

**LEXICAL AND GRAMMAR PECULIARITIES OF TRANSLATION OF ENGLISH  
SCIENTIFIC AND TECHNICAL TEXTS**

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**ANNOTATION**

The article considers the peculiarities of translating English technical texts into Russian, explores the lexical and grammatical difficulties that a translator should overcome when working with such material. An attempt was made to identify the main obstacles, occurring due to the differences in the construction of the two languages, challenging the specialist.

**Keywords:** technical text, lexical and grammatical features, general and narrower context, translation process.

**Аннотация**

Статья рассматривает особенности перевода англоязычных технических текстов на русский язык, исследует лексические и грамматические трудности, которые следует решать переводчику при работе с таким материалом. Сделана попытка раскрыть основные вызовы, стоящие перед специалистом, вследствие различий в строении двух языков.

**Ключевые слова:** технический текст, лексико-грамматические особенности, общий и узкий контекст, процесс перевода.

**INTRODUCTION**

Scientific and technical literature includes such sources as technical books, monographs, articles from technical journals, technical descriptions, patents, technical reference books, catalogs, etc. These texts are usually full of special terminology.

For specialists with good technical training, but insufficiently proficient in English, the main difficulties in understanding the content will be associated, first of all, with the phenomena of the language difficulties.

How many words do we need to know to be able to read scientific and technical literature, almost without using a dictionary? Special studies and experience in teaching translation show that a vocabulary of 2500-3000 units is quite sufficient for this purpose. What words should be included in the minimum dictionary in the first place? Usually, the main feature of a scientific and technical text is considered the presence of a large number of media terms in it. According to A.N. Parshin, "The terms should provide a clear and precise indication of real objects and phenomena, establish an unambiguous understanding of the transmitted information by specialists. Therefore, special requirements are imposed on this type of words [1, 44]."

Maybe, first of all, we need to learn exactly these terms? Many people think that way. To answer this question, we must clarify what should be understood by terms. From the point of view of a specialist, a term is a word (sometimes a group of words) that serves to denote a special concept. For example, *Invoice* «счет-фактура» is an economic term, *rotary current* «трехфазный ток» is

an electrical term. The number of terms for each field of science and technology is enormous and is measured in tens of thousands. What is more, in connection with the development of science and technology, new special concepts and terms corresponding to them constantly arise. But at the same time, common words are very often used as terms. For example, for mechanical engineering such terms are the *air* «воздух», *cold* «холодный», *space* «пространство». From the point of view of memorization, these terms are no different from ordinary words. Being familiar with these words makes it possible to assimilate and translate a large number of other terms that are difficult words, such as *air-cooling* «воздушное охлаждение», *outer space* «пространство вне земли», *cold loop* «холодный контур».

It is quite obvious that when studying a foreign language, it is necessary, first of all, to master such terms that denote the basic, most important concepts. In addition, each specialist must learn a number of the most important highly specialized terms of the relevant field of science and technology, for example, such as *leverage* «подъемная сила», *vacuum tube* «электронная лампа», etc.

Further, words and phrases, typical for the style of scientific and technical literature must be mastered. For example, *to conclude* «заключать», *to draw a conclusion* «делать выводы», *examine* «исследовать», *to attempt* «делать попытку», *to take into consideration* «принимать во внимание». This also includes words common to various fields of technology. For example: *to produce* «изготавливать», *a test* «испытание», *to find use* «находить применение», etc.

One-word terms, as a rule, do not cause great difficulties in translation, since they have the usual word-formation structure and are translated in a direct way, namely, by searching for equivalents in a dictionary entry or determining their meanings by the semantics of the root morpheme and affixes. Particular difficulties arise when translating compound terms, which are known to be characterized by a strict hierarchy of components. In addition, there is a strict semantic dependence between the components of such polynomials. So, the components of verbose terms, formed by both free and stable phrases, enter into a functionally conditioned morphological and syntactic connection of the item, and thus, with their separate-total meaning, form a new terminological unit. Dzens N.I. writes: "Many thematic clichés acquire a systemic meaning, are noted in bilingual dictionaries and can also be stored in the long-term memory of native speakers and translators, acting as ready-made, standardized (stereotypical) phrases [2, 24]."

Scientists distinguish a general context and a narrower context. The general context refers to the content of a particular sentence and the text as a whole. The general context serves as a background against which the meaning of each word is revealed or clarified. A narrower context is understood as the lexical meaning of words associated in a sentence with a given word and determining its meaning. For an adjective, it is important to consider the lexical meaning of the noun it is associated with (e.g. expanded air «разреженный воздух»); for an adverb associated with a verb, the lexical meaning of the verb (for example, clearly marked «четко выраженный»); for a certain group of adverbs, their position in the sentence before an adjective or another adverb (for example, relatively fast «относительно быстро»); for some adverbs, a position before a noun group (for example, immediately after the war «тотчас после войны»).

When determining the meaning of a preposition, it is important to take into account the lexical meaning of the noun before which it is used (for example, on the terms «на условиях», under contract «по контракту, на условиях контракта»)

When defining the meaning of a noun, one must take into account the lexical meaning of the defining noun (for example, constructing a powerplant «строительство электростанции»); for some nouns, using them in the plural (for example: relationship «отношение», relationships «закономерность»).

When determining the meaning of a verb, it is necessary to take into account the meaning of the noun-subject (for example, the engine is running «двигатель работает»), the noun-direct object (for example, cause difficulties «создавать трудности»).

It is recommended to engage in word-formation analysis to determine the meaning of an unfamiliar word as an additional technique after using the general context and syntactic relations of the word.

