

**THE PROBLEM OF TRANSLATING ENGLISH-LANGUAGE
SCIENTIFIC DISCOURSE INTO RUSSIAN
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Abstract: *the article highlights a quite poorly studied topic – the problem of translating English-language scientific discourse into Russian, reveals the features of scientific texts in English. The paper reveals the understanding of the term "discourse" in various sources, and also, using the analysis of the relations "discourse-text", the definition of "scientific discourse" is given. The relationship between the concepts of "discourse" and "text" is that these concepts are in hyper-hyponymic relations. The features of the scientific discourse in English are considered in comparison with the main features of the Russian-language scientific discourse. Among them, there is a significant use of long sentences complicated by participles, gerundial turns; the verb has the main semantic load and it is used more often in the passive voice; the use of means of emotional expression is allowed; there is an appeal to the reader or the interlocutor, etc.*

Keywords: *discourse, scientific discourse, scientific text, features of scientific discourse.*

**ПРОБЛЕМА ПЕРЕВОДА АНГЛОЯЗЫЧНОГО НАУЧНОГО
ДИСКУРСА НА РУССКИЙ ЯЗЫК
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Аннотация: *в статье освещается достаточно малоизученная тема – проблема перевода англоязычного научного дискурса на русский язык, раскрываются особенности научных текстов на английском языке. В статье раскрывается понимание термина «дискурс» в различных источниках, а также с помощью анализа отношений «дискурс-текст» дается определение понятия «научный дискурс». Соотношение между понятиями «дискурс» и «текст» заключается в том, что эти понятия находятся в гипергипонимических отношениях. Рассмотрены особенности научного дискурса на английском языке в сравнении с*

основными чертами русскоязычного научного дискурса. Среди них значительное употребление длинных предложений, осложненных причастиями, деепричастными оборотами; глагол имеет основную смысловую нагрузку и чаще употребляется в страдательном залоге; допускается использование средств эмоциональной выразительности; есть обращение к читателю или собеседнику и т.д.

Ключевые слова: *дискурс, научный дискурс, научный текст, особенности научного дискурса.*

The task of correctly translating the English-language scientific discourse is acute in our time – a time of scientific discoveries and inventions, a time when the role of information exchange between scientists around the world is becoming key with a rapidly growing level of development. Despite the fact that we have many alternative methods of translation, ranging from ordinary online services that are all available, and ending with a large number of special programs, we can confidently rely on a translation made by a person, a professional in their field. Scientific translation is a difficult task even for experienced specialists who know a foreign language well. This is due to the fact that not every one of them sees the difference between the necessary means for literary translation and scientific, not everyone is aware of the features of scientific texts.

In order to define scientific discourse, it is necessary to find out what the very concept of "discourse" means. There are no precise and unambiguous considerations on this score among researchers of all fields that this term has touched. Thus, philosophers, whose subject of research is the general laws of the development of the nature of human thinking and society, understand by discourse "the consistent unfolding of thinking about an object, expressed in concepts and judgments, as opposed to intuitively grasping the integrity of an object before analyzing its parts" [1, 17]. For psychologists, the discourse " ... acts as a kind of connecting link that unites numerous psychological, social, and cultural manifestations of the inner experience of the individual..." [2]. In the science where the term takes its roots - linguistics, there is an understanding of this phenomenon, which has changed over time and found new reviews for consideration, and therefore is also not dogmatic and not holistic. Thus, in the work "Discourse Analysis" by the American linguist and Professor Zellig Harris, in which this term "originated" for linguistic science, it is understood as "a sequence of statements, a segment larger than a sentence", noting in the same place that "...language does not occur in stray words or sentences, but in connected discourse-from a one-word utterance to a ten- volume work, from a monolog to a Union Square argument" [3, 3]. And in the works of the representative of French structuralism – Michel Foucault, thanks to whom a rapid study of the term began, discourse is considered as an independent autonomous sphere that is self-regulating and is the primary practice in relation

to all others. He gives the following understanding of the discourse: "a set of statements that obey the same system of formation", where the "system of formation" refers to the rules of use, application of statements [4, 210].

