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TECHNICAL TERMINOLOGY TRANSLATION IN ENGINEERING CONTEXT

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The paper considers special aspects of technical translation and peculiarities of engineering terminology interpretation in English-Russian language pair correlation. Problems of adequate translation of general and specialized words, vector of compound lexical elements in engineering context, text production and inversion in the English and Russian languages, transformations in technical translation with compression and addition techniques are analysed. Preference of building English engineering terms with common words, mainly the "noun-noun" group is highlighted.

Keywords: technical terminology, translation, language compression, lexical additions, inversion, text production, engineering

ПЕРЕВОД ТЕХНИЧЕСКОЙ ТЕРМИНОЛОГИИ В ИНЖЕНЕРНОМ КОНТЕКСТЕ

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В статье рассматриваются специфика технического перевода и особенности интерпретации инженерной терминологии на примере соотношения языковой пары «английский – русский». Анализируются проблематика адекватного перевода базовой и специальной лексики, вектор сложных лексических единиц в инженерном контексте, текстообразование и инверсия в английском и русском языках, трансформации в техническом переводе с использованием приёмов компрессии и добавления. Отмечается приоритетный характер образования английской инженерной терминологии на основе элементов общеупотребительной лексики, главным образом, группы «существительное – существительное».

Ключевые слова: техническая терминология, перевод, языковая компрессия, лексические добавления, инверсия, текстообразование, инженерия

Traditionally technical translation has been regarded as a vocational, practical and at times rather basic type of translation. However, it is a much more promising avenue of theoretical and practical investigation than many can suspect. Technical translation, its features, peculiarities and strategies, problems and solutions, approaches and ideas are reflected in Russian and foreign literature with cognitive psychology (J. Byrne, E.A. Gutt), linguistic prospect (J.C. Catford, G. Cesumskaitė, P. Fawcett, J. Kereviciene, M.L. Larson, M. Raesi, H. Vahid Dastjerdi), teaching (B. Hatim), quality assessment (J. House, S. Lauscher), technical writing (C. Julian, K. Van Laan), translation aspect (D. Bellos, H. Gerzymisch-Arbogast, G. Kingscott, W. Koller; N.V. Arzhantseva, T.K. Ivanova, T.V. Parshina, M.G. Rubtsova, A.O. Ushakova) perspectives and emphases.

To date, the range of technical texts facing translators has grown significantly: reports, manuals, guides, specifications, patents, monographs, theses, journal articles, white papers, etc. There is an urgent need for a translator to understand the source text and render it into a comprehensible target language transmitting data, messages, facts, special subject knowledge with conscious reflection and dimension of specialized terminology and general terms, on the one hand. Moreover, one needs to incorporate knowledge of technical communication and usability testing, scrutinizing and analyzing text production stages, processing different strategies and modern realities of translation.

In the present work English to Russian technical translation in engineering context was chosen as an analytical focus primarily due to its specific nature, perspectives and critical influence on understanding English-Russian language pair interaction.

Vocabulary is one of the most significant linguistic feature, a device of the technical, scientific texts [9, p. 118]. It gives the text the “fuel” necessary for transferring the source language information into the target language. Vocabulary requires careful assessing in view of the translation peculiarities from English into Russian, problems and solutions.

Terminology is conceived as easily learned/stored in memory in order to facilitate later recall in actual use-situations, and as a stable objective reality that exists in some systematic way in language [10, p. 128]. In engineering field, science and technology there is a great number of uniform terms on the particular language pair (e.g., English-Russian) with less trouble locating appropriate specialized words in the target language due to the common origins in Latin and Greek or a predominance of English in creating new terms and their proliferation in many languages, for example, adapter, antenna, bolt, bulldozer, cement, cylinder, extruder, filter, galvanometer, generator, metal, motor, nickel, radio signal, regulator, etc. Non-specialized and general terms are more problematic in technical translating. They require systematic understanding of a subject matter and words management evaluating appropriateness and correctness in technical and/or sub-technical contexts.

Quite often non-specialized words create a specific term in a technical area. Compound nouns made up of two or more different nouns working together as a single unit are more preferable in engineering. Their meaning may be rather different from the meaning of the components in isolation and the translation of such phrases is firstly confusing. With the words “squirrel” and “cage” one can build a technical term “squirrel cage” (“shorted”), for example, a “squirrel cage induction motor” or a “squirrel cage rotor”. “Bus” and “bar” are used in forming “a conductor or an assembly of conductors for collecting electric currents and distributing them to outgoing feeders”, that is a technical term “bus bar” [8]. “Pancake” and “winding” are joined together in a noun phrase “pancake winding”. The first word does not function as “a thin, flat and round cake”. It classifies the type of transformer windings, i.e., “disk” type. Specialized “Christmas tree” stands for an oil-well control device having an assembly of fittings at the top of the well. Uncommon for engineering “demon” is an essential element in a term “demon speed” meaning “very high speed”. The nouns “glove” and “box” make a phrase “glove box” quite specific for energy engineering. In Russian the word “box” is translated as a “camera” for working with radioactive substances [4].

