

SEVERAL ISSUES CONCERNING THE TRANSLATION OF SCIENTIFIC TERMINOLOGYⁱ IN RUSSIAN AND SERBIAN

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Abstract: Due to the technical and scientific progress, *the translation of technical and scientific texts* has developed considerably and has gained an outstanding importance nowadays. Although translation of a technical text may seem easier at the first sight, on account of its lack of expressiveness, the task of the translator is hardened in this case by the interference between the lexemes common and technical usage. Therefore, in order to realize a correct translation, it is necessary for the translator to have consistent knowledge in the domain of the translated text and of the real phenomena described and of their designations.

Keywords: transliteration of terms, direct equivalent, calque, inner form, transformational translation, descriptive translation.

1. Introduction

According to research papers approaching translation, the texts are usually divided into three categories: a) informative and scientific texts; b) journalistic texts; and c) literary-fictional texts. Yet, texts belonging to mixed categories are also mentioned, for example popular novels that abound in terms and factual information or scientific texts of popularization within which are used means of artistic expression.

Features that are particular to fictional texts that raise difficulties during the translation process, such as author's intentions and psychological and emotional elements inlaid in text, are not common to scientific texts. On the contrary, scientific texts lack expressivity, are saturated of facts and are characterized by the presence of terms and specific words or phrases, such as *следует иметь в виду, следует отметить, как мы видели, теперь посмотрим, вот, например, или еще один пример* in Russian; *treba imati u vidu, kao što smo videli, a sada da vidimo, kao naprimer, ili još jedan primer* in Serbian or *we must take into consideration, as we saw, further we consider, for example, or another example* in English. In account of these facts, the task of translating scientific texts seems to be easier.

However, closely related to the accelerated progress of science, the importance of terms has increased not only in specialized literature, but also in fictional or journalistic literature. The more specialized a text is, the greater the frequency of the terms it contains is.

2. Our study

While translating terms, the following situations can be encounter:

A. Terms with wide occurrence are rendered through transliteration and do not inquire translation:

- (1) Engl. *antenna* – Rus. *антенна* – Srb. *antena*; Engl. *blooming* – Rus. *блуминг* – Srb. *bluming*.

In the last years, the borrowing of terms and realia during the process of translation has been taking scale. In Russian journalistic texts can be encountered, for example, words like:

- (2) Rus. *лобби* – Srb. *lobi* – Engl. *lobby*; Rus. *босс* – Srb. *bos* – Engl. *boss*; Rus. *офисс* – Srb. *ofis* – Engl. *office*; Rus. *сертификат* – Srb. *sertifikat* – Engl. *certificate*; Rus. *аэрозоль* – Srb. *aerosol* – Engl. *aerosol*; Rus. *микрoфлора* – Srb. *mikroflora* – Engl. *microflora*.

It is hard to suggest which of these lexemes will be assimilated as *мотель* (Srb. *motel*, Engl. *motel*), *дезодорант* (Srb. *dezodorans*, Engl. *deodorant*), *супермаркет* (Srb. *supermarket*, Engl. *supermarket*), *коктейль* (Srb. *koktel*, Engl. *cocktail*) or *стриптиз* (Srb. *striptiz*, Engl. *striptease*) were.

Nevertheless, it must be taken into account that rendering lexemes like *лобби* (Srb. *lobi*, Engl. *lobby*) into another language without translation is not always justified, as available dictionaries of foreign words do not mention all the meanings these words have in English. For example, in the last decade several words have been used with meanings that are not mentioned in the *Dictionary of foreign words*.

- (3) The word *лобби* is used with the meaning of "demonstration";
 (4) The word *босс* is used with the meaning of "protector" or "sponsor".

On the other hand, we are not righteous to claim the same thing in the case of words that are frequently present on international treaties or conventions, such as:

- (5) Rus. *рейтинг* – Srb. *rejting* – Engl. *rating*; Rus. *сайт* – Srb. *sajt* – Engl. *site*; Rus. *менеджер* – Srb. *menadžer* – Engl. *manager*; Rus. *дистрибьютор* – Srb. *distributer* – Engl. *distributor* or Rus. *хит* – Srb. *hit* – Engl. *hit*.

These terms worldwide known have gained unanimous recognition, their usage being convenient especially in the communication among peoples. Yet, we consider that sometimes these terms necessitate additional explanations, especially in the science popularization texts.

