are outlined in the ‘Conclusion’ section.

2 The current study

2.1 Corpus design

The data were drawn from the Russian *www.zdorovieinfo.ru* website, where medical reporters post their views on various health-related issues. Medical reporters are usually journalists who are experts in medicine, and who act as mediators recontextualising scientific information to make it comprehensible and useful to a lay audience.

The website under study represents an interesting locus to explore a specific type of discourse. On the one hand, its content brings it closer to scientific articles. On the other hand, it is free from literary canons and not constrained by the rigour of science. Different lexicons (metaphors, definitions, descriptions and examples vs specialised terminology, Latinisms, technical expressions and acronyms), different pragmatic functions (knowledge dissemination vs knowledge sharing), different types of audience (lay audience vs members of the medical community), and different media (mass media, blogs, forums vs scientific articles and conference papers), indicate the different generic nature of discourse of popularisation and the discourse of science.

The website under consideration, designed to disseminate health-related knowledge and inform a lay audience about important discoveries, has a particularly clear layout. It is organised into different medical fields, which are then further subdivided into sections, with a specific focus on different medical issues such as female health, sports and fitness, food, lifestyle, symptoms and treatment, child health, etc.

To compile the corpus for this study, the articles were selected based on the following criteria: 1) Thematic variety; 2) The presence of explanatory strategies: The articles were required to contain reformulations, definitions,

denominations, metaphors, examples and scenarios; 3) Recency: All posts date back to the period between March 2020 and March 2021, as the aim is to focus on synchronically comparable texts.

The texts that met these criteria were shortlisted and selected to build the corpus. The main focus was on the explanatory strategies, their frequency and linguistic means that signal them in the text. The built corpus provides authentic examples to explore how explanatory strategies may be used to popularise medical knowledge in online popular science articles. It comprises 321 popularised medical articles totalling 1.2 million words. The articles deal with a variety of medical issues: Female health, Cardiology, Endocrinology, Dermatology, Nutrilogy, a healthy lifestyle, and Cancerology. This compilation provides relevant contextual information, which makes it useful for a context-based analysis, and makes available many instances of the target features replicating the language using the experience of healthcare community members.

2.2 Research methodology

This study aims to describe the explanatory strategies employed to communicate medical knowledge to a lay audience. To comply with this aim, the study employed both quantitative and qualitative analyses. A manual analysis of the corpus texts was used to identify explanatory strategies based on the signalling markers. Metaphors were identified at the level of individual word tokens using the Metaphor Identification Procedure (Pragglejaz Group 2007).

In order to go beyond a mere list of the explanatory strategies typically employed in popularised articles, the study applied the interpretative method. The qualitative analysis does not employ statistical data concerning the quality of data, and was carried out to analyse and describe the types of explanatory strategies and their functions. In this study, it was focused on the ways medical information was popularised and transferred from specialised knowledge to everyday language to enable lay readers to understand it. This popularisation was investigated through the analysis of explanatory strategies, with the focus on those which emerged significantly in the corpus, namely, denominations, definitions, reformulations, metaphors, examples and scenarios. The quantitative analysis identified the frequency of occurrence of explanatory strategies, definitions and denomination, reformulation and exemplification markers. The results were summarised in a tTable format.

3 Theoretical framework

The theoretical framework for the macro-linguistic analysis is studies of popular science discourses which consider popularisation as the process that involves experts and a lay audience.

The concept of popularisation is commonly defined as an interactive construction and exchange of knowledge on a verbal and nonverbal level (Reinhardt & Stattkus 2002: 537). Traditionally, popularised knowledge has been considered distorted, which might be due to the distance between the scientific content and its popularized version. As Hilgartner (1990: 519) put it, popularisation can be considered both as a positive and a negative process: At best, it is appropriate simplification of science for non-experts; at worst, it is pollution or distortion of science. Similar to Hilgartner, Gregory & Miller (1998: 85) claimed that “popularisation is essentially an act of persuasion”. On the contrary, Bucchi (1996) held that the term ‘distortion’ only makes sense by reference to the most outdated models of communication. Knowledge is transferable without significant alterations from one context to another, so that it is possible to take an idea or result from the scientific community and bring it to the lay audience.

