

## EQUIVALENCE AND ADEQUACY OF TRANSLATION OF SCIENTIFIC AND TECHNICAL TEXTS

**Azimova N.A.**

**Babamuradov O.S.**

assistant teachers of Foreign  
Languages Department of ShSPI

### ABSTRACT

Scientific and technical translations, due to the special requirements for them, demand considerable attention to achieving the equivalence and adequacy of translation from English into Russian. In translation, there are a number of special methods aimed at creating an adequate translation. So, there are two methods of translation: direct translation and indirect translation. This article is devoted to considering means of achieving equivalence and adequacy in translation of texts of scientific and technical nature.

**Key words:** adequacy, equivalence, direct and indirect translation, methods of translation, transformations.

### АННОТАЦИЯ

Научно-технические переводы в связи с особыми требованиями к ним требуют значительного внимания к достижению эквивалентности и адекватности при переводе с английского на русский язык. В переводоведении существует ряд специальных приемов, направленных на достижение адекватности в переводе. Итак, существует два метода перевода: прямой перевод и косвенный перевод. Данная статья посвящена рассмотрению средств достижения эквивалентности и адекватности при переводе текстов научно-технического характера.

**Ключевые слова:** адекватность, эквивалентность, прямой и косвенный перевод, приемы перевода, трансформации.

Indeed, there may be a case where a message in the source language is perfectly translated into a message in the target language, because it is based either on parallel categories (structural parallelism) or on parallel concepts (metalinguistic parallelism). But it can also happen that the translator ascertains the presence of a “gap” in the target language, which must be filled with equivalent means, ensuring that the overall impression of the two messages is the same. It may also happen that, due to

structural or metalinguistic differences, some stylistic effects cannot be conveyed in the target language without changing to one degree or another the order of the elements or even lexical units. It is clear that in the second case, it is necessary to resort to more sophisticated methods, which at first glance may cause surprise, but the course of which can be traced in order to strictly control the achievement of equivalence. These are methods of indirect translation. Methods 1, 2 and 3 are straightforward. The rest of the methods are indirect.

#### 1. Borrowing.

When the semantics, structure, and form (sound composition and spelling) of a term are borrowed in the process of translation, we are dealing with borrowing that allows us to fill in a gap, usually of a metalinguistic nature (new technique, unknown concepts). Borrowing would not even be such a translation method that we might be interested in, if the translator did not sometimes need it in order to create a stylistic effect. For example, to bring the so-called local flavor, you can use foreign terms and talk about верста and пуд in Russia, dollars and brandy in America, tequila and tortilla in Mexico, etc.

There are also old borrowings, which in essence are no longer borrowings for us, because they figure in the lexical composition of our language and have already become familiar. The translator is primarily interested in new borrowings, and even borrowings of an individual character. It should be noted that often borrowings enter the language through translation, among them semantic borrowings, or “false friends of the translator”, which should be especially wary of, appear.

The problem of local color, solved with the help of borrowings, affects, first of all, the sphere of style and, consequently, the message itself.

The main trends in the translation of neologisms of scientific and technical texts is the borrowing of new terms or their tracing. A huge wave of borrowings that came in the 90s of the XX century, replenished the lexical composition of the Russian language with many general technical, engineering and especially computer terms, many of which are documented in dictionaries, for example, chip, Internet site and others. However, the excessive borrowing of terms today, fortunately, is giving way to lexical substitutions. Despite this, unreasonable borrowing of terms or realias already existing in the Russian language is still often encountered. In this regard, it is necessary to focus on the availability of a translation option in the Russian language and on the absence of the need for borrowing.

For example, to upgrade - update, improve, but not сделать апгрейд.

#### 2. Calque.

Calque is a borrowing of a special kind: we borrow a particular syntagma from a foreign language and literally translate the elements that make up it. In this way we get

either a tracing of an expression, and we use the syntactic structures of the target language, introducing new expressive elements into it, or a tracing of the structure, and we introduce new constructions into the language, for example, Science – fiction (literally наука–фантастика).