Some terms have direct equivalents in the target language and they are translated by these equivalent words. For example:

- (6) Engl. *hydrogen* – Rus. *водород* – Srb. *vodonik*; Engl. *voltage* – Rus. *напряжение* – Srb. *напон*; Engl. *sulfur* – Rus. *серa* – Srb. *sumpor*; Engl. *gravitation* – Rus. *тяготение* – Srb. *gravitacija*.

Many terms are translated through calque by using words and phrases that render literally the source language words or phrases. For example:

- (7) Engl. *brainwash* – Rus. *промывание мозгов* – Srb. *ispiranje mozgova*; Engl. *brain drain* – Rus. *утечка мозгов* – Srb. *odliv mozgova*; Engl. *witch hunting* – Rus. *охота за ведьмами* – Srb. *lov na veštice*.

As evidenced in the following examples, calque is also possible in the case of which internal form of the source language term is clearly evidenced:

- (8) Engl. *superpower system* – Rus. *сверхмощная система* – Srb. *sistem velike snage*; Engl. *single-needle instrument* – Rus. *однострелочный аппарат* – Srb. *držač za jednu iglu*.

As a rule, the internal form of the term points out its meaning. It is not difficult to understand that *sunflower* is rendered in Russian through the word *подсолнечник* (Srb. *suncokret*). Although, internal formⁱⁱ of many terms, especially if they are not from the social or political domains, not only that is not helping the translator in his work, but can even deceive him. Deceiving are, for example, the components of the well spread word *supermarket* (Srb. *samoposluga*). If we translated this term into Russian on the base of its components, we would obtain *сверхрынок*, term that very vaguely express the actual meaning of the word, *магазин самообслуживания, магазин без продавцов*.

There also exists the so named transformational translation, by means of which notional structure of the source-language lexeme is changed or replaced if its meaning can be understood from its internal form. For example:

- (9) Engl. *Commonwealth* – Rus. *содружество наций* – Srb. *udružene nacije*.

Sometimes even the specialized dictionaries do not mention equivalent terms. In this case, the translator must give a descriptive translation of the term, which, although difficult and uncomfortable, can accurately render the meaning of the foreign term in the given context. For example:

- (10) Engl. *video-gain* – Rus. *регулировка яркостей отметок от отраженных сигналов* – Srb. *pojačavač signala*.

Russian and Serbian translators would rather use terms of slavonic origin in order to render English terms during the process of translation, as follows:

- (11) Engl. *industry* – Rus. *промышленность*/ Srb. *poljoprivreda* instead of *индустрия/ industrija*; Engl. *agriculture* – Rus. *сельское хозяйство*/ Srb. *zemljoradnja* instead of *агрикультура/ agrikultura*; Engl. *partial* – Rus. *частичный*/ Srb. *delimičan* instead of *парциальный/ parcijalan*; Engl. *equidistant* – Rus. *равноотстоящие*/ Srb. *ravnostrani* instead of *эквидистантные/ ekvidistantan*.

Generally, in a specialized text terms are used in a greater measure than common words. Even though from a theoretical point of view terms should be monosemantic, they do have more meanings like the common words and function in different science fields as denotates of different objects or notions. Examples of this phenomenon are many:

- (12) German term *lager* 1) in the field of mechanics has the meaning of "bearing", 2) in the field of geology it designates a "deposit" and 3) in commerce is used with the meaning of "warehouse";
 (13) Russian term *бар* 1) in geography designates a "shoal", 2) in the field of machine building designates a "bar" (a combine knife), 3) in meteorology it is used to

- designate the "unity of measure for atmospheric pressure" and 4) in common Russian designates a "pub";
- (14) polysemantic Russian term *банка* convey the following terminological meanings: 1) "financial institution which collects payments, gives credits and organize money circuit" and 2) "can";
- (15) polysemantic Serbian lexeme *банка* convey the following terminological meanings: 1) "financial institution which collects payments, gives credits and organize money circuit and" 2) "bank note".