According to Calsamiglia (2003), the concept of popularisation, which has been interpreted as vulgarisation, debasement, translation, transposition or reformulation, should be rethought to include the process of recontextualisation. Calsamiglia and van Dijk (2004: 370) defined popularisation as “a vast class of various types of communicative events or genres that involve the transformation of specialised knowledge into ‘everyday’ or ‘lay’ knowledge, as well as a recontextualisation of scientific discourse”. In the same vein, Ciapuscio (2003: 210) employed the concept of recontextualisation to describe the popularisation discourse, and defined recontextualisation as putting something in a different context and creating a new context for it. Similarly, Sarangi (1998: 307) described popularisation as a transfer and transformation of discourse into texts divorced from the social interaction that created them. The researcher has emphasised the creative nature of the process.

Attempts to define the concept of popularisation as the process of intralingual translation was made by Gotti (2011: 16) who claimed that the popularisation process does not alter the content as much as its language, which needs to be remodelled to suit a new target audience.

A different methodological approach was adopted by Anesa (2015: 125) who argued that popularised knowledge is “a recontextualised form of knowledge which is constructed through expository tools which are different from those used in intra-specialist contexts”. Similar to Sarangi (1998), she saw popularisation as a creative and productive process of recontextualisation intended to generate a new context where professional language is used differently.

In this article, which has adopted the cognitive approach, knowledge popularisation is considered to be a process of discursive accommodation of specialised contents to the knowledge base of a lay audience, which implies the alignment of the cognitive levels of participants through a set of explanatory strategies. Accommodation is defined as the process by which linguistic structures are modified to make specialised contents comprehensible and relevant to an audience of non-experts and eliminate the knowledge gap.

On the microlinguistic level, the theoretical framework is based on the studies of discursive strategies identified in corpora of specialised texts intended for the explanatory purpose. These include Anesa (2016), Anesa and Fage-Butler (2015), Boginskaya (2020), Calsamiglia and van Dijk (2004), Ciapuscio (2003), Fage-Butler (2013), Gotti (2014), Gülich (2003) et al. The first work on explanatory strategies in medical discourse was Gülich's (2003) study of medical knowledge transfer to non-experts in face-to-face communication. Her analysis focused on procedures of illustration, which are often combined with reformulation procedures. Ciapuscio (2003) explored the oral interaction between scientists and specialised journalists that precedes the writing of science popularisation texts targeted for the lay reader, and assessed two types of recurrent formulation procedures: Illustration and reformulation. The analysis of a corpus of texts about the sequencing of human genomes conducted by Calsamiglia and van Dijk (2004) identified a group of tools employed for the management of expert knowledge. Besides the metaphors conceptualising abstract categories, and sequencing as decodification, they found that descriptions of new objects tend to be organised using a limited number of fundamental categories. Balteiro (2017) dealt with metaphors as simplification tools in medical discourse, and concluded that metaphors may be the only way for non-experts to understand abstract scientific issues which, otherwise, would not have been popularised, transmitted or translated to them successfully.

The previous studies on popularisation discourse allowed me to build up an integrated taxonomy of explanatory strategies employed to popularise medical knowledge and fill the knowledge gap in interactions of healthcare professionals and lay readers of Russian-language popularised medical articles.

