TRANSLATIONOF OIL AND GAS INDUSTRY LEXIS

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Abstract —This work reveals a correlation of factors determining the adequacy of oil and gas lexis translation from English into Russian. They govern decision-making processes when translators choose between the two basic strategies (domestication and foreignization) limited by discursive practices and cognitive structures of source texts. When used within a specific type of discourse, specialized lexical units obtain influential characteristics affecting the choice of translation strategies, but in many cases these discursive parameters are not taken into account, as foreignization strategy predominates in specialized vocabulary translation. However, domestication strategy appears to be more effective in particular cases. We argue that discursive and cognitive analysis resulting in conscious strategy choice will allow translators to make adequate decisions about oil and gas lexis translation methods, as they also correspond to translation strategies: the strategy of domestication imposes semantic and functional methods of translation. Consequently, the study presents a translation algorithm for specialized lexis in oil and gas source texts to bolster the decision-making effectiveness and to increase translation adequacy in target tests. The algorithm is based on discourse-cognitive approach drawing the connections between alternative discursive parameters representing different types of knowledge by means of oil and gas lexical units and translation strategies with correlating translation techniques.

Keywords — iction, online workshop, foundation, depiction, nostalgically, evocative details, common folk, triannually.

1. INTRODUCTION

The research focuses on lexical aspects of specialised texts translation. Living in the world of multilingual communication, experts often face problems of specialized lexis translation and systematization of industry-specific lexical units. The fact that the European Union has the annual budget of one billion Euro to optimize communication in education, science, and technology proves this issue to be urgent. The biggest part of this allocation funds terminology management projects to control this problematic and controversial sphere of speech activity.

2. MAIN PART

On the one hand, terminology has a long tradition of studying that can be expressed with the words of Antoine Laurent Lavoisier, a French naturalist of the 18th century who wrote, "It is impossible to separate neither science from terminology nor terminology from science because every science has its three essential elements: a number of facts that constitute its scientific content, the representations or notions of these facts, and the terms expressing these notions".

On the other hand, the main characteristic of terms, i.e. their relation to scientific concepts and technical objects, is a problematic field for terminology management, since the development of these concepts, as well as the nomination of technological innovations are uncontrollable in most cases. Terminology starts chaotically, so terms often are not systematically arranged even within one language and one science. Thus, the concept "term" comes from the Latin root "to limit". In other words, it is necessary to take control of something that is almost impossible to control.

The EU efforts to implement the policy of multilingualism, aimed both at efficiency improvement of cross-language communication and at preservation of national and cultural specifics of languages, led to creation of various management tools applied to terminological sphere. These tools allow scholars to address a number of practical issues, for example, to permit or not permit the use of a term, variations of the same term, or variations of the same term as different parts of speech. Consequently, the most important aspects of terms creation are fixed in industry-specific standards, glossaries, patents and specifications, compiled by both national and international teams of experts. These sources have become the foundation to create terminological databases. For example, in 1975, the EU experts created a terminology database known as Eurodicautom. Its aim was to save time and efforts made by translators and other staff of the European Commission. In 2007, Eurodicautom was replaced with another tool called IATE (Inter-Active Terminology for Europe) that is a multilingual database of terms used in documents of the European Union. The purpose of the project, launched in 1999, was to give access to all terminology resources of the EU providing information and supporting the standards among the EU bodies. The International Organization for Standardization (ISO) has also created conceptual and terminological database, using original standards and their official translations.

However, it is not always possible to apply all these achievements of terminology management to translation of specialized texts from English into Russian. Firstly, most terminology platforms and databases are not free, so it increases the costs of translation

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services. In addition, highly demanded technical translation in strategically important sectors of Russian economy, such as oil and gas industry, causes a rise in terminological variability. Numerous unconfirmed technical translations are available on the Internet; therefore, the analysis of terminological meaning is time consuming, but it takes much more time to choose between alternative techniques resulting in translation variants. Industry-specific translators need to be careful in their choices in order to maintain the basic feature of specialized lexis that is semantic and functional unambiguity.

For the last decades, this mission has become urgent, as the prevailing strategy of foreignization prevents translators from applying meaning-based translation techniques. This means that, when translating specialized lexis, the major methods of translation are transliteration, transcription, loan translation, or even preservation of original forms of lexical units. Total rejection of domestication strategy often leads to negative consequences such as breaking of customary usage rules, semantic deformation of original meaning, terminological doublets preventing addressees from perceiving the information. These communicative fallouts ultimately result in a decrease of effectiveness in cross-language interaction. The case described by Evgeny Bartov in his blog for industry-specific translators illustrates this problem. A Russian defence plant has contacted his company to get a presentation for a foreign exhibition translated from Russian into English. To complete this task, the company hired an American translator. There were two specialized lexical units in the text of this presentation: загоризонтный (nadgorizontnyi radar). The translator used loan translation to transfer these terms into English – beyond-the-horizon radar station and over-the-horizon radar station, respectively. Translation editors disapproved of using the foreignization strategy and appealed to Pentagon documents. The analysis showed that the first unit represents the kind of radars that are installed along the coast of the United States. They spread a wave on water surface; therefore, such radars are called high frequency surface wave radar stations.

