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POPULARIZATION STRATEGIES IN ELIMINATING KNOWLEDGE ASYMMETRY IN EXPERT-LAY DISCOURSE

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Abstract. The article examines replies of healthcare professionals on ask-a-doctor forums, which have barely been treated in terms of popularization strategies employed in expert-lay interactions where a set of specialized concepts needs to be displayed in a way that enables lay users to understand them. The study was thus motivated by the lack of explicit guidance for healthcare professionals who are to interact with lay persons, and challenges faced by lay users in attempting to understand abstract specialized concepts. The study is based on the assumption that popularization strategies improve comprehensibility of medical information, prevent the emergence of communicative problems, and contribute to the dissemination of medical knowledge to a lay audience. A taxonomy of the strategies used by healthcare professionals in disseminating medical knowledge on ask-a-doctor forums is built, linguistic markers that signify these strategies in expert-lay interactions are identified. A corpus-based analysis revealed that definitions, denominations and reformulations were the most common tools employed by doctors to communicate specialized knowledge to lay-forum users. Metaphors and scenarios were infrequent in the corpus. Combined strategies were also used in doctors’ replies, but their share was insignificant. It was concluded that the use of popularization tools in disseminating medical knowledge is an effective discursive mechanism that facilitates understanding among lay addressees and produces specific reactions by resorting to familiar concepts and domains.

Key words: explanatory strategy, knowledge asymmetry, medical discourse, popularization discourse, definition, metaphorization.

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СТРАТЕГИИ ПОПУЛЯРИЗАЦИИ КАК ДИСКУРСИВНЫЕ ИНСТРУМЕНТЫ УСТРАНЕНИЯ АСИММЕТРИИ ЗНАНИЯ

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Аннотация. В статье на материале ответов врачей на вопросы пользователей медицинских форумов исследуются стратегии популяризации, применяемые в асимметричных интеракциях с целью элиминации асимметрии знания. Практическая значимость данного исследования заключается в разработке рекомендаций, которые могут стать основой эффективного дискурсивного взаимодействия медицинских работников и

пациентов и помогут устранить трудности в понимании абстрактных специализированных понятий последними. В результате анализа выделены две категории стратегий популяризации экспертного знания: 1) описание, включающее деноминацию, дефиницию, перефразирование и метафоризацию; 2) иллюстрирование, включающее экземплификацию и сценаризацию. Установлено, что в изучаемом корпусе к наиболее частотным средствам популяризации медицинских знаний относятся дефиниции, перифразы и примеры, наименее частотными – метафоры и сценарии; доля комбинированных стратегий оказалась незначительной. Сделан вывод о том, что использование экспланаторных механизмов облегчает понимание сложного медицинского контента и способствует достижению прагматического эффекта в коммуникативном процессе, протекающем в условиях асимметрии знания. Предложенная модель анализа асимметричных интеракций на материале медицинских онлайн-форумов, в основе которой лежит выявление стратегий популяризации и сигнализирующих их языковых средств, может быть применена при анализе других типов асимметричного дискурса.

Ключевые слова: стратегия популяризации, асимметрия знания, медицинский дискурс, популяризационный дискурс, дефиниция, метафоризация.

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Introduction

In the beginning of the 21st century, the need to make specialized contents more accessible to lay people contributed to the formation of a new genre – the ask-an-expert online forum. Although these forums deal with specialized issues, popularization strategies employed by experts make their contents comprehensible to a lay public. Interdiscursive texts created in the popularization process combine informative and explanatory elements [Gotti, 2014], "use more informal language in a more direct way, sometimes including conversational style, which makes them suitable as an introductory reading on a specific scientific topic" [Bellés-Fortuño, 2016, p. 28]. Being addressed to lay users, these texts act as mediators making specialized contents accessible to a lay audience through the expressions that are transparent for non-experts.