The Russian linguist N. D. Arutyunova defines the term "discourse" as "a coherent text in combination with extralinguistic, pragmatic, socio-cultural, psychological and other factors, a text taken in a conceptual aspect; speech, considered as a purposeful social action, as a component involved in the interaction of people and the mechanisms of their consciousness (cognitive processes). Discourse is a speech "immersed in life" [5, p. 136]. This explains the impossibility of applying this term to ancient languages, whose connection with life cannot be restored directly. At the same time, the author adds that it is inseparable from extralinguistic factors. Philologist A. I. Varshavskaya is of the opinion that the discourse is the mental side of the language, while the text is the linguistic side. "The text reflects the result of discursive thinking – the course of thoughts, their sequence, the connection of ideas" [6, p. 29]. In this article, to consider the concept of "scientific discourse", the definition given by Yu. A. Komarova was taken as a basis: "discourse in its broad sense is a certain set of specially structured and organized texts that are located in a single thematic field and are characterized by common stylistic features; a narrow understanding of this term implies its interpretation as a communicative and integral speech work, which is characterized by both linguistic (language and speech) features, and extralinguistic factors and circumstances" [7, p. 79].

Professor of the University of Amsterdam, T. A. Van Dijk, in his work on ideology, where he says that such macrosocial phenomena as ideology and culture are reproduced in the form of collective representations of reality in discourse. In the course of a communicative act between members of social groups, ideological socialization is carried out in the discourse. Considering the discourse as a text or conversation, in a narrow sense, they distinguish only the verbal component of a communicative action and speak of it further as a "text" or "conversation". In this sense, this term refers to the ongoing or already completed result of a communicative act, the result, written or speech, which is understood by the recipients. In other words, in the most general sense, a discourse is a written or verbal product of a communicative action.

Van Dijk also makes the following distinctions between text and discourse. "Discourse" is an actual pronounced, spoken text, while "text" is an abstract grammatical structure of what is being talked about, the structure of which speech consists [8].

The Russian linguist V. I. Karasik was guided in the direction of styles when studying types of discourse in his research. The linguist studied the term "discourse" and, taking sociological criteria as the basis of the typology, created a classification of its types: the discursive environment, the status-role characteristics of the participants in the discourse and the distance of communication. Based on this, the researcher presents two types of discourse:

personality-oriented, or personal, and status-oriented, in another way-institutional discourse [9]. In the first type, the creator of the message acts as a person with all the wealth of his inner world, and in the second - as a person-a representative of a certain social institution. Institutional discourse is a communicative phenomenon that occurs within the framework of a particular social institution, where each of the communicants plays a certain social role. The main task of the author of scientific discourse is to present his vision and prove its truth in the process of cognition of the object of scientific research. Among the institutional discourse, there are political, legal, pedagogical, military, religious, mass information, stage, business, advertising, etc. Among them, he also names scientific discourse [10].

So, based on the analyzed definitions, we understand the term "scientific discourse" as a set of texts organized in a special way with characteristic stylistic features and having an evidentiary system of knowledge. That is, the consideration of scientific discourse through the analysis of scientific texts is appropriate and justified.

In this case, we can identify the main types of scientific texts. As you know, all of them are divided into primary and secondary, where primary means primary sources, or originals, and to the second – texts created on the basis of primary ones. These are theses, abstracts, reviews, etc. The first ones include monographs, scientific articles, dissertations, etc.

Any text is always based not on one text category, but on several, as a result of which the text is created as a communicative system. Some such categories have their own functional orientation, exist in the form of genre variants and functional-style variants. In addition to the general (global) characteristics of scientific discourse, such as coherence and integrity, textual characteristics include logical completeness, evaluativeness, informativeness, uniformity, intertextuality, etc.

A specific feature of scientific texts is also the use of various artificial languages. These include graphs, drawings, logical symbols, mathematical signs, names of elements, etc. This can also include the use of references, notes that are included in the text due to the requirement of its accuracy.

The semantic side can be characterized by the wide use of lexical units with an abstract meaning, which is explained by the abstract nature and generality of scientific discourse, as well as by the fact that here everyday words acquire a special meaning. The most visible feature of scientific discourse is its high terminology, which requires the most precise definition of the concepts that these terms are called.

