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## Verbalization of Scientist's Commentary as a Semantic Component in Popular Science Newspaper Articles in the English and Russian Languages

Summary

### Verbalization of Scientist's Commentary as a Semantic Component in Popular Science Newspaper Articles in the English and Russian Languages

The article deals with the means of verbalization of the semantic subcomponent called *the scientist's commentary*, which is typical of the semantic structure of the popular science newspaper text. The most common lexical means used in English and Russian popular scientific articles are evaluative attributes, metaphors, and colloquial lexical units. Russian articles are characterized by a more extensive use of tropes than English articles, which suggests that presentation in Russian articles is more emotional and popular. We have found that the most typical syntactical expressive means of verbalization of *scientist's commentary* are direct speech, parentheses, and parceling. In Russian texts this semantic subcomponent is characterized by a more extensive use of expressive syntax means than in English ones, including imperatives, interrogative and exclamatory sentences, and question-answer complexes. In English articles *the scientist's commentary* is characterized by syntactic parallelism, emphatic, and adjustment constructions.

Key words: *popular science text, lexical means, syntactic means, text linguistics*

Резюме

### Вербализация семантического компонента «комментарий ученого» в научно-популярном газетном тексте на английском и русском языках

В статье рассматриваются средства вербализации семантического субкомпонента *комментарий ученого*, типичного для семантической структуры научно-популярного газетного текста. Наиболее употребительными лексическими средствами в англо- и русскоязычных научно-популярных статьях являются оценочные определения, метафоры и разговорные языковые единицы. Выявлено, что русскоязычные статьи отличаются более широким употреблением тропов, чем англоязычные, что говорит о большей эмоциональности и популярности изложения в русскоязычных статьях. Установлено, что среди синтаксических экспрессивных средств вербализации *комментария ученого*

наиболее типичны прямая речь, вводные конструкции и парцелляция. *Комментарий ученого* в русскоязычных статьях характеризуется более широким набором экспрессивных синтаксических средств, чем в англоязычных, включая императивы, вопросительные и восклицательные предложения, вопросно-ответные комплексы. Для *комментария ученого* в англоязычных статьях характерен синтаксический параллелизм, эмфатические и присоединительные конструкции.

Ключевые слова: *научно-популярный текст, лексические средства, синтаксические средства, лингвистика текста*

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Studies of popular newspaper texts are relevant because there is a necessity for correct processing and rendering of scientific data in the modern information society. This fact accounts for the importance of studying the pragmatic and communicative potential of popular science texts.

Popular science texts have their own specific features. First of all, the communicative aim of the popular science text is to promote new scientific knowledge to the general audience. In addition, the popular science text connects experts and non-experts by providing the most important and interesting research material to non-experts in an accessible and entertaining way. Another specific feature of the popular science text is that it is addressed to non-experts and the addressee can be not only a professional researcher but also a journalist who knows the subject quite well.

Scientific knowledge is a *verbalized product of purposeful cognitive activity* [Баженова 1987: 8]. In our research, we refer to the new scientific knowledge as to the results of new studies on a certain scientific problem discussed in the text. The old knowledge is referred to as the results of earlier studies. The new knowledge is presented in the popular science text in connection with the old and is verbalized in it with the help of certain linguistic means.

The study material entails 100 English newspapers (The Washington Post, The New York Times, The Independent, The Sunday Times, USA Today) and 100 Belarusian newspapers issued in the Russian language ("Народная газета", "Советская Белоруссия", "Свободные новости плюс", "Обозреватель"). The scientist's commentary as a semantic subcomponent is one of the most common subcomponents that constitute the semantic structure of the popular science text. Following T.A. Van Dyck, we refer to the superstructure as to *the conventional scheme, the form for the text structure as a whole, which exists independently of local or global*

meanings of the text and its contents and sets the general scheme of the text [Ван Дейк 1989: 255]. Specific lexical and syntactic linguistic means are used in popular science texts to verbalize this subcomponent. These means are used to enhance the expressiveness of the text and to mark novelty, value, and significance of new scientific knowledge.

The analysis has shown that among the lexical expressive means in the texts under study, the most common means are evaluative attributes and metaphors (see Table 1).