The growing importance of specialized data in the media has caught the attention of linguists studying how specialized information is addressed to laypeople. For example, E. Gülich conducted an analysis based on a large corpus of transcribed recordings of medical seminars in rehabilitation centers and of interviews with chronically ill patients, focusing on explanatory procedures such as metaphors, exemplification, scenarios, and concretization [Gülich, 2003]. G. Ciapuscio and M. Gotti dealt with the popularization of scientific discourse [Ciapuscio, 2003; Gotti, 2014], while O. Boginskaya and P. Anesa analyzed the issues of popularization of legal knowledge [Anesa, 2016; Boginskaya, 2020]. P. Anesa and A.M. Fage-Butler described the types of dialogic and polylogic doctor-patient interactions and identified explanatory tools used to popularize biomedical knowledge [Anesa, Fage-Butler, 2015]. A.M. Silletti analyzed the role of illustrations in the discourse of medicine through the online versions of American, French and Italian popular science magazines [Silletti, 2015]. She highlighted the importance of visual data and its usefulness and contribution to text understanding by a lay audience. B. Bellés-Fortuño showed how the less conventionalized structure and less formal use of language of popular science articles "make them suitable models for teaching undergraduate students in the field of health sciences, especially those in the first year of their degree" [Bellés-Fortuño, 2016, p. 58]. A. Bagiyan explored discursive mechanisms of popularization of special knowledge, among which thematic reduction, information compression, linguistic creativity, determinologization, and use of paratextual components [Bagiyan, 2017].

Despite the fact that the issues of popularization and specialized knowledge dissemination to lay people have attracted many discourse analysts, the ways how specialized medical knowledge is decontextualized and constructed on medical websites intended to lay users have not been systematically analyzed, and popularization strategies employed by forum doctors have barely been studied from the perspective of knowledge asymmetry. However, in the last decade, it has become natural for lay people to look for medical information online to

get the idea of what steps they should take in this or that health-related situation. The process of information seeking that forces lay citizens to search for answers to medical questions entails their relationship with healthcare professionals. Making medical information available for a lay audience plays a crucial role in making citizens aware of health-related issues, especially in the era of COVID-19 when it is not safe to visit medical care facilities, since any contact increases your risk of developing or spreading the virus. It is my purpose in this article to identify, analyze and assess a variety of popularization strategies employed by online doctors in eliminating knowledge asymmetries. The ask-a-doctor forums offer a rich overview of the communicative problems occurring in this discursive scenario and of the strategies doctors resort to in order to solve them. This type of discourse is an interesting field for observation of the popularization discourse production intended to make the expert-lay communication effective and help a lay audience to understand medical concepts by "relieving the original discourse of lexical and syntactic features too complex and hermetic for the public at large" [Salerno, 2019, p. 30].

The current study is based on the assumption that explanatory strategies improve comprehensibility of medical contents, prevent the emergence of communicative problems, and contribute to the dissemination of medical knowledge to a lay audience.

The study that is based on the taxonomy of popularization strategies suggested by the author intends to answer the following questions:

1. What role popularization strategies used by healthcare professionals play in disseminating medical knowledge on ask-a-doctor forums?

2. What types of popularization strategies prevail on the ask-a-doctor forum?

3. What linguistic markers signalize the popularization strategies in the corpus?

Hence, this article contributes to supporting the view of popularization and examines the explanatory strategies which are employed to explain medical concepts on ask-a-doctor forums.

Corpus design and methodology

The data was drawn from the HealthcareMagic.com and MedHelp.org websites, where healthcare professionals answer medicine-related questions posed by lay-forum users. Such medical websites, which represent an interesting locus to explore a specific type of expert-lay interactions, allow lay people to get free answers to a variety of medical questions. The forums are intended as a patient resource. The information provided on these forums may help lay users learn the opinions of doctors, and suggest questions they can ask of their doctors or research themselves.

The websites have a particularly clear layout. They are organized into different medical fields, which are then further subdivided into sections with a specific focus on different medical issues such as general health, mental health, female health, coronavirus, sports and fitness, child health, pregnancy, etc.

To compile the corpus for this study, the replies provided by doctors were selected based on the following criteria:

1) thematic variety;

2) presence of popularization strategies, the replies were required to contain reformulations, definitions, denominations, metaphors, examples and scenarios;

3) time, as all posts date back to the period between March 2020 and December 2021.

The replies that met these criteria were shortlisted and selected to build the corpus. The main focus was on the popularization strategies, their types and frequencies. The corpus provides authentic examples to explore how popularization strategies may be used to disseminate medical knowledge on ask-a-doctor forums. The corpus comprises 1,671 replies totaling 1.25 million words. The doctors' replies deal with a variety of medical issues: general health, coronavirus, female health, cardiology, endocrinology, dermatology, cancerology, etc. 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 experience of healthcare community members.