As in the case of borrowings, there are old stable tracing documents that can only be mentioned in passing, since they, like borrowings, can undergo semantic evolution, becoming “false friends”. More interesting for the translator is the new calques, with the help of which he avoids borrowing, filling in the blanks. In such cases, apparently, it is better to resort to word formation based on the Greco-Latin fund or to use hypostasis (the transition from one part of speech to another by conversion).

If the structure of the lexical unit being translated in both languages is the same, we are dealing with the so-called semantic calque. Based on the above-mentioned English term tree, the term tree structure was created, which is rendered in Russian by the term *древовидная структура* (and not *древесная структура* or *структура дерева*, as one might expect). When using semantic calque, the structure of the term created in the original language corresponds to the norms of the original language, and the structure of the term created in the target language corresponds to the norms of the target language. The only common feature is the semantics of the terms of both languages, which is why this method of translation is called semantic calque. In technical sciences, element-by-element translation (calque) of complex terms is also widespread: English switching diagram – *коммутационная схема*, motor selector – *моторный искатель*, hard disk – *жесткий диск*.

### 3. Literal translation.

Literal translation, or word-for-word translation, means the transition from the source language to the target language, which leads to the creation of a correct and idiomatic text, while the translator only monitors the observance of the mandatory norms of the language.

In principle, “literal translation is the only reversible and complete solution to the issue. There are many examples of this in translations made from languages belonging to the same family (French - Italian), and especially between languages belonging to the same cultural orbit. If it is possible to state the presence of some cases of literal translation, it is because there are metalinguistic concepts that can also reflect the facts of coexistence, periods of bilingualism and conscious or unconscious imitation, which is associated with political or intellectual prestige” [1, 174]. This can also be explained by a kind of convergence of thoughts, and sometimes structures that can be observed among the languages of Europe (compare, for example, the formation of a definite article, the similarity of the concepts of culture and civilization, etc.), which caused the

appearance of some interesting articles in life, penned by supporters of “General Semantics”.

Prior to this method, it was possible to carry out the translation process without resorting to special stylistic devices. If this were always the case, then the real work would not have to be born, and the translation reduced to a simple transition “source language - target language” would not be of any interest. The solutions proposed by the group at the Massachusetts Institute of Technology, which boil down to the fact that the translation should be entrusted to electronic computers that can carry out it on scientific texts, rests more on the existence in these texts of parallel segments corresponding to parallel ideas, which, as one would expect, come to light in many cases in the scientific language. But if, acting in accordance with Method No. 3, the translator recognizes the literal translation as unacceptable, then it is necessary to resort to an indirect (indirect) translation. By unacceptability, we mean that a message that is translated literally:

- a) gives a different meaning;
- b) does not make sense;
- c) impossible for structural reasons;
- d) does not correspond to anything in the metalinguistics of the target language;
- e) corresponds to something, but not at the same stylistic level of the language.

The equivalence of messages is ultimately based on the identity of situations, which alone makes it possible to assert that the target language contains some characteristics of reality that are not in the original language.

Of course, if we had dictionaries of the signified words, then it would be enough to find our translation in an article corresponding to the situation identified by the message in the original language. Since in reality there are no such dictionaries, we proceed from words or from translation units, which we must subject to special procedures in order to arrive at the desired message. Since the meaning of a word is a function of its place in the utterance, sometimes there is a need for such a restructuring that is too far from the starting point, and no dictionary can take this into account. Since there are an infinite number of combinations between signifiers, it is easy to understand why a translator cannot find ready-made solutions to his problems in dictionaries [2, 18]. Only he alone fully owns the meaning of the message as a whole, in order, guided by it, to make the necessary choice, and only the message itself, reflecting the situation, allows, ultimately, to express the final judgment about the parallelism of the two texts.

#### 4. Transposition.

We call this a way that consists in replacing one part of speech with another part of speech without changing the meaning of the whole message. This method can be used both within one language, and, in particular, in translation.

“Basic and transposed phrases are not necessarily stylistically equivalent. The translator should use the transposition method if the resulting turnover fits better into the whole phrase or allows restoring stylistic nuances” [1, 189]. It should be noted that the transposed turnover usually has a more literary character. A particularly special case of transposition is “crossing”.

#### 5. Modulation.

Modulation is the variation of a message that can be achieved by changing the angle or point of view. This method can be used when it is clear that a literal or even transposed translation results in a statement that is grammatically correct, but contrary to the spirit of the target language [1, 210].