Table 1  
Lexical means of verbalizing the scientist's commentary  
in English articles

Lexical means	Usage instances	Frequency of use
Evaluative attributes	255	50.6%
Metaphors	138	27.4%
Colloquial lexical units	51	10.1%
Epithet	22	4.4%
Comparison	13	2.6%
Metonymy	9	1.8%
A phraseological combination	8	1.6%
Hyperbole	5	0.9%
Irony	1	0.2%
Litotes	1	0.2%
Interjection	1	0.2%
Total	504	100%

Table 2  
Lexical means of verbalizing the scientist's commentary  
in Russian articles

Lexical means	Usage instances	Frequency of use
1	2	3
Evaluative attributes	220	42.5%
Metaphors	125	24.1%
Colloquial lexical units	98	18.9%
A phraseological combination	21	4%
Epithet	21	4%

Sequel to Table 2 see on p. 233

Sequel to Table 2

1	2	3
Interjection	10	1.9%
Comparison	8	1.5%
Antithesis	7	1.4%
Periphrasis	4	0.8%
Hyperbole	2	0.4%
Metonymy	1	0.2%
Litotes	1	0.2%
Total	518	100%

As shown in Table 1 and Table 2, evaluative attributes are the most widely used lexical means in the scientist's commentary. It indicates that the main function of the scientist is to evaluate new research results and their practical value and to comment on them. Evaluative attributes are also used to describe events and people from the subjective point of view, both rationally and emotionally. Moreover, these attributes are used in the scientist's commentary to express an expert's viewpoint and are the means of influencing the audience and the public opinion on a particular issue.

By influencing emotions of the readers, the researcher describes the problem in simple terms that is easier for the reader to perceive and remember than logical scientific argumentation. For example, in an article about the dangers of mobile phones the evidence obtained by scientists is evaluated by the author of the study, e.g. *He admits that mobiles can save lives in emergencies, but concludes that "there is a significant and increasing body of evidence for a link between mobile phone usage and certain brain tumours"*. The research activity can also be the object of evaluation, e.g. *Это подтверждает, что нами взят правильный курс на решение социально значимой проблемы.*

A wide use of metaphors is also typical of the articles under analysis in both English and Russian. In our opinion, this fact is due to the pragmatic aim of a newspaper article which is to produce an impact on the audience. Metaphors are used in the text to extend the scope of word meaning through the figurative meaning of words, thus increasing the expressive properties of the text. In an article about the hypothesis of global catastrophe a metaphor is used to illustrate the scale of the hypothetical catastrophe, e.g. *If all parasites were to disappear off the face of the planet tomorrow,*

*we'd have a teetering ecological house of cards, Dr. Gomez suggests. "Everything would crumble," he said.* In an article about the study of pain a metaphor is used to illustrate the significance of research in this field, e.g. *Досконально понимая, как он [тройничный нерв] функционирует в норме и при патологии, сопоставив результаты нашей работы с данными других исследователей, мы получим мощный инструмент борьбы с болью.*

The scientist's commentary is also characterized by the use of lexical means used in informal speech. The research has shown that these lexical units are more typical of Russian texts. Colloquial lexical units are used to enhance the expressiveness of newspaper articles, to focus the reader's attention on a certain fact, and to make the text closer to the reader's everyday experience. The use of colloquial language units also helps to establish a dialogue between the expert and the reader, which is the typical functional feature of the popular science text. For example, the colloquial noun *kids* is used by the researcher instead of a neutral noun *children*, e.g. *"A taste for salt is an acquired thing," says David Jones, president of the American Heart Association. "And kids who eat salty diets grow up to be adults who eat salty diets."* In an article about the dangerous impact television has on human health the researcher uses a colloquial word instead of a neutral one to refer to a TV set: *Возможно, у вас уже сформировалась психическая зависимость от "ящика".*

The analysis has shown that the scientists' commentaries in Russian popular science articles are characterized by a wider use of tropes than in English articles. In particular, the semantic subcomponent under study in English popular science texts does not contain any interjections, antitheses, or periphrases. The reason for this is that researchers (as well as authors) in Russian articles pay more attention to establishing an emotional contact with their readers, while in English articles the focus is on informing the readers about the most recent scientific discoveries and new study results.

The notion of text expressiveness is referred to as *the result of the pragmatic use of language which has the purpose of expressing the emotional impact of the sender's attitude to the sender and imposing the same attitude on the sender* [Сысоева 2004: 168]. An effective linguistic impact is provided by means of constructions that are marked in comparison with unmarked neutral ones. Such constructions are referred to as expressive. Expressive constructions used in the written language are structurally different from the expressive constructions used in oral speech. They are expressive means used to provide an impact on the addressee.

In popular science texts under study, the following expressive syntactic means have been identified (see Table 3 and Table 4).

