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THE DEMAND FOR SCIENTIFIC LANGUAGE TRANSLATION IN THE MODERN WORLD

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Today, as the science and technology industry is ever-improving, many new English words are used in scientific ideas and knowledge, however, these new terms are a major challenge for science students and scientists to understand; and these issues are currently being faced in the science, technology across all languages.

The propagation of knowledge and innovations is crucial for efficient progress in science. Scientific translation contributes to this process by making sure that speakers of all languages have reliable access to new information.

The translation of technical documents is considered one of the most complex types of translation and in the recent years it has been highly in demand. The high demand for localization of technical documents and instruction manuals is due to the increasing integration of various countries into the world economy and the expansion of foreign trade relations of multinational companies. In this age of globalization, businesses cannot conduct their commercial operations in a single language. Hence, they often need the services of a translation agency to translate their documents into various international and local languages [1; 57].

The types of technical documents which are most frequently translated into local languages are the following: instructions manual for the use of technical and electronic equipment intended for everyday use; technical documents (instruction manuals for industrial and commercial plants); technical or scientific literature; GOST (State standard of approval), (State building standards), International Standards (DIN, ISO, GMP, etc.); specifications, test cards, certificates; drawings and wiring diagrams etc. Such documents and manuals are needed for the smooth functioning of a business. Only an agency which has the required knowledge and experience will be able to accurately translate such documents.

The agencies which deal with translation of technical documents and instruction manuals have a great responsibility. Even the slightest of error or inaccuracy cannot be excused as they can lead to the inappropriate use of technical equipment. The translation of technical documents and instruction manuals not only requires perfect vocabulary and knowledge of various terminologies, it also requires the complete understanding of the process and of the stages described in the original text. This is why the translator should have specific technical training/background besides having a strong grasp of the language into which the documents have to be translated.

Every area of translation presents its own difficulties, and the scientific-technical translation field is no exception. Translation may involve a whole range of difficulties and thus, it can be a very challenging activity. Every language is different from variances in syntax, grammar rules, and grammatical structure.

The structural and lexical differences between languages could be one the major problem in translation, especially, translating idioms and collocations from one language to another. Another one is the problem of grammar: every language has grammatical rules, which every translator and interpreters should clearly understand in producing an accurate scientific translation. Surely, if a translator does not have sufficient knowledge about the source and the target language, everything in the translation product can be an embarrassing disaster.

There are certain techniques in order to eliminate scientific and technical translation problems. Following these techniques doesn't entirely mean that the translation product would be error free. There may be some techniques on how to make the scientific translation more effective and easy [2; 35]. These include back translation, consultation with other people and interviews or questionnaires or any kind of test that will eventually help to solve translation problems.

When it comes to translation it has always been sound advice that the translation product should be accurate, which includes the adequacy and equivalence of the translation. In addition, most linguists believe that there are two types of equivalence: formal and dynamic. Formal equivalence focuses on the form as well as the content of the message, whereas dynamic equivalence focuses on producing an equivalent effect on the target language. The concept of the translation equivalent effect may however be rather vague.

Many translators perform translation using different techniques which they would think will suit to the translation type and the complexity of the area. However, the main point here is that the translation process has to find the effective ways in order to obtain the most accurate translation possible for clients. Expertise in the specialized field and linguistic proficiency are the most essential factors needed in order to produce a high-quality translation product. Without it, translation, including communication and understanding would be vague.

Translation of scientific texts is not just simply converting written text documents literally into the target language. This type of translation is not like the process of literary translation, which involves elaboration of creative language, whereas scientific and technical translation should focus on unequivocal terms and vocabulary in both the source text and in the target language. It requires a direct and simple form of terms as well.

The genre of scientific works is mostly characteristic of the written form of language (scientific articles, monographs or textbooks), but it may also be found in its oral form (in scientific reports, lectures, discussions at conferences, etc); in the latter case this style has some features of colloquial speech [3; 81].

The language of science is governed by the aim of the functional style of scientific prose, which is to prove a hypothesis, to create new concepts, to disclose the internal laws of existence, development, relations between different

phenomena, etc. The language means used, therefore, tend to be objective, precise, unemotional, and devoid of any individuality; there is a striving for the most generalized form of expression.

The first and most noticeable feature of this style is the logical sequence of utterances with clear indication of their interrelations and interdependence, that is why in no other functional style there is such a developed and varied system of connectives as in scientific prose. The most frequently words used in scientific text are functional words; conjunctions and prepositions.