Polisemantic terms, as they have several terminological meanings or several terminological and common meanings, are a potential cause of translation difficulties in the same way the polisemantic words are. In order to obtain an accurate translation, it is necessary for the translator to choose the adequate word from those which convey the different meanings of the term to be translated. What lays at the basis of obtaining an accurate translation is detailed knowledge in the field, deep understanding of the described phenomena and possession of their names. For example:

- (16) Russian term *стремится к бесконечности* or the Serbian *težiti ka beskonačnosti* in common English will be translated as *aspire to eternity*, while in the field of Mathematics as *tend to infinity*.

3. Results

In translations of technical and scientific texts are usually used terms already established/consacrated in the target language in the field the source text belongs to. Eventhough wise usage of dictionaries is necessary and useful, during translation process it cannot replace comprehensive knowledge in the field. Barchudarov asserts in his wideknown course on theory of translation that profound knowledge of the object of translation is the essential premise for an accurate translation. When he found the term *public school* translated as *общественная школа* ("social school") in a Russian journal, he drew his readers' attention on the fact that the only social ("общественный") feature of such a school is the fact that its entire activity is supervised by a trusteeship council. The other features can be public or of state, but not social. In the case in which the source text belongs to a field very different from the translators academic preparation or the terms it contains are new and, thus, inexistent in specialized dictionaries, the meaning of a term must be decoded starting from its form and the large context the text situates in. Consequently, although philological preparation of the translator and his skills for analyzing the relation established among the lexical roots of the terms and among its meanings cannot substitute specialised knowledge in the process of establishing the adequate meaning of a term, they are of a great importance and can be really useful.

Regardless of the source text language, the features of the technical texts (precision of the expression, clarity of the definitions, conciseness of the form) dictate the choice of the words, terms or syntactic construction made in the target language during the translation process. One of the main practical tasks of the translation is to chose the right equivalent in the case in which in the target language exist two equivalents: a) an autochthonous word and b) a borrowed word.

By the time of classification and appreciation of the terminological arsenal from a certain field, one should consider:

- A.** Borrowings that are justified and useful:
- a. borrowings which cannot be replaced with autochthonous words and which had already enter the lexicon of the target language (in this category are primarily included the international words);
 - b. borrowings which, even though have synonyms in the target language, convey clarifying meaning units important in delimitating the notion they denominate. For example:

(17) Russian lexeme *артикуляция*/ *Srb. artikulacija* as terms in the field of Phonetics which designate the function of the speech organs at the time of sound emission are not equivalent to the Russian words *произношение* or *произнесение*/ *Serbian jasan izgovor*, which convey a larger meaning.

- B.** Borrowings that are accepted in strictly determined contexts due to their conciseness or due to a necessary stylistical variation. This is the case in which the borrowing replaces a long set phrase from the target language contributing to a more concise expression.

(18) *Rus. консонантизм*/ *Srb. konsonantizam* are often used instead of set phrases *Rus. система согласных*/ *Srb. suglasnički sistem*.

The use of the borrowing term is preferred especially when one of the Russian/ Serbian set phrase components/ constituents are widely used in other collocations, having a high individual frequency. As an example we can consider the following:

(19) We can notice preference in using term *Rus. идиом*/ *Srb. idiom* instead of *Rus. фразеологическое выражение*/ *Srb. frazeološki izraz*.

- C.** Unuseful borrowings which make the understanding of the text more difficult, provided being the fact that target language possess terms that designate/denominate/denote the same notion with an equivalent degree of precision. For example:

(20) Russian and Serbian terms *билабиальный*/ *bilabijalni* and *дентальный*/ *dentalni* could be avoided as equivalents with an identical semantic content already exist in the field of Phonetics in these languages, that is *Rus. губно-губной*/ *Srb. dvousneni*, *Rus. зубно-зубной*/ *Srb. nadzubni*, *Rus. зубной*/ *Srb. zubni*.

The choice between a Russian/ Serbian or borrowed term that the translator has to make while translating is not a matter of his personal consideration, yet it is a matter of principle and must be regarded on the light of a standardized system, system to which the translator and the author must obey to. It is matter of fact that a major criterion that is taken into account when making this choice is the frequency of borrowings in the translation (including the acceptable borrowings). As a general rule, if the totality of borrowings contrast the target language lexemes and hardens the understanding/ prejudice to the receptivity of the translation, even acceptable borrowings must be avoided.