The most noticeable aspect of English terminology is highly contextualized word representation and its polysemous nature. Word vectors are sensitive to the context in which they appear [6, p. 55]. D. Bellos compared the word for translation with a two-headed beast [1, p. 18]. Thus, in transport engineering “jack” defines a device for lifting a car off the ground. In electrical engineering it is applied for a socket. Moreover, “jack” is well known as a pneumatic drill/hammer in boring industry.

The second crucial part of the present work is analyzing English and Russian text production, text/sentence structure in different languages, features, syntactic properties of words, possible transformations in technical translation.

At first, English to Russian translators need to produce texts which are identical to those made by technical writers working in the target language [3, p. 4]. They should have enough subject knowledge in electrical / thermal / mechanical / transport/civil engineering, radio electronics, physics or architecture and design, for example; skills of using stylistic and expressive language to achieve the desired effects.

In technical (engineering) context translation can be effectively produced by some modification transforming (editing, rearranging, removing and adding) information, the source text into a form that is better understood by the audience according to the norm of the target language. So at times in adequate translation of engineering texts compression strategy (shortening the text and its elements without destroying the meaning) is required. It generally occurs when the segment contains an unnecessary detail that is difficult to translate concisely [7, p. 72]. For example, in the sentence “A *picoammeter*, or *pico ammeter*, is used in the case of low and very low level direct current measurements and when a higher sensitivity is required” two ways of English writing a measuring instrument are stressed. However, in Russian there is only one equivalent of writing and consequently translating this very type of ammeters. Thus, technical translation of the sentence in Russian is filtered through the omission technique. Typically, some English pronouns, conjunctions, prepositions (used with the verbals (non-finite verb forms) and nouns) more often need omission in the Russian language as they are not grammatically required for the identification and due to prevalent English analytical and Russian synthetic language forms, e.g., “If the generator does not have *any* reserve offers, i.e., it only has energy offers, then the capacity constraint is not created because it is not required... when there are only energy offers then the sum of the energy offers sets the maximum that can be requested from the generator” [2, p. 117].

In the target language English pronoun “any” may not be explained. There is no demand to translate this determiner in the sentence from grammatical and lexical views, considering particular kind of relations within the parts of the sentence in Russian. Translation without “any” will be sufficiently complete, clear and consistent preserving the structural adequacy of the target text.

The second example is “This surface layer can then be hardened *by heating* the steel and then quenching it in water” [5]. Preposition “by” from the source sentence is ignored in the Russian language. The phrase (preposition and gerund) “by heating” is translated as a noun in its synthetic form shown by special word ending according to the case (one of the sixth that nouns have in the Russian language with specific ending in each).

Inverted word order in English technical texts should be underlined in Russian translation. Changing strict and rather inflexible English declarative sentence structure is quite expressive and informative for translators. Used for special, extra emphasis it needs some addition and/or comments, e.g., the sentence with reversed order “Little did they know about the tensile deformation behavior of laser-fused AlSi10Mg and Ti6Al4V five years ago”. Using inversion, the writer highlights a negative adverb “little”. In Russian particular importance or attention is given by words. So it is better to translate “little” with adding “so” to it.

Technical translation also requires conscious understanding of producing technical documentation in a variety of subject areas and engineering fields. Descriptive and explanatory, persuasive or evaluative, procedural, investigative documents from idea to idea, sentence to sentence, paragraph to paragraph should provide maximum usability, acceptability and effectiveness from the target audience’s point of view. Proximity, similarity, continuity, generalizability, symmetry, closure, predictability, consistency help translators organize the scientific papers, technical specifications, repair and maintenance manuals, programming guides and interpret different engineering objects.

So in English to Russian technical translation mastering more systematic view for diagnosing engineering terminology and lexical issues regarding widely used non-specialized and general words in English terms, text production techniques and language modifications should be intensified. Meaning is stressed. Though words are only instruments they dictate the strategy choice for accurate translating, provide constructive integrity in technical communication.

References

1. Bellos D. Is that a fish in your ear? Translation and the meaning of everything. London: Penguin Books, 2011. 390 p.
2. Bullen D. Electricity Markets and the Simplex Algorithm. Electricity Market tutorial. Simplex Nodal, 2020. 317 p. Available at: <https://www.simplexnodal.com/tutorial> (accessed November 10, 2020).
3. Byrne J. Technical translation: usability strategies for translating technical documentation. Springer: Dordrecht, 2006. 295 p.
4. Cambridge online dictionary, available at: <https://dictionary.cambridge.org/> (accessed November 15, 2020).
5. Collins online dictionary. Available at: <https://www.collinsdictionary.com> (accessed November 09, 2020).
6. Ethayarajh K. How contextual are contextualized word representations? Comparing the geometry of BERT, ELMo, and GPT-2 embeddings // Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (November 3–7, 2019). Hong Kong, 2019, pp. 55–65.
7. Kereviciene J., Cesumskaite G. Grammatical compression in film translation // Vertimo Studijos, 2011, No 4, pp. 71–81.
8. Multilingual online dictionary, available at: <https://www.merriam-webster.com> (accessed October 23, 2020).
9. Raeisi M., Raeisi M., Vahid H. Dastjerdi Strategies used in the translation of scientific texts to fill the lexical gap // Research Result Theoretical and Applied Linguistics, 2019, No 5 (3), pp. 116–123.
10. Robinson D. Becoming a translator: an introduction to the theory and practice of translation. Routledge: London and New York, 2003. 301 p.