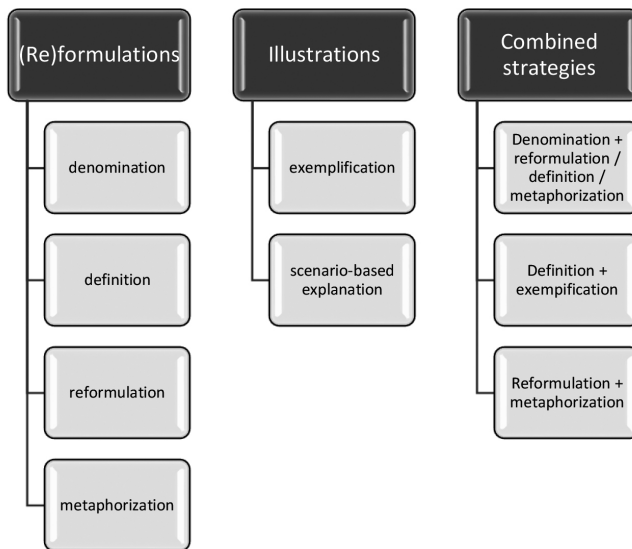


Figure. 1: Strategies of explanation as medical knowledge popularisation tools

Taking into account the great number of taxonomies of explanatory structures used in popularisation discourse, I suggest that these types of strategies cover the explanation process in popular science medical discourse fully. All of these strategies have referred to instances of explanation applied to the conceptual level of discourse as they try to draw from experiences familiar to non-experts.

(Re)formulation strategies

- Denomination is a strategy introducing new concepts after their explanation.
- Definition is a strategy that entails an explanation of specialised terms through various categories, such as composition, quantity, size, localisation, time, properties, process, functions, etc. (Calsamiglia and van Dijk 2004: 379).
- Reformulation is a strategy “whereby the second unit is a restatement or elaboration of the first in different words, to present it from a different point of view and to reinforce the message” (Hyland 2007: 269).
- Metaphorisation is a strategy that involves talking about one thing in terms of another on the basis of some perceived similarity between them (Semino 2008: 1). It is often employed to communicate about experiences that are abstract or complex in terms of experiences that are more concrete and simpler, contributing to explaining a medical-related phenomenon in a simpler way.

Illustration strategies

- Exemplification is a strategy through which “meaning is clarified or supported by a second unit which illustrates the first by citing an example” (Hyland 2007: 270). This cognitive model is easier to understand, and useful as a popularisation tool used to eliminate confrontations between different epistemic cultures and create reader-friendly texts.
- Scenario-based explanation is a strategy that involves drawing up possible situations, events or reactions (Brünner 1987; Gulich 2003), creating possible, but imaginary situations, to explain complex facts (Ciapuscio 2003: 213). As a type of illustration, scenarios touch on the readers’ everyday activities, and represent a way to formulate a hypothesis about potential conditions, actions and consequences.

Explanatory strategies combined

Explanatory strategies can be combined, with the aim to disseminate specialised knowledge more efficiently. Among the most commonly used combinations of explanatory strategies are *denomination + reformulation / definition / metaphorisation*; *definition + exemplification*; *reformulation + metaphorisation*. It should be noted that metaphors, scenarios and examples are commonly used as supporting strategies of explanation, being preceded or followed by main strategies such as denominations, reformulations or definitions.

4 Findings

This part of the paper will focus on four types of (re)formulations and two types of illustrations, employed to represent medical phenomena in Russian popularised medical texts.

1. Denomination

As mentioned before, denomination entails the introduction of new concepts after their explanation.

- (1) *Болевой синдром, наличие ограничений подвижности позвоночника и нарушенных функций легких **относят к** дорсопатии.*

Pain, limited spinal mobility and lung dysfunctions are referred to as dorsopathy.

The explanation, including symptoms of dorsopathy, is followed by the denomination. The semantic structure of this explanation is based on the classification semantic features.

Table 1 shows the most commonly used denomination markers as a percentage of all such markers found in the corpus. The dominance of the first two markers over the other ones indicates that Russian medical experts do not resort to semantic variation in their writing.

Table 1: Frequency distribution of the denomination markers in the corpus (% of total)

Marker	Totals
Называется (is called)	41
Относится (is referred to)	32
Означает (means)	27

2. Definition

In popularised medical texts, definitions play a crucial role in explaining abstract concepts to lay readers. Here is an extract from the corpus which contains a definition of the medical term:

- (2) *Артериовенозная мальформация головного мозга – это клубок аномальных кровеносных сосудов, соединяющих артерии и вены в головном мозге.*

Arteriovenous brain malformation is a **tangle** of abnormal blood vessels that connect arteries and veins in the brain.

Here is a definition of the medical concept *рецидивирующая боль* (recurrent pain). The verb *определяется* (is defined) is used as a definition marker.

- (3) *Рецидивирующая боль в животе определяется как три или большее количество приступов боли в животе в течение трех месяцев.*

Recurrent abdominal pain is defined as three or more bouts of abdominal pain within three months.