When deciding the degree of opportunity of the borrowings usage, the type of the source text plays an important role. Thus, what is considered acceptable for a specialised text meant for a narrow circle of specialists is not acceptable for a science popularization text. For example:

- (21) Russian and Serbian terms *консонантизм* and *konsonantizam* find their places in a phonetic treaty, but they are not recommended to be used in an article of language cultivation.

When talking about technical texts we must take into account that there is no common position on what they designates. The common feature of all its designations is the presence of the terms. The features that differentiate these designations are: 1) the frequency of the terms in the text, and 2) the syntactic structure of the text. Provided being that, we distinguish on one hand texts from encyclopedias, technical instructions and technical descriptions from technical manuals, and, on the other hand, science popularization books or articles. This types of texts have particular features which are stylistically determined by their genres.

Texts from encyclopedias, manuals or specialized literature are characterised by coherence and the presence of complex phrases. Texts from technical instructions often contains nominal phrases which lack predicate, enumerations. All these types of texts, including journalistic informational materials, are closed to the formal style and lack expressivity.

Compare:

- a. Injunctive textⁱⁱⁱ (scientific or literary description):

- (22) Rus. Синекдоха – один из тропов, основанный на смежности. Синекдоха – словесный прием, посредством которого целое (вообще нечто больше) выявляется через свою часть (нечто меньшее входящее в больше). Явления, приводимые в связь посредством синекдохи, образуют предметную пару, члены которой находятся в определенном количественном отношении: предмет как целое – часть того предмета, которая в данной ситуации почему-либо воспринимается как важная и потому выдвигается на первый план, представляет весь предмет. (Russkij jazyk..., 1989, 283);
Srb. Sinegdoha grč. pesnička i govorna stilska figura koja se sastoji u zamenjivanju jednog pojma drugim, pri čemu se uzima deo mesto celine. (Mićunović: 1991, 667).
[a figure of speech in which a part is made to represent the whole or vice versa]

- b. Injunctive text (users's guide which contains operating mode and directions of use):

(23)

Germ.:	Rus.:	Srb.:	[Engl.
Gebrauchsanweisung - Elektronische digitale Zeitschaltuhr	Руководство по эксплуатации – Электронный программатор	Upute za upotrebu – Elektronski digitalni sat	Usage instructions – Digital clock
1.1Einstellung der aktuellen Uhrzeit	1.1Установка текущего	1.1Podešavanje tačnog vremena	1.1Set time
1.1.1Einstenllung des Kurzzeitweckers	времени	1.1.1Podešavanje alarma	1.1.1Set alarm
1.1.2Einstellung der Lautstärke des akustischen Signals	1.1.1Будильник 1.1.2Настройка громкости	(upozoravajućeg signala)	1.1.2Set volume lock: activation and deactivation

1.2 Einstellung der Verriegelung	звучового сигнала	1.1.2Podešavanje jačine zvučnog signala	1.2.1Luminance display
1.2.1Verringerung der Leuchtstarke	1.2.Защитная блокировка:	1.2Zaključavanje (blokada sata):	1.2.2Delete electronic clock settings].
Hintergrundbeleuchtung der Anzeige	выключение и включение	uključenje i isključenje	
1.2.2Loschen der Zeiteinstellungen	1.2.1Уменьшение яркости дисплея	1.2.1Smanjen intenzitet osvetljenosti pokazivača	
	1.2.2Отмена функций	1.2.2Brisanje vremenskih regulacija	

4. Conclusion

The length of technical text phrases varies from a language to another. Thus, to English scientific text long phrases are not common, while German phrases from scientific texts are complex. Nevertheless, both in the case in which the translation is done from English and in the case in which it is done from German into Russian or Serbian, important deviations from the source text grammar structure are necessary in accordance to the norms of the target language.

In conclusion, generalizing the observations made regarding the translation of scientific texts, we can assert that exist a general tendency of subordinating the source text's particularities to the formal norms that characterize the language into which the translation is made.

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Endnotes

ⁱ The translation process of technical terms proves to be extremely complex, fact which represents an argument that stands for the conduction of further studies concerning this issue (Țaran Andreici: 2014, 65-79).

ⁱⁱ*Internal form* is the association of the phonic form of the word with the image of the denominated object which has as an effect the capacity of evocating each element by means of the other.

ⁱⁱⁱ*Injunctive text* is a variety of the informative text which represent a denotative, inexpressive message. To this category belong scientific descriptions, receipts, device description.