As for the second unit, the American air defence system does not have any analogue radars. Therefore, American military experts called them Daryal-type radars, nominating the Russian city, where this equipment was first installed. This case proves that foreignization strategy does not always provide adequate translation. For these lexical units, a method of functional replacement corresponding to domestication strategy appears to be more effective. It corresponds to domestic terms making American experts refer to appropriate types of radars. As for the method of loan translation within foreignization strategy, proposed by the American translator, it would have led to difficulties in perception of the presentation content. Thus, it appears to be a less effective method of translation in this case. Consequently, the choice of translation methods determined by two translation strategies needs to be explained to achieve the adequacy of specialized lexis translation and to optimize industry-specific translation services. into another. Concepts that may be considered as well-known and easy to understand sometimes appear to be more complex than what they seem to be. It proves that translators and terminologists would highly benefit from a more regular use of all the information. We argue that the integration of discourse-cognitive approach with the opposition of notions and terms representing different types of knowledge will contribute to establishing the effective holistic terminology translation analysis.

Within the Discourse of Differences, language signs represent concepts. They have poor content and almost unlimited scope, and they represent phenomenological knowledge. This leads to individual and sometimes opposing interpretations. The conflicting positions of discourse arise from different perception and understanding of concepts fueled by personal experience.

Within the Discourse of Consensus, language signs represent notions. Unlike concepts, they have limited scope and content, so the empirical part of interpretation is not of primary importance. In this discursive practice, unstable characteristics of concepts become more sustainable, and concepts turn into notions.

The language signs, functioning in the Discourse of Expert Community, are terms. Only a limited group of experts are familiar with them. With the narrowest scope and specific contents, terms need to be monosemantic, because representatives of any expert community are interested in it.

Considering all the above, translation of terminological vocabulary should be based on its cognitive and discursive characteristics. First, it is necessary to identify a discursive practice to which translated lexical units belong. It is typical of specialized texts to belong to Discourse of Consensus and Discourse of Expert Community. In real texts, these discourse practices blend, and up-leveling text specialization corresponds to a higher level of pansophy. However, this does not mean that all lexical units are terms if they function in Discourse of Consensus or Discourse of Expert Community. Therefore, the next step is to determine what type of knowledge a lexical unit represents: a concept, a notion or a term. This will influence the choice of translation methodology, aimed at (1) clarifying the personal meaning and transferring individual experience (for a concept), (2) identifying and transferring the entire scope and content (for a notion), (3) selecting a matching terminological unit (for a term). The choice of translation strategies (foreignization or domestication) results from cognitive and discursive characteristics described in the previous paragraphs.

Thus, Discourse of Expert Community activates highly specialized terms representing universal knowledge, so it is more efficient to apply foreignization strategy for their translation. This strategy is implemented through translation methods preserving formal characteristics of original lexis. It represents current expertise of a specific field employing terms that are scientific universals, so they are comprehensible to experts regardless of language systems they use. Such universals include, for example, Latin terms in medicine, acronyms of computer sphere, symbols of physical quantities and chemical elements, symbols denoting patented technical innovations, inventions and brands that have become so popular that they went beyond their original culture. The implementation of this strategy involves methods of transcription, transliteration, loan translation and form preservation of original

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lexical units.Discourse of Consensus demonstrates alternative parameters of specialized lexis, as in this case experts have not reached the universal level of knowledge representation. Consequently, they operate not with terms, but with notions. Despite being limited in their scope and content; notions can have various nominations in different languages. For example, in Russian, the nominations for different kinds of radars indicate their position relative to the horizon, while their English nominations indicate location, function, and origin. As the missile defence systems of Russia and the USA are competing industries, their experts do not have a high degree of coordination and consensus. Accordingly, there is little agreement in nominating similar devices. In this case, the strategy of domestication is more preferable, as it applies alternative techniques preserving meanings and functions of transferred units, such as functional replacement, specification, generalization, explication and differentiation of meanings.