The analysis has revealed that the main definition structure is *medical term + definition*, introduced by verbs such as *определяется* (is defined), *понимается* (is understood), *относится* (is referred to), *означает* (means), *является* (is), or medical term + the pronominal marker *это* (this) separated by a dash. These markers establish a semantic equivalence between the subject and predicate (Gotti 2011: 185). The results of a quantitative analysis of the definition markers, intended to identify semantic choices of writers of popularised medical articles, are presented in Table 2.

Table 2: Frequency distribution of the definition markers in the corpus (% of total)

Verb	Totals
<i>понимается</i> (is understood)	28.2
<i>это</i> (this) separated by the dash	22.3
<i>определяется</i> (is defined)	13.1
<i>относится</i> (is referred to)	12.9
<i>означает</i> (means)	12.5
<i>является</i> (is)	10

It is evident that the most commonly used definition marker is the verb *понимается* (is understood) (28.2%) and the pronominal marker *это* (this), separated by a dash (22.3%), which implies that Russian medical reporters who write popularised articles rarely resort to semantic variation limiting a set of linguistic means realising the popularisation function.

3. Reformulation

Reformulation occurs when the medical reporter reformulates an utterance by expressing specialised concepts in a different way. Reformulations comprised about 12% of the total explanatory strategies in the corpus.

- (4) *Вторичное ожирение, то есть ожирение, вызванное такими причинами, как повреждения желез внутренней секреции, регулирующих обмен веществ и аппетит, встречается не так уж часто.*

Secondary obesity, that is obesity caused by damage to the endocrine glands that regulate the metabolism and appetite, is not so common.

As the example above illustrates, reformulations are used to restate an idea in different words to make it comprehensible to lay readers. Equivalence between the original statement and the reformulated one is signalled by reformulation markers, the most common of which are *то есть* (that is), comprising 34 % of all cases, and *другими словами* (in other words), comprising 29.2 % of all markers. Table 3 presents the most commonly used reformulation markers as a percentage of all such markers found in the corpus. Again, the data show that Russian medical reporters avoid semantic variation in producing popularised utterances.

Table 3: Frequency distribution of the reformulation markers in the corpus (% of total)

Marker	Totals
<i>То есть</i> (that is)	38
<i>другими (иными) словами</i> (in other words)	29.2
<i>а именно</i> (namely)	18.9
<i>или</i> (or)	13.4
<i>в обиходе</i> (in lay)	0.5

4. Metaphorisation

Being the result of a convention, metaphors relate professional and everyday domains of experience, and reframe specialised terms through familiar concepts. The following example illustrates the case:

- (5) *Естественные киллеры – это клетки-убийцы, которые входят в состав лейкоцитарной части крови и постоянно присутствуют в организме. Их цель – распознать предателей, переметнувшихся на сторону врага, найти их и уничтожить.*

Natural killers are **killer** cells that are part of the leukocyte part of the blood, and are constantly present in the body. Their goal is to recognise **traitors** who have defected to the **enemy**, find and destroy them.

The medical reporter explains the meaning of the metaphorical term *естественные киллеры* through the metaphors *убийцы* (*killers*), *предатели* (*traitors*), *враг* (*enemy*). The comparison helps the writer to avoid comprehension difficulties on the part of the lay reader, and contributes to the effective popularisation of the medical issue. These metaphors allow the lay readers to understand the meaning of the medical concept immediately by establishing a link between the two domains of experience – military and medical.

The corpus-based analysis identified three groups of metaphors employed most commonly by Russian medical reporters: Game metaphors, war or military metaphors and legal metaphors. The first group includes metaphors reflecting similarities of diseases or treatment methods with game elements (e.g., risks, strategies, injustice, luck, losses). Here is an example from the corpus:

- (6) *Это является характерным примером, как недорогие препараты проигрывают более дорогому лекарству.*

This is a typical example of how inexpensive drugs **lose out** to the more expensive drugs.