This study aims to describe the popularization strategies employed to communicate medical knowledge to lay-forum users. To comply with this aim, both quantitative and qualitative methods of analysis were used. A manual analysis of the corpus texts was used to identify popularization strategies

based on the signaling markers. Metaphors were identified at the level of individual word tokens. Once identified, the metaphors were classified by their target domains.

In order to go beyond a mere list of explanatory strategies typically employed on ask-a-doctor forums, the study applied the interpretative method. The focus of the qualitative analysis in this study was on the ways medical information was popularized and transferred from specialized knowledge to everyday language to enable lay-forum users to understand it. This popularization was investigated through the analysis of explanatory strategies, with the focus on those significantly emerged in the corpus.

Theoretical framework

The theoretical framework for the current analysis on the macrolinguistic level is studies of popularization discourse. It has been investigated from many perspectives and within various research approaches. Studies have focused on its rhetorical functions, strategies employed to make specialized contents understandable to a non-expert audience, lexical choices and grammatical structures, etc. In their attempts to define the concept of popularization, researchers have focused on different aspects. For example, G. Myers claimed that while translating from expert to popularized discourse, specialized information becomes simplified and distorted [Myers, 2003]. Earlier, S. Hilgartner described popularization as simplification and distortion of science by outsiders and showed that it is theoretically impossible to draw a boundary between 'science' and 'popularization' [Hilgartner, 1990]. In the same vein, V.K. Bhatia claimed that in simplifying specialized content, it is not always possible to do much about the terminology [Bhatia, 1983, p. 43]. Most of the specialized terms are associated with particular concepts, and any attempt to replace them will result in a distortion of the intended meaning.

M. Bucchi, who criticized this canonical approach, argued that terms like 'distortion' and 'inaccurate translation' only make sense by reference to the most outdated models of communication. Knowledge, as M. Bucchi puts it, is being 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 [Bucchi, 1996].

One more study on the phenomenon of popularization which does not assume it to be a process of distortion was conducted by Whitley and T. Shinn [Whitley, Shinn, 1985], who claimed that the form in which knowledge is transferred from experts to a lay audience is different, since specialized knowledge has to be explained to a lay audience, so the linguistic features of expert discourse are different from those of popularized discourse. But when adapting the form to a lay audience, knowledge is assumed to remain unchanged throughout the discursive transformation process.

A different methodological approach was adopted by M. Gotti, who argues that "the popularization process is a kind of *redrafting* that does not alter the disciplinary content – object of the transaction – as much as its language, which needs to be remodeled to suit a new target audience [Gotti, 2014, p. 16]. In the process, information is transferred linguistically in a way similar to periphrasis or to "*intralingual translation*". The researcher believes that "the communication of knowledge implies important changes in the cognitive dimension, deriving from the interaction between specialized knowledge and its popularization" [Gotti, 2014, p. 19].

Popularization of specialized knowledge is also considered to be a dynamic process of conversion [Rezina, 2019] that makes information comprehensible through the use of strategies which allow experts to explain abstract concepts in lay. The experts have to adapt to a target audience by evaluating the knowledge held by them and explaining specialized terms with the aim to eliminate the knowledge asymmetry.

On the microlinguistic level, the theoretical framework is based on the studies of discursive strategies identified in corpora of specialized texts intended for the explanatory purpose [Anesa, Fage-Butler, 2015; Anesa, 2016; Bellés-Fortuño, 2016; Calsamiglia, Van Dijk, 2004; Ciapuscio, 2003; Fage-Butle, 2013; Gotti, 2014; Gülich, 2003; Silletti, 2015]. One of the first works on explanatory strategies in medical discourse was E. Gülich's study of medical knowledge transfer to non-experts [Gülich, 2003]. Her analysis was based on a large corpus of transcribed recordings