The language materials used for the research includes: (1) Source Text that is a patent for the invention of the method of partially upgrading heavy oil at well-site published in 2017 in the English language; (2) Target Text that is an authentic translation of this document published by the Eurasian Patent Office. The original text is characterized by a high degree of specialization within oil and gas industry, as it describes a specific technological process innovative for oil and gas production. It is a topical issue for Russian conditions of HC extraction and transportation. The translation performed by professional industry-specific translators is the official description of this invention in the Russian language. In the first phase of the research, we performed comparative analysis of ST and TT specialized lexis in order to identify and describe its translation methods.

Then we divided these methods into two groups: (1) methods conserving formal characteristics of specialized vocabulary, and (2) methods transferring semantic and functional features. This allowed us to detect the cases of domestication and foreignization strategies. Table 1 selectively shows the results of the first phase:

Table 1. Differentiation of translation methods within foreignization and domestication strategies Foreignization Domestication 1) the preservation of original form an API gravity of 20 2) transliteration cracking 3) loan translation liquid phase 4) combined methods to have an S-value (the preservation of original form + loan translation) 1) explication a pressure of 0 to 0.1 MPaG 2) functional replacement1 3) generalization2 soaking1 drum2

4) specification

API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method", and it is recommended to be used in Russia.

Another example of implementing foreignization strategy due to cognitive and discursive characteristics of ST units is transliteration technique transferring the term "cracking". The matching TT term (крекинг) indicates high temperature processing of oil and its fractions aimed at obtaining the products of lower molecular weight. It historically derives from Discourse of Expert Community because the first industrial complex for continuous thermal cracking of oil was created and patented by a Russian engineer V.G. Shukhov and his assistant S. P. Gavrilov in 1891 (patent of the Russian Empire No. 12926, issued on November 27, 1891). The scientific and engineering solutions of V. G. Shukhov were repeated by U. Barton who constructed the first industrial plants in the United States in 1915-1918. Therefore, despite the fact that this lexical unit comes from English "cracking" as the technology makes oil molecules crack, within Discourse of Expert Community at the international level it comes from Russian specialized literature. The first domestic industrial complex for cracking was built by V. G. Shukhov in 1934; the plant called "COBETCKИЙКРЕКИНГ" was situated in Baku.

The analysis of domestication strategy implementation shows that ST specialized lexis functions in Discourse of Consensus and represents notions. This becomes clearly seen through the varying degree of inconsistency in the use of these terminological units demonstrated by experts from different language communities. The structures of knowledge assigned to them have not yet reached a universal level, so their semantics is not limited as it is typical of terms in Discourse of Expert Community. In this regard, there is a need for semantic transformations performed by translators.For example, ST combination "a pressure of 0 to 0.1 MPaG" has a component (G) transferred by explication method, e.g.: давлениют 0 до 0.1 МПа (манометрических). G denotes a measurement unit for pressure and stands for "gauge". This term indicates a certain type and method of pressure measurement, when it is

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necessary to calculate the positive difference between the pressure in the pipe measured with a specific device (gauge) and the atmospheric pressure. The technical literature published in Russian refers to this type of pressure using the expression "избыточноедавление". In English reference literature gauge is a polysemantic lexical unit functioning in many scientific fields. If we limit the scope of its use and take into account only measurements, it corresponds to the combination "measuring device", and it can measure not only pressure. The Russian word "манометр" corresponds to several English expressions: manometer; airgauge; steam gauge; monoscope. Such variability in linguistic representations of the concept suggests that the structure of knowledge is still evolving and require clarity and coherence that is achieved by means of explication. It is reasonable to use it in the description of the technology presented in the patent, as it is important to point out the specific kind of pressure.

3. CONCLUSION

Conclusion.Based on the foregoing, we propose an algorithm for differentiating translation strategies of specialized lexical units functioning in oil and gas industry:

Step1. Determine cognitive and discursive characteristics of ST specified lexical units (notions for Discourse of Consensus or terms for Discourse of Expert Community). To determine this, it is necessary to specify:

• How narrow is the field of knowledge specialization, represented by ST lexical unit?

• How consistent is the expertise about a phenomenon represented by ST lexical unit?

• How consistent are the ways of representation of this knowledge in the framework of the universal scientific discourse?

• How limited is the scope and content of a notion, represented by a lexical unit in ST and TT?

• How universal is the specialized literature, which contains the matching ST and TT lexical unit?

When detecting a high degree of characteristics described in Step 1, a lexical unit should be attributed to Discourse of Expert Community, so foreignization strategy is to be used.

When detecting a low degree of characteristics described in Step 1 a unit should be attributed to Discourse of Consensus, domestication strategy is to be used.

Step 3. Choose translation methods correlating the strategies.

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