The second group includes metaphors associated with military operations. For example, depression is often referred to as an enemy which should be defeated:

- (7) *Борьба с депрессией – это война, которая ведется день за днем, а не только в течение тех недель или месяцев, когда ожидается действие препаратов.*

Depression is a war that is fought day after day rather than during weeks or months when drugs are taken.

The metaphorical use of military vocabulary in relation to medical phenomena reflects the conceptual metaphor *disease is the enemy*, where disease is the target conceptual domain, while war is the source of the conceptual domains.

The third group includes legal metaphors: Causative agents of diseases are often described as criminals, diseases – as crimes, bacteria and viruses – as guilty of disrupting the body functions responsible for the crime:

- (8) *В конце концов, диабет – это не приговор с отложенным сроком исполнения.*

After all, diabetes is not a **deferred sentence**.

It is interesting that Sontag (1989) claimed that medical discourse should be exempt from metaphorical expressions, as they emphasise negative consequences of diseases on patients, contributing to the stigmatising of some diseases and patients. As Sontag (1989: 23) put it, “the metaphors and the myths, I was convinced, kill”.

The Metaphor Identification Procedure described in Section 2 enabled us to identify 1,023 metaphor tokens relevant to medical phenomena in the whole corpus. The distribution of metaphors by three groups is presented in Table 4.

Table 4: Distribution of the metaphors by groups (% of the totals)

Types of metaphors	Totals
War metaphors	61
Game metaphors	21
Legal metaphors	18

Table 5 shows that war metaphors comprising 61% of all metaphors found in the corpus are most common in the Russian popularised medical articles.

The most frequently-used war metaphors and the number of their occurrences in the corpus are presented in Table 5.

Table 5: Most frequently-used war metaphors in the corpus

Types of metaphors	Number of tokens
<i>война</i> (war)	107
<i>враг</i> (enemy)	85
<i>битва, сражение</i> (fight)	76
<i>бороться</i> (to fight)	74
<i>нападение</i> (attack)	66
<i>атаковать</i> (to attack)	64
<i>захватчик</i> (invader)	60
<i>противник</i> (opponent)	59
<i>оружие</i> (weapon)	43
Total	624

It becomes clear that treatment as war and fight and disease as enemies are the most frequently-used military metaphors in the corpus. The medical reporters use war and enemy metaphors to facilitate the understanding of treatment methods by lay readers to demonstrate difficulties in recovering. The concept of enemy reinforces a sense of opposition between the patient and the disease.

5. Exemplification

Exemplification includes the resources used by medical experts to explain abstract concepts in terms of everyday experiences. Examples, as well as definitions, reformulations and denominations, are signalled in a limited number of ways (see Table 6).

Table 6: Frequency distribution of the exemplification markers in the corpus (% of total)

Marker	Totals
<i>Например</i> (for example)	37.2
<i>к примеру</i> (for example)	31.4
<i>другой пример</i> (one more example)	24.8
<i>когда</i> (when)	4.6
<i>такие как</i> (such as)	2

The most frequent exemplification markers are *например* (for example) comprising 35% of all markers and *к примеру* (for example), comprising 31% of all cases. Other exemplification expressions are rarely employed in the corpus, which suggests the unwillingness of expert writers to use semantic variants. What follows is an example from the corpus where the exemplification marker *например* (for example) is used to provide factual examples of the medical concept, with the aim of making it less abstract:

- (9) *У человека может быть заболевание, которое влияет на способность полностью переваривать пищу, например, непереносимость лактозы или целиакия.*

A human may suffer from a disease that affects his ability to digest food products, **for example** lactose intolerance **or** celiac disease.

The medical reporter explains the medical concept using an example from everyday experience. The exemplification strategy helps avoid comprehension difficulties on the part of the lay audience. In this example, the reporter employs two explanatory strategies: Exemplification, that is signalled by the marker *например* (for example), and reformulation, that is signalled by the disjunctive conjunction *или* (or).

6. Scenarios

Scenarios are also used in the corpus to help the lay reader to understand unfamiliar medical concepts. Unlike examples that are restricted by clauses or words, scenarios refer to larger discourse units including case studies.