of medical seminars and interviews with patients and focused on procedures of illustration, which are often combined with reformulation procedures. Ciapuscio explored the oral interaction between scientists and specialized journalists that precedes the writing of science popularization texts targeted for the lay reader and identified two types of recurrent formulation procedures deployed by experts: illustration and reformulation [Ciapuscio, 2003]. H. Calsamiglia and T. van Dijk's analysis of a corpus of texts about the sequencing of human genome that has also identified a group of tools employed for the management of expert knowledge. Besides the metaphors conceptualizing abstract categories, and sequencing as decodification, they found that descriptions of new objects tend to be organized using a limited number of fundamental categories [Calsamiglia, Van Dijk, 2004]. M. Gotti described popularization strategies such as thematization and denomination [Gotti, 2014]. C.M. Salerno dealt with knowledge recontextualization strategies and processes of intralingual translation in pages devised for the mediation of copyright related legislation [Salerno, 2019].

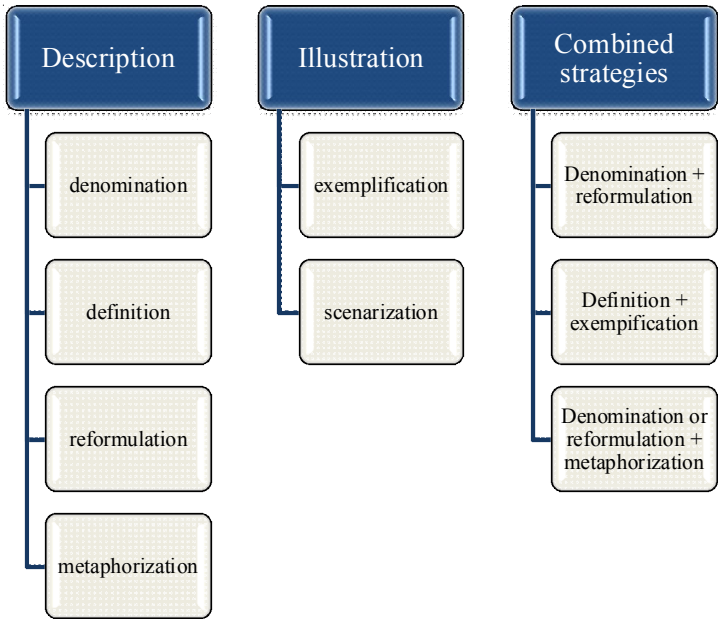
The previous studies allowed me to build up an integrated classification of popularization strategies employed to popularize expert knowledge and to fill a gap of knowledge in interactions of healthcare professionals and lay-forum users (see Figure).

Taking into account a great number of taxonomies of popularization strategies employed in popularization discourse, I suggest that the strategies presented in Figure fully cover the popularization process on ask-a-doctor forums. All of these structures have been referred to instances of explanation applied to the conceptual level of discourse as they try to draw from experiences familiar to the lay audience [Ciapuscio, 2003, p. 212]. Illustration differs from description since it is of a conceptual nature, and it is not confined to the representation of an idea with different words or the introduction of new objects or terms. It can be seen as a strategy, through which specialized information is replaced by other semiotic signs which refer to the medical content. Below is a brief description of the popularization strategies included in my taxonomy.

1. Description and its subtypes.

Denomination is a strategy that introduces new objects or terms and integrated into a sentence by making recourse to expressions such as *known as*, *meaning*, *so called*, *in other words*, etc. The new concept is always introduced after its explanation.

Definition entails an explanation of specialized terms through various categories: composition, quantity, size, localization, time, properties, process, functions, etc. [Calsamiglia, Van Dijk, 2004, p. 379]. Definitions have simple structures and contain information that does not



Popularization strategies

require expert knowledge to be understood. Unlike denominations, when definitions are provided, the method employed is juxtaposition.

Reformulation is "a discourse function 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, p. 269]. It is "a kind of redrafting that does not alter the disciplinary content – object of the transaction – as much as its language, which needs to be remodelled to suit a new target audience" [Gotti, 2014, p. 19]. Reformulations can be introduced a) by means of appositions, preceding or following the term it clarifies; b) in parentheses, dashes, quotes; c) by means of linguistic markers [Garzone, 2006]. According to H. Calsamiglia and T. van Dijk, "such explanatory moves establish a link between old and new knowledge, where usually a new notion is introduced first, followed by an explanatory reformulation or paraphrase" which makes sense to the target audience [Calsamiglia, Van Dijk, 2004, p. 383].

