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PECULIARITIES OF FOREIGN SCIENTIFIC AND TECHNICAL LITERATURE TRANSLATION

Khromova V. S., Mayornikov D. I.

У статті розкрито проблему перекладу іншомовної науково-технічної літератури; проаналізовано лексичні, граматичні та стилістичні труднощі перекладу науково-технічної літератури з англійської мови на українську; описано особливості підготовки майбутніх технічних перекладачів.
Ключові слова: науково-технічна література, спеціалізована документація, технічний переклад, термін, спеціалізована лексика.

В статье раскрыта проблема перевода иноязычной научно-технической литературы; проанализированы лексические, грамматические и стилистические трудности перевода научно-технической литературы с английского языка на украинский; описаны особенности подготовки будущих технических переводчиков.
Ключевые слова: научно-техническая литература, специализированная документация, технический перевод, термин, специализированная лексика.

The article deals with the problem of foreign scientific and technical literature translation; lexical, grammatical and stylistic difficulties of translating scientific and technical literature from English into Ukrainian are analyzed; peculiarities of future technical translators' training are disclosed.
Key words: scientific and technical literature, specialized documentation, technical translation, term, specialized vocabulary.

Actuality of the research. The translators dealing with an industrial activity have to translate technical texts of highly specialized subject area. That's why peculiar training of a future specialist in such kind of activity as technical translation should begin in an early stage.

The last studies analysis. There is a good deal of researchers who have contributed to studying scientific and technical literature translation. The theory and practice of translation problems are, in general, discussed in the works of such researchers as: A. V. Fedorov, Y. I. Retsker, L. S. Barkhudarov, E. V. Breus, A. M. Phiterman, T. A. Kazakova, V. N. Komissarov, I. V. Korunets, V. N. Krupnov, L. K. Latyshev. The scientific and technical literature translation problems are touched upon in the works of the following researchers: B. M. Klimzo, L. M. Chernovatyy, V. I. Karaban, N. K. Ryabtseva, M. M. Makeeva, C. V. Nachernaya, O. V. Chuksina, O. L. Pumpyanskiy, G. G. Gurova, N. S. Nikolaeva and others.

The problems related to professional training of translators are concerned in the works of such authors as A. V. Yankovets, O. B. Pavlik, I. M. Shupta, N. M. Sobol, L. A. Tarhova, Z. F. Pidruchna, T. V. Ganicheva, L. K. Latyshev, V. I. Provotorov.

The object of the article is to disclose the notions and peculiar features of technical translation as well as analyze peculiarities of foreign scientific and technical literature translation: lexical, grammatical and stylistic ones.

General information synopsis. For students, technical translation is a way of mastering different language features, learning professional terminology and styles of rendering the information in both foreign and native language.

To provide the accuracy of the original text in general, it's not sufficient to reproduce only the language component but it's also necessary to consider all the technical features of the text. Thus, technical and special documentation translation is one of the most difficult types of activity which demands some special approach. Technical translation differs from a common one with its specific terminology and style of rendering the information. The scientific and technical literature sublanguage is distinguished with its peculiar lexical units along with grammatical and syntactical constructions.

The translation activity object of a future translator is to understand the idea of an oral or written message as well as its proper rendering by means of the native language. The higher the level of a future translator's training is, the more understandable and comprehensible the message will be. For making an adequate translation it's necessary for the future translator to be familiar with lexical, grammatical and derivation aspects. Moreover, he/she should be competent in presenting scientific information and greatly familiar with the scientific text structure and peculiarities and technique of translation. Thus, the translation features are the same as those of any other complex activity.

The goal of mastering the translation technique during studies is not turning a student into a translator but skills practicing of perceiving a foreign technical text and reading the text in the original or minimally consulting a dictionary.

Every specialist in translation activity would agree that difficulties while translating a scientific and technical literature are based on its lexical, grammatical and stylistic peculiarities, among which we can cite the ones listed below.

Lexical peculiarities.

1. There's a great deal of syntactic and parenthetical words forming logical links between separate elements in the sentence and inseparable elements of logical development (prepositions and conjunctions *upon, besides, except (for), in regard to, in accordance with, in order to, both...and, either...or, provided, providing*; adverbs *thus, alternatively, also, again*) [2, p. 13-14].

2. Peculiar terminology usage which can be neither replaced nor explained with other words. That's why the technical documentation translator, in most cases, should also have additional special qualifications in a specific technical field. For instance, the term *cycle,* besides "цикл" and "період" may be generally translated in the following way: *такт* (the interval between two signals of a clock oscillator – Computers science); *період перебування* (*lock-up cycle* – the time of staying in a prison cell – Law); *круговий процес* (Thermodynamics); *вмикати робочий цикл, циркулювати по кругу* (Engineering); *замкнений процес* (Mechanical Engineering); *періодичний процес* (polytechnical meaning); *період пульсації, кругообіг, проходити цикл розвитку* (Biology); *квант обчислення* (slang).