- (10) *Например, если носовые проходы забиты из-за насморка, обоняние снижается просто потому, что запахи не достигают обонятельных рецепторов.*

For example, if the nasal passages are blocked due to a runny nose, the sense of smell is reduced simply because the smells do not reach the olfactory receptors.

The writer addresses the lay audience, and tries to facilitate the understanding of the complex medical phenomenon *smell and taste disorders* by creating a “scenario, i.e. sketching out a possible situation which might engage with the readers’ everyday activities.

5 Conclusions

The present paper was intended to add to the analysis of popularisation discourse and medical discourse production from a popularisation-centred perspective. The study aimed to show that popularised health-related texts contribute to the accommodation of medical knowledge to a lay audience’s knowledge base, and medical reporters interact with a lay audience to eliminate knowledge asymmetries. Popularised medical texts were analysed as medical knowledge popularisation tools. Popularisation was considered as a complex rhetorical function in expert-lay discourse.

The article described the process of medical knowledge popularisation through the use of strategies of explanation, aimed to present medical contents to lay readers:

– (Re)formulations, including

- 1) Denominations that introduce specialised medical concepts after explaining them;
- 2) Definitions, that clarify unfamiliar medical concepts in order to facilitate comprehension by lay readers;
- 3) Reformulations, that elaborate utterances conveying medical knowledge in simpler words;
- 4) Metaphors, that encompass comparisons and analogies, and relate medical and everyday domains of experience.

– Illustrations:

- 1) Examples that relate medical concepts to everyday experience and are restricted by clauses or words;
- 2) Scenarios that involve creating possible, but imaginary situations, to explain complex medical concepts.

The analysis also revealed that these strategies can be combined in their contribution with the purpose of making medical contents comprehensible to a lay audience.

The quantitative analysis of occurrence of strategies of explanation in Russian popular science medical texts identified the most frequent popularisation tools. The results are shown in Table 7.

Table 7: Distribution of the explanatory strategies in the corpus (% of the totals)

Explanatory strategy	Totals
Definition	41
Denomination	17
Reformulation	15
Exemplification	11
Metaphorisation	6.8
Scenarios	6.4
Combination of strategies	2.8

The analysis showed that definition, comprising 41% of all strategies of explanation found in the corpus, was the most common strategy employed by medical reporters to communicate health-related knowledge to lay readers. Metaphorisation and scenarios, comprising 6.8 and 6.4% of all strategies respectively, were less frequent. The combined strategies were also used in the corpus, but their share was rather small (2.8%).

The analysis showed that assumptions of their target audience help medical reporters make correct discursive and lexical choices. Strategies of explanation enhance understanding, shape meanings of medical concepts more precisely, and are used to accommodate specialised contents to the lay audience's knowledge base.

Even though this study did not attempt to exhaust the analysis of strategies of explanation used on health websites intended for lay users, its main contribution is that of improving current understandings of discursive tools realising the popularisation processes. In further research, it might be interesting to continue studying explanatory strategies in wider corpora, including medical texts written in different languages, from a contrastive perspective. Further research might deal with other potential strategies (e.g., similes or personifications), which may perform an explanatory function.

REFERENCES

- Patrizia ANESA, 2016: The deconstruction and reconstruction of legal information in expert-lay online interaction. *ESP Today* 4/1, 69–86.
- Patrizia ANESA, Antoinette FAGE-BUTLER, 2015: Popularizing biomedical information on an online health forum. *Ibérica* 29, 105–128.

Donella ANTELMi, 2011: Social demand and the new media Italian forums dealing with healthcare. *Pragmatics and Society* 2/2, 282–300.

Isabel BALTEIRO, 2017: Metaphor in Ebola's popularized scientific discourse. *Iberica* 3, 209–230.

Olga BOGINSKAYA, 2020: The simplification of jury instructions: Legal-lay interactions. *ESP Today* 8/2, 297–318.

Massimiano BUCCHI, 2008: Of deficits, deviations and dialogues: Theories of public communication of science. *Handbook of public communication of science and technology*. Ed. Massimiano Bucchi. London: Routledge. 57–76.

—, 1996: When scientists turn to the public: Alternative routes in science communication. *Public Understanding of Science* 5/2, 375–394.