Metaphorization is a discursive tool that involves talking about one thing in terms of another on the basis of some perceived similarity between them [Semino, 2008, p. 1]. Metaphors determine how thought is structured by relating specialized and everyday domains of experience and reframing complex terms through familiar concepts. "In allowing us to focus on one aspect of a concept a metaphorical concept can keep us from focusing on other aspects of the concept that are inconsistent with that metaphor" [Lakoff, Johnson, 2003, p. 10].

2. Illustration and its subtypes.

Exemplification is "a communication process through which meaning is clarified or supported by a second unit which illustrates the first by citing an example" [Hyland, 2007, p. 270]. These cognitive models are easier to understand and remember; besides they are useful as such an explanatory tool creates reader-friendly texts.

Scenarization can be defined as the drawing up of possible situations, events or reactions. They are the "direct appeal to the interlocutor by creating a possible but imaginary situation to explain a complex fact" [Ciapuscio, 2003, p. 213]. As a type of illustration, they touch on the readers' everyday activities and represent a way to formulate a hypothesis about potential conditions, actions and consequences. Along with examples, scenarios can be employed for the popularization purpose when it is not possible to define a specialized term in lay, reformulate it or find a suitable analogy.

3. Popularization strategies combined.

Popularization strategies can be combined in order to communicate specialized knowledge more efficiently. Among these combinations found in the corpus are denomination + reformulation; definition + exemplification; denomination + metaphorization; reformulation + metaphorization. Metaphors, examples and scenarios are often used as supporting rather than main strategies of explanation being preceded or followed by denominations, reformulations or definitions.

Results and discussion

Filling the knowledge gap between medical experts and lay-forum users is a process that takes into account both linguistic expressions and popularization strategies. This part of the article will focus on four types of descriptions and two types of illustrations employed to represent medical phenomena on ask-a-doctor forums.

1. Denomination is seen in the samples:

(1) **Tiredness and muscle cramps are** commonly seen in the condition that you have mentioned – Mcardle's disease. It is a **glycogen storage disease**;

(2) **Enlargement of the aorta** may be only mild in degree and **termed "ectasia"**.

The new concepts are introduced after explaining them. The denomination markers are the morphological forms of the verbs *to be* and *to term*.

Table 1 shows the most frequent denomination markers as a percentage of all such these markers in the corpus. The preponderance of the first two markers over the other ones implies that forum doctors use a limited set of reformulation means.

2. Definitions are also frequently used to improve the comprehensibility of medical terms. On ask-a-doctor forums, definitions as a unique logical and discursive strategy involving the interaction of language and thinking play a significant role in explaining abstract concepts to lay-forum users. Here is an extract from the

Table 1. **Frequency distribution of the denomination markers in the corpus, % of total**

Marker	Totals
(is/are) called	36
(is/are) referred to	27
mean	18
include	11
(is/are) termed	8

corpus which contains a definition of the medical term *spinal cord*:

(3) **Spinal cord is** a long, thin, tubular **bundle** of nervous tissue and support cells that extends from the brain. The brain and spinal cord together is known CNS.

The medical term *spinal cord* is explained by providing a definition which fills the knowledge gap and eliminates the knowledge asymmetry between the expert and the lay-forum user. The reply responds to the need of accommodating medical knowledge to the lay audience's cognitive level. The hypernym that is part of the definition is a metaphor *bundle*, which indicates a combination of two popularization strategies in this example.

(4) **Pseudo-dementia is a diagnosis** made in people who develop dementia after having had depression that is poorly treated.

In example (4), the medical term *pseudo-dementia* might be unknown to the lay-forum user who can misunderstand its meaning. The definition provided by the doctor consists of the hypernym *diagnosis* employed to define the medical term and followed by a specification in the relative clause. To manifest the definition, the morphological form of the linking verb *to be* is used.

An analysis of the corpus revealed one more way to define medical concepts – in the parentheses, without the use of verbal definition markers:

(5) Systole is the act of contraction by the heart and is governed by 2 cardiac properties (1) **contractility (the ability of the muscle to contract)** and (2) **afterload (the force against which the heart is pumping)**.