To better remember a new word, one need to try to see its constituent elements in it and, as far as possible, understand their meaning. One must be able to imagine the process of a gradual change in the meaning of the main word from the addition of derivational elements to it or from its inclusion in the composition of a compound word as the first or second component. In other words, trace the formation of a word-building series and determine the place of a given word in this series. You should also pay attention to the extent to which Russian equivalents form a similar series, for example, translations of words that form a series from the verb *to distort* in Russian also form a series that begins with the verb «искажать» (distortion «искажение», distorted «искаженный», undistorted «нейскаженный», distortionless «нейискаженный», distorting «искажающий»). It should be borne in mind that the largest number of derivative words are formed from verbs. Therefore, special attention should be paid to the assimilation of verbs.

This type of work teaches to perceive the word not as a ready-made indecomposable unit that must be memorized in its entirety, along with the Russian translation, but teaches you to work on the word consciously. In a new word, we must see the elements already familiar to us and recognize the ways of its formation; then the translation of this word will be more reasonable. And we will make sure that there are almost no absolutely new words. Each "new" word will organically enter the system of already familiar words. In other words, one must try to memorize words not purely mechanically, but consciously, not only to memorize them, but also to think about them in the process of memorization.

When translating original scientific and technical literature, one inevitably has to turn to a dictionary for help. It is recommended to use the general English -Russian dictionary and special terminological dictionaries. The general English -Russian dictionary should be quite large in volume (60-80 thousand words), since, firstly, short dictionaries contain significantly fewer words, and, even worse, dictionary entries of individual words often lack those meanings and cases of using words that are just characteristic of the original text.

It is very important to know in which case you need to refer to the general dictionary and in which - to the terminological one, where and how to look for each specific word in the dictionary, how to use the dictionary when the desired English word is not in it.

To answer these questions, let's try to imagine the whole process of translating a particular unfamiliar word in a text. As already mentioned, first you need to try to determine the meaning of an unfamiliar word without the help of a dictionary, based on the context of the sentence and the meaning of the words syntactically related to the given word, as well as using knowledge of the word-building elements of the word. If you cannot translate the word, then you should refer to the general dictionary. When choosing a meaning, one must take into account the belonging of a given word to a certain part of speech (for example, to distinguish between an adjective and an adverb), and also take into account elements of context (for example, for a verb - the preposition that it controls). If the general dictionary does not contain a given word, then it can be assumed that this is a special term and, therefore, it must be looked up in a special (terminological) dictionary. If the term - a compound noun - is not in the dictionary, then it should be translated in parts and literally, in order to understand the meaning of the term and select the appropriate Russian equivalent.

Let us now consider questions related to the field of grammar.

When translating scientific and technical literature, there are a lot of difficulties associated with the recognition in the text and the translation of various grammatical forms and structures.

The nature of these difficulties is very different and is closely related to the specific features of grammatical constructions.

So, a completely natural and, in general, correct habit of relying on notional words (nouns, adjectives, verbs, adverbs) when translating, as a rule, are quite long and noticeable, often leads to a distortion of the meaning, since such functional words are ignored, as articles, prepositions, pronouns (very short and inconspicuous compared to significant words). Due to the relatively "strict" word order in English, word order change can only in a few cases be used to emphasize "new" in a message. One of the functions of the indefinite article is to indicate the word containing such a "new" message. At the same time, the definite article may indicate that such a word or group of words should be looked for elsewhere in the sentence [3]. This function of the article is especially clearly revealed when it is used with the subject. For example, let us compare two sentences:

*A meeting in defense of peace was held in the Trafalgar Square yesterday.*

In this sentence, the subject is framed by the indefinite article, indicating that it is the semantic center of the statement. In a technical translation from English into Russian, this function of the article will be transferred by setting the subject group at the end of the sentence: «Вчера на Трафальгар-сквер состоялся митинг в защиту мира».

*The meeting in defense of peace was held in the Trafalgar Square yesterday.*

In this sentence, the definite article at indicates that the "new" message is contained in the subsequent part of the sentence. This gives the technical translator reason to keep the direct word order in the translation from English into Russian: «Митинг в защиту мира состоялся вчера на Трафальгар-сквер».

A specific difficulty of the English scientific and technical text is also the abundance of large complex sentences with a large number of insert clauses (within the main one). When translating such sentences, there is a danger of losing the semantic thread, since words related in meaning are torn off from each other. For example, the subject and the predicate are often

separated. Therefore, it is necessary to learn a special technique for translating such sentences, which consists in the fact that the inserted elements are first temporarily excluded from the sentence in order to better understand its general structure.

Due to the differences between the two languages, it is imperative to edit the original translation, ensuring that the translation correctly conveys the content of the English sentence and complies with the norms of the Russian language. At first, editing is done after the translation of the sentence as a whole. Then, as the translation skills improve, it happens "on the fly", in parallel with the translation of the sentence.

In conclusion, it should be emphasized that in order to create strong translation skills, it is necessary to master the fundamental sequence of all basic actions related to the translation of an English sentence.

The process of translating an English sentence and the text as a whole basically coincides with the natural process of reading (words and semantic groups are translated in the sequence of their location in the sentence). However, differences in the structure of the two languages lead to the fact that this order is often violated. It is necessary to understand well when exactly the translation sequence is violated and how to act in such cases.

In order for the main attention during translation to be directed to the ultimate goal - the most complete and accurate understanding of the content of the text and the correct and accurate expression of this content by means of the Russian language - it is necessary that all translation actions be performed freely, with minimal effort and time, as if by themselves, in other words, were maximally automated.

#### **LIST OF LITERATURE**

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