From the grammatical side, we should mention the frequent use of a certain form of verbs, namely the present tense form of an imperfect form, since it has a timeless meaning, which is declared by the requirement of generality, and the past tense. Passive verbs when describing processes help to focus attention not on the subject of the action, but on the process itself.

As an example of one of the features of the English-language scientific discourse, we can name the structure of IMRAD or IMRaD, which is an abbreviation of Introduction, Methods, Results, and Discussion, which are the four key sections of a scientific article. This structure is the result of the evolution of scientific publications. Previously, articles were written without a clear structure, including chronological. The first structure of writing works was invented in 1876 by Louis Pasteur, describing it in his book "Studies on Fermentation", but then it only resembled IMRAD.

In the 1970s, this standard for writing scientific articles was finalized and actually became required for articles about empirical research. Scientists believe that the structure is not an arbitrary format, but acts as a reflection of the process of scientific discovery and scientific society, and requires an accurate consistent form. Here, much attention is paid to the unification of the structure of the presentation, but in no case not the opinion or vision of the scientist himself. English-speaking researchers adhere to it in order to reduce empty verbosity, to bring clarity and concreteness to the work. The study is conducted in the following order:

Introduction – Why was this study conducted and what was the main question, hypothesis or purpose of the study?

Methods – The time, place and image (form) of the study. What materials were used or who was included in the study groups (patients, etc.)?

Results – Was the answer to the question found or was the hypothesis proved, what was eventually found out?

Discussion – At this stage, the results obtained are compared with the results of other authors, the solution found or the conclusion of the work is discussed.

Thus, the English-speaking scientific community fulfills the requirement of logical and accurate scientific discourse.

In order to determine the features of the English-language scientific discourse, it is necessary to compare it, either with the opposite type of discourse, which includes literary texts, or, in our case, with the Russian-language scientific discourse. S. A. Yarunina highlighted the lexical and grammatical features of scientific texts in Russian and English [11]. But before that, she pointed out common features, including the limited use of synonyms and synonymous structures, with their careful selection. There is a certain set of lexical expressions and phrases used in almost all scientific texts, they give an understanding of the information given in the text in a simpler form for perception. These include introductory words that indicate the sequence of presentation and the connection of thoughts, for example: first, so, first of all, in this way, etc.

The following features are presented in Table 1, where the Russian-language and English-language scientific discourse were compared.

Table 1. Comparison of Russian-language and English-language scientific discourse

English-language scientific discourse	Russian-language scientific discourse
Morphological structure	
Mostly long sentences are used, complicated by participles, gerund turns.	There is a frequent use of short sentences, but complex sentences are also common.
Starting point in the description	
Verb forms are used.	A large number of nouns are used.
Vaguely personal suggestions	
Pronouns are used for formation «they» and «one».	Pronouns are not used at all. In this case, the action is transmitted by using the verb in the third person plural.
Verbs	
The real action is in the sentence and an important role is played by the verb that has the main semantic load. The verb is used mainly in the passive voice.	The use of a large number of verbs with a broad abstract meaning, such as: to have, to be, to be considered. Nouns, adjectives, and only then verbs are more important.
Emotional coloring	
It is allowed to use expressions that carry not a neutral, but an emotional expression, and exclamations are allowed. For example, <i>fried one's brains</i> – «сломали голову», <i>dramatic example</i> - literally «драматичный пример», but it is more often translated as «яркий пример».	Restrictions on the use of imagery, emotional and artistic expressiveness.
Requests	
An appeal to the interlocutor(reader) is inherent: <i>you, yourself</i> .	Completely neutral sentences, with complete impersonality.

Features of scientific texts can be considered from a different angle, dividing them into two groups: internal and external. The former includes the standard organization, structure of an academic text (sequence of parts, paragraphs, chapters, etc.), terminology, and use of so-called "artificial" language (tables, drawings, graphs, etc.). The latter, internal features, include such features as the transmission of material in the form of a specific problem and its

solution(clarification), the movement of thought from the general to the particular (study, clarification), persuasion (proof), evaluation.

However, even if they have common features as a scientific discourse, scientific texts in English and Russian have their own distinctive features and characteristics. So, as a result of the analysis of the article and its translation, the following features of the English-language scientific discourse were revealed:

1. The story is narrated in the first person.

Whereas in the Russian-language scientific text, pronouns are omitted, or plural pronouns "we" are used.