Table 3

**Syntactic means of verbalizing the scientist's commentary  
in English texts**

Syntactic means	Usage instances	Frequency of use
1	2	3
Direct speech	526	67.2%
Fronting and parenthetical constructions	76	9.7%
Parceling	74	9.5%
Adjunctive constructions	39	5%
Syntactic parallelism	23	2.9%
Emphatic constructions	19	2.4%
Rhetorical questions	7	0.9%
Question-and-answer structures	6	0.8%
Imperatives	6	0.8%
Inversion	3	0.4%
Ellipsis	2	0.3%
Exclamatory sentences	1	0.1%
Polysyndeton	1	0.1%
Total	783	100%

Table 4

**Syntactic means of verbalizing the scientist's commentary  
in English texts**

Syntactic means	Usage instances	Frequency of use
1	2	3
Direct speech	200	37%
Parenthetical constructions	103	19%
Parceling	101	18.7%
Exclamatory sentences	44	8.1%
Question-and-answer structures	22	4%
Imperatives	17	3.1%
Particles	16	3%
Rhetorical questions	15	2.8%

*Sequel to Table 4 see on p. 236*

Sequel to Table 2

1	2	3
Ellipsis	10	1.8%
Syntactic parallelism	5	0.9%
Adjunctive constructions	5	0.9%
Simple nominative sentences	2	0.4%
Polysyndeton	1	0.2%
Repetition	1	0.2%
Total	541	100%

The analysis has shown that more various syntactic means are used in the scientists' commentaries in Russian articles than in English ones. As regards articles in both English and Russian, the most commonly used means of expressive syntax in the scientist's commentary is direct speech which predominates over all other means in English texts. A scientist's commentary, when expressed in the form of direct speech, provides the reliability of information told by a scientist and establishes a dialogue between the expert and the reader, e.g. *"The fundamentals of helping people with depression are pretty low tech," Dr. Simon said. "The core resource is humans," people who can identify patients and offer treatments. "Это та долгожданная частица, которая необходима, чтобы теория, объясняющая все сущее в мире, была замкнутой", – отметил Николай Шумейко.*

Another widely used syntactic means in English and Russian articles is parceling. The initial position of coordinative conjunctions in the sentence refers to expressive syntax because these conjunctions are used for emphasis. In this case, the first part of the sentence is usually the presupposition, and the final part has more significance, e.g. *"The jaw bone is small – perhaps from a female – and, on the outside surface, it mainly shows features found in earlier fossils of H. erectus and even H. habilis. But, on the internal surface, it is quite lightly built – an advanced feature found in later humans."* *Медицина – самая консервативная отрасль науки и практики, которая всегда хранит тайны. Но информированность в современном обществе – это обязательный атрибут.*

In Russian articles under study the scientist's commentary is accompanied by a significant amount of parentheses that are used for structuring information. According to our research, 56% of parentheses reflect the researcher's argumentation and are specific of scientific texts, while 44%

of the parentheses reflect the emotional or expressive evaluation of the above, which is specific of fiction, conversations, and public speech, e.g. *"Thus, there's been some research to suggest that exercise, both physical and cognitive exercise, is helpful," Plassman added... В результате ребенок начинал ходить на "неправильных" ножках, что только усугубляло болезнь, — страдало все, что только может пострадать: капсула, мышцы, связки...* In the article on modern cell technologies a researcher expresses his negative emotional attitude to the problem, e.g. *К сожалению, бытует мнение, даже среди врачей, что здесь нет никакой науки и никакой проблемы.*

In English popular science articles parentheses are also common in the scientist's commentary, and fronting is widely used to focus the reader's attention on a certain part of the sentence, as well as to illustrate the researcher's logical argumentation and their attitude to what is being told, e.g. *Often, falls lead to a downward health spiral because a senior has lost his or her mobility, Wilson says.*

In addition, a characteristic feature of Russian articles (the scientist's commentary) is the use of such particles as *же, да, даже, вот, уж, все-таки*, etc. that add expressiveness to expert's commentaries and create the impression of equality between the expert and the reader, e.g. *У больных, у которых отсутствует система воздушного звукопроектирования, единственная возможность услышать окружающих — проведение звука по кости. Вот и стремятся во время операции хирурги приблизить звук к кости. Да пришивать ничего и не нужно, — говорит хирург. — Но помочь можно.*

Thus, verbalization of the scientist's commentary occurs on the lexical and the syntactic level. The most common syntactic means are basically the same in the scientist's commentary in both languages, but there are differences in other commonly used means of expressive syntax. In particular, the scientist's commentary in Russian popular science texts is characterized by a wide use of imperatives, exclamatory and interrogative sentences, whereas English popular science texts are characterized by the use of adjunctive and emphatic constructions and parallel syntactic structures. The scientist's communicative aim, as regards English popular science texts, is mainly to inform the readers about new scientific data and study results, to present new knowledge in a logical way, and to evaluate it. In the scientist's commentary in Russian popular science texts, the emotional evaluation of new knowledge is expressed more explicitly which suggests that the scientist's commentary in Russian articles is generally more emotionally coloured than in English ones.



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