This way of providing definitions was infrequent in the corpus (1.2% of all occurrences). An analysis of the corpus has shown that the main structure of definitions is as follows: medical term + definition introduced by verbs such as *is defined*, *is understood*, *refer to*, *mean*, *is*/*are*. These markers establish a semantic equivalence between the subject and the predicate. A quantitative analysis of the definition markers intended to identify semantic choices of healthcare professionals is shown in Table 2.

It is evident that the most commonly used definition markers are *is*/*are* (35.2%) and *is*/*are understood* (23%) which implies that forum healthcare professionals rarely resort to semantic variations limiting a set of linguistic means.

3. Reformulation occurs when the expert rephrase an utterance by expressing medical concepts in a different way. Reformulations comprised about 12% of the total popularization strategies in the corpus.

(6) You have **fibromyalgia, in other words depression**;

(7) These are bowel problems, **i.e.** mucous, diarrhea, severe cramping.

As the examples above illustrate, the function of reformulations is to restate an idea in different words so that to make it comprehensible to lay readers. Equivalence between the statements is signaled by the reformulation markers, the most common of which are *i.e.*, comprising 38% of all cases, and *in other words*,

Table 2. **Frequency distribution of the definition markers in the corpus, % of total**

Verb	Totals
Is/are	35.2
Is/are understood	23
Is/are defined	16
Refer to	14
Mean	11.8

comprising 29.2% of all markers. Table 3 shows the most frequent reformulation markers as a percentage of all such markers in the corpus. The preponderance of two markers over the other implies that forum doctors use a limited set of reformulation means.

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

(8) Chlamydia is often known as a "**silent infection**" because there are often no symptoms at all.

The doctor explains the meaning of the medical term *Chlamydia* through the metaphor *silent infection*. The comparison helps the doctor to avoid comprehension difficulties on the part of the lay-forum user and contributes to the effective popularization of the medical content.

The corpus-based analysis identified two groups of metaphors most commonly employed by doctors on medical forums: *ludic metaphors* and *military metaphors*. The first group includes metaphors that reflect similarities of diseases or treatment methods with ludic elements (e.g., *risks*, *strategies*, *injustice*, *luck*, *losses*). Here is an example of these metaphors:

(9) This is a typical example of how cheap drugs **lose out** to more expensive ones.

The second group includes metaphors associated with military operations. For example, depression, stretch marks or obesity are often referred to as an enemy which should be defeated. Here are some examples of military metaphors found in the corpus:

(10) **Depression is a war** that is fought day after day;

(11) **Liver is an enemy** of anything superfluous in the body.

The metaphorical use of military vocabulary in relation to medical phenomena reflects the conceptual metaphors *disease is enemy* and *treatment is war*, where "disease" and "treatment" are the target conceptual domain and "enemy" and "war" are the source conceptual domain.

The analysis enabled us to identify 823 metaphor tokens relevant to medical phenomena in the corpus. The distribution of metaphors by two groups is presented in Table 5.

It becomes clear that treatment as war and fight and disease as enemy are the most frequently-used metaphors in the corpus which facilitate the understanding of treatment methods by lay readers and demonstrate difficulties in recovering.

Thus, despite the fact that medicine might not seem to be an appropriate field for metaphors, healthcare professionals often use metaphorical expressions in their replies to allow lay-forum users to visualize medical phenomena, actions, and processes in terms of familiar concepts, actions, and processes.

5. Exemplification includes the resources used by doctors to explain medical concepts in terms of everyday experience. Examples are signaled in a limited number of ways (see Table 4).

The most frequent exemplification marker is *for example* comprising 46.2% of all markers. Other exemplification expressions are rarely employed in the corpus, which suggests the unwillingness of doctors to use semantic variants. What follows is an example from the corpus where the exemplification markers *such as* and *like* are used to provide factual examples of the

Table 3. **Frequency distribution of the reformulation markers in the corpus, % of total**

Verb	Totals
i.e.	38
in other words	29.2
namely	18.9
or	13.4
In lay	0.5

Table 4. **Distribution of the metaphors by groups, % of total**

Types of metaphor	Totals
Military metaphors	62
Ludic metaphors	38

Table 5. **Frequency distribution of the exemplification markers in the corpus, % of total**

Marker	Totals
for example	46.2
one more	17.4
example	11.8
when	10.6
such as	7
namely	4
including	2
for instance	1
like	1

medical concepts with the aim of making them less abstract:

(12) Bone marrow transplant may be recommended for bone marrow deficiency disease caused by **abnormal red blood cell production, such as** thalassemia or sickle cell disease, aggressive cancer treatments like chemotherapy and radiation therapy given for leukemia or lymphoma, lack of normal blood cell production, **immune system disorders such as** congenital neutropenia and severe combined immunodeficiency syndrome, specific **forms of cancer like** leukemias, lymphomas and myelomas.