Original version (V. Sdobnikov)	Translation (Сдобников В.В.)
<p>Proceeding from the premise that any turn implies a change of direction, of a motion vector, <i>I, first</i>, shall note the approach that served as the start point of the further development of the science of translating [12, p. 297].</p>	<p>Исходя из того, что всякий поворот предполагает изменение направления, вектора движения, <i>следует отметить</i> то направление, которое послужило начальной точкой отсчета для последующего развития науки о переводе [12, с. 309].</p>

When translating, the pronoun in the English passage is omitted, and the sentence itself becomes impersonal.

1. It is allowed to use idioms, some means of artistic expression, and metaphors.

Original (Yarkina Natalia, Liudmila Yarkina, and Ivan Pougachev)	Translation (Н.В. Яркина, Л.П. Яркина, И.А. Пугачёв)
<p><i>The paper</i> allows for a better understanding of ideology-related problems in translation, helps identify essential factors influencing translator's choices and could be used as a guidance in translation practice [13, p. 383].</p>	<p><i>Данное исследование</i> позволяет лучше понять сложности перевода, связанные с отражением идеологии, установить основные факторы, влияющие на выбор, перед которым стоит переводчик, и может служить руководством в переводческой практике [13, с. 384].</p>

Due to the fact that the Russian-language scientific text does not tend to use metaphors, when translating it, it is replaced by its main meaning.

2. Preference is given to using subjects as the subject in a sentence.

Original (Leontovich, Olga)	Translation (Леонтович Ольга)
<i>The research</i> shows that transformations and use of different translation strategies can have both positive and negative consequences [14, p. 399].	<i>Установлено</i> , что использование трансформаций может иметь как положительные, так и отрицательные последствия для межкультурной коммуникации [14, с. 400].

A sentence with a subject *the research* when translated into Russian, it becomes impersonal.

Conclusions. The term "discourse" does not have an unambiguous and exhaustive definition, which makes it difficult to study, classify, systematize, etc. This is due to the fact that the term, its use in the scientific community, began relatively recently, and has its own understanding in many overlapping sciences, as well as in completely different ones.

Based on the considered definitions, we can conclude that there are two main understandings of "discourse": the first is a communicative event that occurs between the speaker and the listener, the second is a text, a product of a communicative event, an ongoing or finished result.

As for scientific discourse, here we propose to give the following definition: scientific discourse is the linguistic activity of expressing new knowledge in the whole text and its argumentation by related arguments. Scientific discourse is presented both in the form of a dialogue of researchers, and in the form of a text - a scientific work, including such scientific texts as an article, monograph, textbook, etc.

By analyzing the understanding of the term "discourse" from different points of view and considering the understanding of the term "scientific discourse" by different linguists, it gives grounds to believe that the scientific text is its structural component, i.e. these concepts are in hyper-hyponymic relations, which makes it possible to consider the question of translating English-language scientific discourse into Russian through the concept of text.

Scientific discourse, despite the fact that it has common features that are characteristic of it, regardless of the language, also has distinctive features that stand out on the basis of the language. This is the difference between English-language and Russian-language scientific discourse. This difference is encountered by the translator when translating scientific texts, which makes it difficult and raises new questions in the translation process.

The features of English-language scientific discourse can be viewed from different angles, but for its translation, they should be considered in comparison with the translation language. In this case, the English-language scientific discourse differs in its internal features, which include the way the material is

presented in the form of a certain problem and its solution, proof, sequence of thoughts in reasoning from general to particular, and evaluation. Comparison of the source data analysis of English texts and their translations into Russian shows that these differences affect the translator's understanding of the source text, the translation process itself, and the final translation. They require special translation solutions that do not allow direct translation.

Translation of English-language scientific texts requires the translator to have knowledge of the field of science referred to in the outgoing text, knowledge of the appropriate terminology, etc. The main requirement, regardless of the field of knowledge, is awareness of the features of scientific discourse in both the original language and the translation language. Thus, for a correct and high-quality translation of English-language scientific texts, it is necessary to know the main differences between them and Russian-language ones, i.e. to know the features of the English-language scientific discourse.

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