3. The necessity of macrocontext while rendering the terms. As an example, let's refer to the situation described by V. M. Klimzo. The translator has to translate a document saying about an appraisal procedure of welding and welders (*Pressure Welder Qualification*). Discussing the translation in a formal way, one can find in a technical dictionary that the term *pressure welding* is translated as "*зварювання тиском*". Thus we are talking about "*атестація зварників, що працюють методом зварювання з використанням тиску".* However, in this case, this variant is not correct as the document being translated is related to the pipeline welding pressure method. The right variant of translation hereby is "*атестація зварників, що виготовляють конструкції, які працюють під тиском".*

4. Shortenings and abbreviations which are difficult to understand. The researchers point out that there's no single rule on how to make up the shortenings, that's why it's almost impossible to decipher any shortening or abbreviation without the context. For example, the abbreviation *MCC* can be understood as *Master Control Console* (головний пульт управління), *Mission Control Center* (центр керування польотами) or *Motor Control Center* (станція управління двигунами) [1, p. 346-348].

5. Discrepancy of service jobs, especially governing structural units as well as positions of influence and academic degrees. It's often difficult to translate them in both native language and English, even if the name is given in a complete way: *OPS (operations)* – "Виробничий відділ", "Відділ експлуатації"; *Reg (regulatory)* in some cases it may be translated as "Служба узгодження (та/чи отримання дозволу та/чи ліцензування і сертифікації) з наглядовими органами"; *professor* – "лектор", as well as "професор-асистент" (with Master's or Bachelor's degree); *associate professor* – might be translated as "доцент", and "ад'юнкт–професор" (generally having a Master's degree); *Operations Manager* – "начальник виробничого відділу" and "виконавець виробничого відділу"; *Human Resource Manager* – "начальник відділу кадрів" or just "інспектор відділу кадрів" [1, p. 348-353].

6. Existence of realias which are used in scientific and technical literature as names of firms and establishments, models of an equipment, establishment location, etc. As a rule, realias are not translated but they are either written in the same way as in the source language or transliterated. Geographical and well-known proper names are translated in transcription of the native language [2, p. 14-15].

7. It's often necessary to translate documents of great volumes. Thanks to this reason and because of informative terms existence and specific vocabulary, technical documentation translation should be further edited.

8. Experience of reading the graphic language of schemes is highly obligatory for a scientific and technical literature translator. For instance, in drawings one can find some symbols of the following type: *ID* or *25 ID*, which is the equivalent of $d_{ВН}25$ in Ukrainian drawing meaning "*внутрішній діаметр, 25 мм*"; *LG* – the length might be marked as *0.25 Dia* x *1LG,* that is, "*Шпилька діаметром 0,25 дюйми, довжиною 1 дюйм*" [1, p. 469].

9. There's one more important peculiarity of the scientific and technical translation which concerns measuring units inversion since the measures of weight, length, height and volume greatly differ in many countries as well as in different foreign sources. For example, *Production ('000 m^3/d)* should be understood as "*Видобування (тис. $м^3$ на добу)*". As for the phrase *Total cost of the production is estimated to be US $4B+* can be translated as "*Повна вартість проекту оцінюється сумою, що перевищує 4 млрд. долл. США".* Here it's necessary to remember that "*мільярд*" for the English people is *milliard* and *billion* for Americans. [1, p. 478-479].

Grammatical peculiarities.

The grammar of the scientific and technical style is characterized by frequent usage of participle and gerund; simple sentences as well as expanded and complex ones. The general form of the sentences in scientific and technical literature is complex and compound. Consequently, there are a lot of propositions and conjunctions used along with impersonal verbs in the function of the object and adverbial modifier.

Scientific and technical literature *stylistic peculiarities* are related to presenting information in the first-person plural form and also concern clearness of expression as well as the absence of emotional, expressive and figurative phrases [2, p. 13-15].

One might encounter the above described difficulties in any type of the scientific and technical translation independently on the area of specialization: adequate translation (equal by sense and style of presenting the information including deep perception of the translation object as well as the source text creative interpretation rendering all the lexical and grammatical features); initial level translation (word-for-word translation with correct sense rendering but lexical and syntactical aspects are not really taken into consideration); literal translation (word-for-word translation where each source language lexical unit is translated correctly, but logical and syntactical links are missing which causes some sense distortion or breaking rules of the language used for translation). It goes without saying that the translator is competent when he or she is able to make an adequate translation. So this is the type of translation future translators should be trained for.

Conclusions. Thus it's indisputable that technical translation is rather a difficult and time-consuming process as there is a good deal of language aspects which should be taken into consideration. Sometimes even a highly-competent specialist encounters some difficulties while translating separate language turns of speech or scientific and technical literature terms. That's why students of technical translation department should be taught general technical translation skills during their training.

Further research prospects. In future it is planed to pay considerable attention to the problem of skills acquisition concerning scientific and technical literature translation in the texts of civil engineering, mining and metallurgy fields.

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