The doctor explains the meaning of the medical concepts *abnormal red blood cell production*, *immune system disorders* and *forms of cancer* providing examples. By selecting the exemplification strategy, the doctor tries to avoid comprehension difficulties on the part of the lay-forum user and formulates the specialized concepts in a simplified manner that is closer to the lay user therefore facilitating the understanding.

Thus, they play a significant role in expert-lay interactions, providing an easily accessible link between abstract statements and their specific instances.

6. Scenarization is also used to explain medical phenomena and intended to help a lay audience to understand medical concepts. Unlike examples that are restricted by clauses or words, scenarios refer to larger discourse units including case studies:

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

The doctor makes an attempt to facilitate the understanding of the complex medical phenomenon *smell and taste disorders* by sketching out a possible situation which might engage with the lay-user's everyday activities.

Conclusions

The article aimed to add to the study of popularization discourse production and was intended as a contribution to specialized discourse from a popularization-centered perspective, considering the transfer of medical knowledge to a lay audience as an indirect accommodation process intermediated by explanatory strategies. The idea that consulting medical websites intended for lay-forum users has great potential in terms of popularizing medical information was taken as a departure point in this study.

The main purpose of this research was to show that ask-a-doctor forums contribute to the dissemination of medical knowledge to a lay audience, and healthcare professionals interact with lay people to eliminate knowledge asymmetries. Doctors' replies were analyzed as medical knowledge popularization tools. Popularization was considered as a discursive accommodation of specialized contents to the knowledge base of a lay audience.

The article described the process of medical knowledge popularization through the use of explanatory strategies intended to present medical information to lay readers. Each of these strategies has specific features that allowed me to distinguish between them:

1) description: denomination, definition, reformulation, and metaphorization;

2) illustration: exemplification and scenarization.

These strategies can thus serve a popularization function and are used in the negotiation of meaning of specialized terms to facilitate the lay-audience's understanding. The

corpus-based analysis revealed that these strategies can be combined in their contribution to the purpose of making communication of medical knowledge easier for lay-forum users.

The quantitative evaluation of the occurrences of popularization strategies employed by medical experts revealed their frequencies. The results are presented in Table 6.

An analysis of the corpus has shown that definitions, comprising 39% of all strategies found in the corpus, were the most common tools employed by doctors to communicate specialized knowledge to lay-forum users. Metaphors and scenarios, comprising 7% and 6% of all strategies found in the corpus respectively, were infrequent in the corpus. Combined strategies were also used in doctors' replies, but their share was insignificant – 3%. The preponderance of a limited number of definition, denomination, reformulation and exemplification markers indicated the unwillingness of forum doctors to use semantic variants in their replies.

Even though this study does not attempt to exhaust the analysis of explanatory strategies in forum medical discourse, I may conclude that the use of popularization tools in disseminating medical knowledge is an effective discursive mechanism that facilitates understanding among lay addressees and produces specific reactions by resorting to familiar concepts and domains. Thus, the main contribution of the present article is that of improving current understandings of popularization and explanatory strategies as tools realizing the popularization process. In further research, it might be interesting to continue analyzing these strategies and their markers in wider corpora or comparing them in different languages. Further research might deal with other potential explanatory strategies, such as analogies or similes, which may serve to explain specialized concepts. In addition, it could be interesting to put forward a further distinction within the two types of popularization strategies and identify their additional subtypes.

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Table 6. **Distribution of the explanatory strategies in the corpus, % of total**

Explanatory strategy	Totals
Definition	39
Denomination	19
Reformulation	15
Exemplification	11
Metaphorization	7
Scenarios	6
Combination of strategies	3

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