As with transposition, we distinguish between free or optional modulation and permanent or mandatory modulation. The difference between stable and free modulation is essentially a matter of degree. When we are dealing with stable modulation, the high frequency of use, full acceptance by *usus*, fixation in dictionaries (or in grammar) leads to the fact that any person who is fluent in two languages does not hesitate to choose this method.

With free modulation, there is no stable fixation, and the process occurs anew each time. Note, however, that this does not imply that such modulation is optional; it should lead, when applied correctly, to an ideal solution for the target language in accordance with the situation suggested by the source language. So, it can be noted that there is only a difference in degree between stable and free modulation and that free modulation can become stable at any time, as soon as it receives a high degree of frequency or is presented as the only solution (this is usually done on the basis of analysis of bilingual texts as a result of a discussion at a bilingual conference, or, based on well-known translations that have a high literary prestige) [3, 161].

The transformation of free modulation into a stable form always occurs when it is recorded in dictionaries or in grammars and becomes the subject of teaching. From this point onwards, the refusal to modulate is condemned as a violation of the *usus*.

#### 6. Equivalence.

We have repeatedly stressed the possibility that two texts describe the same situation using completely different stylistic and structural means. In this case, we are talking about equivalence. A classic example of equivalence is when an awkward person hammering a nail hit himself on the fingers - in French he exclaims *Aie*, in English he exclaims *Ouch*.

This example, although crude, emphasizes the special nature of the equivalence: it is most often syntagmatic in nature and affects the entire message as a whole. It follows that most of the equivalents that we constantly use are stable and are part of idiomatic phraseology, including clichés, sayings, adjective or substantive stable

combinations, etc. Proverbs and sayings are, as a rule, an excellent illustration of this phenomenon. The same applies to idiomatic expressions: to talk through one's hat, as like as two peas, which in no way should be calqued; and, however, this is what we observe in the so-called bilingual peoples, who are victims of constant contact of their languages, as a result of which they do not really know either one or the other. However, it may happen that some calques are ultimately adopted in another language, if only the situation they denote is new and capable of acclimatizing in another conditions [4, 168]. However, the translator should not take responsibility for introducing calques into a well-organized language: only the author can afford such a fantasy, the responsibility for the success or failure of which rests entirely with him. In translation, one should adhere to more classical forms, since all sorts of innovations in calque give rise to accusations of introducing Anglicisms, Germanisms or Spanishisms into the language.

#### 7. Adaptation.

The seventh method is the extreme limit in the translation process. It applies to cases where the situation referred to in the source language does not exist in the target language and must be communicated through another situation that we consider equivalent. This is a special case of equivalence, the equivalence of situations, so to speak.

The adaptation process can be roughly divided into several stages:

1) preparatory: a list of information sources is drawn up that can help the translator in the process of work; the analysis of the most difficult places is carried out; a plan is drawn up for the implementation of all stages of the project.

2) translation: the collaboration of a specialized translator, editor and technical specialist.

3) final: creating a clear logical structure of the document, searching external sources for missing information and integrating it into the document, developing additional glossaries, dictionaries and reference systems.

Refusal of adaptation, which affects not only structures, but also the very development of ideas, thoughts, and the way they are actually presented in a paragraph leads to the presence in the "correct" text of some indefinite tonality, something fake, which invariably manifests itself in translation. Unfortunately, such an impression is very often produced by texts published by modern international organizations, whose members, out of ignorance or out of a desire for misunderstood accuracy, demand literal translations and maximum calque. The text should not be calque paper either structurally or metalinguistically.

Touching upon an extremely serious problem, which, due to the large volume, cannot be properly considered, namely: the issue of changes in thinking, in the cultural

and linguistic plans, which may lead to the future availability of important documents, school textbooks, magazine articles, scripts for films, etc., created by translators who cannot or do not risk making indirect translations. In an era when “excessive centralization and lack of respect for the culture of others are pushing international organizations to use one working language to create texts, which are then hastily translated by translators whose work is little appreciated and of whom there are always too few, such a situation can arise that 4/5 our planet will be fed exclusively by translations and will die intellectually because of the constant consumption of this mess. [4, 8]”

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