The first 100 most frequent words of this style comprise the following units:

a) prepositions: of, to, in, for, with, on, at, by, from, out, about, down;

b) prepositional phrases: in terms of; in view of, in spite of, in common with, on behalf of, as a result of; by means of, on the ground of, in case of;

c) conjunctional phrases: in order that, in case that, in spite of the fact that, on the ground that, for fear that;

d) pronouns: one, it, we, they;

e) notional words: people, time, two, like, man, made, years [4; 100-101].

As scientific text is restricted to formal situations and, consequently, to formal style, it employs a special vocabulary which consists of two main groups: words associated with professional communication and a less exclusive group of so-called learned words. Here one can find numerous words that are used in scientific text and can be identified by their dry, matter-of-fact flavour, for example, comprise, compile, experimental, heterogeneous, homogeneous, conclusive, divergent, etc. Another group of learned word comprises mostly polysyllabic words drawn from the Romance languages and, though fully adapted to the English phonetic system, some of them continue to sound singularly foreign. Their very sound seems to create complex associations: deleterious, emollient, incommodious, meditation, illusionary.

Several lexical categories can be identified within the language of scientific instruction and narrative:

Verbs of exposition: ascertain, assume, compare, construct, describe, determine, estimate, examine, explain, label, plot, record, test, verify.

Verbs of warning and advising: avoid, check, ensure, notice, prevent, remember, take care; also several negative items: not drop, not spill.

Verbs of manipulation: adjust, align, assemble, begin, boil, clamp, connect, cover, decrease, dilute, extract, fill, immerse, mix, prepare, release, rotate, switch on, take, weigh.

Adjectival modifiers and their related adverbs: careful (y), clockwise, continuous (ly), final (ly), gradual (ly), moderate (ly), periodic (ally), secure (ly), subsequent (ly), vertical (ly).

The general vocabulary employed in scientific text bears its direct referential meaning, that is, words used in scientific text will always tend to be used in their primary logical meaning. Hardly a single word will be found here which is used in more than one meaning. Nor will there be any words with contextual meaning. Even the possibility of ambiguity is avoided.

Scientific translation requires expertise and skills in scientific fields. Translators should have a good depth in reading and knowledge of translating scientific texts. One of the challenges that most translator may encounter is to ensure that there is coherence and compatible usage of scientific terms in the entire translated document.

It is also possible that linguists will be confused in the choice of scientific terms in the translation process. Languages are all unique and thus, their terms and vocabulary are different. In languages, there are many terms that have similar meanings. However, in translation, sometimes some of the terms used have no direct and specific meanings in the target language. Translators nonetheless have to ensure that he or she uses proper and accurate terms in the entire translation.

The greatest difficulty for understanding and translation is represented by the terms consisting not of one word, but from group of words. Disclosure of their meanings requires (demands) particular sequence of operations and knowledge of a method of translation of separate components. It is possible to recommend to start translation from the last word. Then under the order on the right to the left to translate words, facing to it, taking into account the semantic relations between the components.

E. g. If we translate the term "liquid-propellant power plant" - first of all it should be translated "power plant" - силовая установка, and then “propellant" - топливо, and the last word is “liquid" - жидкий. And we can easily translate the whole word combination:"Силовая установка на жидком топливе"

It is necessary to take into account that many terms are polysemantic.

E. g. stage - in Radiotechnics has several meanings: каскад; фаза, стадия and in the rocket engineering - ступень ракеты. In technical texts there are words (problem, information) which create a lexical range of terms: menu (возможность выбора, набор, перечень), onus (задача, долг), strength (достоинство, преимущество), to see (реагировать, фиксировать), to drive (привести к срабатыванию). The peculiarity of these words consists of the difficulty determining their meanings in the original text, and matching of translation equivalents in the target language. Some of these words are stylistically colored ones: mushrooming (быстрое развитие, быстрое изменение), bugaboo (проблема, трудность), beauty (достоинство, преимущество), workhorse (основной, главный, ведущий), wisdom (целесообразность, основание на точном расчете). Any stylistically colored units of original text have to be transformed into neutral ones which convey their information essence [5; 89].

The scientific translator must possess good research and reading skills. If a certain terminology requires further and in-depth understanding, the translator should ensure that the provided translated term or explanation will be understood by the readers or audience.

To sum up, the success of scientific translation depends on the knowledge, skills and discipline of the translator. Since scientific translation has requirements for the effectiveness of the entire text conversion, clients should also make lists for

the requirements needed in hiring translator in order to obtain professional and accurate translation.

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