Helena CALSAMIGLIA, Teun van DIJK, 2004: Popularization discourse and knowledge about the genome. *Discourse & Society* 15/4, 369–389.

Guiomar CIAPUSCIO, 2003: Formulation and reformulation procedures in verbal interactions between experts and semi-laypersons. *Discourse Studies* 5/2, 207–233.

Antoinette FAGE-BUTLER, 2013: Including patients' perspectives in patient information leaflets: A polyocular approach. *Fachsprache* 35, 140–154.

Antoinette FAGE-BUTLER, Matilde Nisbeth JENSEN, 2013: The interpersonal dimension of online patient forums: How patients manage informational and relational aspects in response to posted questions. *Hermes* 51, 21–38.

Maurizio GOTTI, 2011: *Investigating Specialized Discourse*. Bern: Peter Lang.

—, 2014: Reformulation and recontextualization in popularization discourse. *Iberica* 27, 15–34.

Jane GREGORY, Steve MILLER, 1998: *Science in Public: Communication, Culture, and Credibility*. New York: Plenum.

Elizabeth GÜLICH, 2003: Conversational techniques used in transferring knowledge between medical experts and non-experts. *Discourse Studies* 5/2, 235–263.

Stephen HILGARTNER, 1990: The dominant view of popularization: Conceptual problems, political uses. *Social Studies of Science* 20, 519–539.

Ken HYLAND, 2007: Applying a gloss: Exemplifying and reformulating in academic discourse. *Applied Linguistics* 28/2, 266–285.

PRAGGLEJAZ GROUP, 2007: MIP: A method for identifying metaphorically used words in discourse. *Metaphor and Symbol* 22/1, 1–39.

Rudiger REINHARDT, Beate STATTKUS, 2002: Fostering knowledge communication: concept and implementation. *Journal of Universal Computer Science* 8/5, 536–545.

Srikant SARANGI, 1998: Rethinking recontextualization in Professional discourse studies: An epilogue. *Text* 18/2, 301–318.

Elena SEMINO, 2008: *Metaphor in Discourse*. Cambridge, UK: Cambridge University Press.

Susak SONTAG, 1989: *Illness as Metaphor and AIDS and Its Metaphors*. London, New York: Penguin Modern Classics.

POPULARIZACIJA MEDICINSKEGA ZNANJA NA SPLETNIH FORUMIH

Sodobne informacijske tehnologije strokovnjakom omogočajo, da strokovno znanje posredujejo tudi prek spletnih forumov, v okviru katerih pa je treba strokovno vsebino ustrezno preoblikovati za nestrokovno publiko. V središču zanimanja so ruski poljudnoznanstveni medicinski članki kot izhodišče za popularizacijo strokovnega znanja. V raziskavi pokažemo, kako strokovnjaki s področja medicine poskušajo v interakciji z nestrokovno publiko premostiti razlike v znanju. Izpostavljene so strategije, ki se uporabljajo za razlago medicinskih pojmov. Raziskava je nastala kot odziv na pomanjkanje jasnih smernic za interakcijo strokovnjakov z laiki in zaradi izzivov, s katerimi se nestrokovna publika sooča pri poskusu razumevanja abstraktnih in/ali neznanih medicinskih konceptov. Analizirani sta bili dve vrsti razlagalnih strategij: 1. (pre)formulacija (poimenovanje, opredelitev, preoblikovanje in metafore) ter 2. ilustracija (primeri in ponazoritve). Strategiji imata popularizacijsko funkcijo in se uporabljata za olajšanje razumevanja. Ugotovljeno je, da so definicije najpogostejša strategija za posredovanje medicinskega znanja. Kombinirane strategije pa se v manjši meri uporabljajo tudi v poljudnoznanstvenih medicinskih člankih. Ugotovitve podpirajo izhodiščno tezo, da strokovnjaki pri komunikaciji z nestrokovnjaki uporabljajo drugačno retoriko in da jim razlagalne strategije pomagajo premagovati težave pri interpretaciji strokovne vsebine. Raziskavo bi lahko še razširili, npr. s preverjanjem razlagalnih strategij na drugih strokovnih področjih, ki so prav tako zanimiva širši publiki.
