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## Engineering technical translation

**Introduction:** Nowadays, the problem of breaking down the language barrier in professional fields has become a matter of priority for the engineers of the future. This problem is not an exceptional one for these future engineers, who are well versed in the “safety in the technosphere” directive. It is very important that they have a genuine understanding of the different linguistic aspects in technical fields in order to translate from their mother tongue to a foreign language, and vice versa.

Therefore, the real issue in this topic will be the establishment of correct interlingual terminology for technical terms; and a clear understanding of said terminology by experts in both national and international standards.

The aim of this work is to review the problems with technical translation the students on the “safety in the technosphere” course have suffered.

**Methods.** Despite the fact that no-one now considers there to be a lack of technical literature in translation, domestic scientific and technical literature is suffering hard times. The reason behind this is the low quality of this already sufficiently expensive service. It is important to note that translation within technical fields has become a race to make money. As a result, the sheer volume of translations has come to harm their quality. Further problems arise as a result of this.

Firstly, while there are a huge number of specialists in technical fields, there are far fewer professional translators in these fields.

While one could call upon additional professional translators, therein lies the second problem: in order to produce a sufficiently accurate translation, it is necessary to have some specialist technical knowledge over and above any linguistic knowledge, so it becomes a question of combining knowledge of the foreign language with technical knowledge itself.

To begin with, the authors provided as an example the well known word “crazing”. The most widespread translation of this word would be ‘to go out of one’s mind’. But not many people know that this word is widely used in technical fields, and not to refer to a mad scientist or engineer. Rather, in this context it refers to the formation of cracks:

1. Thermal crazing is the formation of a mesh of thermal cracks;
2. Gas crazing is the formation of cracks by drying something with a gas flame.

The second example is “cloud-point”. The individual words here are common knowledge, but when they are put together they form the expression “turbidity point”.

As a third example, the authors chose the name of the reference book necessary for the study of “The Physical Chemistry of the Technosphere”. It is called “Quantities, Units and Symbols in physical chemistry”. However, when translated word-for word into Russian the meanings of the separate words can be ambiguous:

- 1) ‘Quantity’ could refer to an amount or measure; mathematical volume; size; or magnitude;
- 2) ‘Unit’ could refer to a single thing or person; or a mechanical part or integrated assembly of parts.

Of course, with the help of a dictionary one could simply choose the most suitable term with which to translate something. However, someone unqualified in technical fields could choose the completely wrong word. And any inaccuracies in translation are impermissible in this field, as even an incorrect interpretation of the title of a handbook can lead to serious computation errors, which can in turn lead to disruption of important projects, developments, etc.

But it can be the case that a necessary word is not to be found in any dictionary, in which case it may become necessary to look through methodological textbooks, use electronic resources or

consult experts in order to find an equivalent term. As a result, at times it becomes clear that adequate Russian terminology in this field either doesn't exist or is still in the process of being thought up. In this case, any success depends on the knowledge, intellect and readings of whichever expert that did the translation; as well as on their understanding of the communicative and professional particularities of the spoken word and of problems with translation. This is because any decision a translator takes will be based on his knowledge and skills, acquired during his studies.

To find the best solution to this problem, one must choose one's terminology based on the presence and usage of the word in the original language; as well as clarify to what extent the terminological systems for technical fields are identical or share a similar system of understanding.

The approach taken towards a comparison between languages plays a pivotal role in the achievement of inter-language conformity, the goal of which is the discovery of identifying and differentiating markers in morphology, phonology, functionality and semantics of the language in question; the study of the linguistic particularities and the shared common terminology; and an establishment of the similarities and differences between the two language systems, based on a comparison of terminology in both languages, in various forms and in different areas of the languages.

In Tomsk Polytechnic University, the problem of decision-making is covered by the course 'Foreign Languages in a Professional Environment'. The class is available for third year bachelor students and above. In the class, future engineers fill up their personal vocabulary with the up-to-date professional terminology.

Also in Tomsk Polytechnic University, joint courses are run – that is to say, seminars taken along with foreign students with the language in question as a mother tongue. These seminars provide an irreplaceable experience of professional relationships, and of expanding stored vocabulary, all within the university. Thanks to this, upon completion of the course, the graduate will have a deep knowledge of a foreign language, as well as an extensive vocabulary necessary for unhindered communication in industrial fields.

**Conclusion:** Therefore, it is necessary for future engineers to have a continuous education and development in their translation in technical fields, in order to factor into account all the different meanings words can have. This is because new terms will arise at a later date due to future industrial development.

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