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POLYSEMY OF ENGLISH LEXICAL UNITS AS A STONE OF TRANSLATING SCIENTIFIC AND TECHNICAL TERMINOLOGY

БАГАТОЗНАЧНІСТЬ АНГЛІЙСЬКИХ ЛЕКСИЧНИХ ОДИНИЦЬ ЯК КАМІНЬ ПЕРЕКЛАДУ НАУКОВО-ТЕХНІЧНОЇ ТЕРМІНОЛОГІЇ

Опир М.В.,

orcid.org/0000-0002-0233-7227

*Senior Lecturer at the Department of Foreign Languages
Lviv National Environmental University*

Dobrovolska S.R.,

orcid.org/0000-0002-2389-4890

*Candidate of Economic Sciences,
Associate Professor at the Department of Foreign Languages
Lviv National Environmental University*

Panchyshyn S.B.,

orcid.org/0000-0001-9444-4232

*Senior Lecturer at the Department of Foreign Language
Lviv National Environmental University*

The aspects of terminology are currently among the most relevant issues of translation theory and linguistics. Terminological units belong to the layer of vocabulary, which on one hand, takes an important position in the general national vocabulary of any language, is developing at fast rates, and is highly demanded by specialists of different branches and, therefore, provokes interest of numerous philologists. On the other hand, it can cause many difficulties for a translator of specialized literature. Lack of knowledge about the origin, word-formation, classification, functioning, peculiarities of term translating can prevent obtaining adequate results. Authors of the present article study polysemy of English terminological units to make adequate and accurate translation that is the feature of high linguistic proficiency. The only meaning of a term hinders developing its polysemy, but one should remember that each concept is influenced by linguistic processes and thus, should be studied. The research analyzes the phenomenon of polysemy in the terminological system of the English language, describes reasons of polysemy appearance, as well as determines specificity and ways of translating English terms. The work also identifies factors, influencing the process of translating polysemous terms.

The authors of the research note that when translating polysemous terms from English into Ukrainian, different tools of inter-language transformation are used, particularly lexical and semantic transformation like specification, generalization and method of semantic development, as well as lexical transformation. However, the principal focus should be made on the context. It is impossible to choose the method of translating without considering the context of the term use, because translation can be different in different contexts. Contextual meanings appear in the process of a word use in the language depending on the surrounding and is expressed under the effect of a narrow, broad, and extra linguistic context. Thus, context is of principal importance as it helps translators identify the only correct meaning and choose the proper equivalent in the target language.

Key words: polysemy, grammatical and lexical polysemy, lexical unit, scientific and technical terminology, lexical and lexical-semantic transformation.

Проблеми термінології знаходяться сьогодні у колі найактуальніших питань перекладознавства та лінгвістики. Адже термінологічні одиниці належать до того шару лексики, яка, з одного боку, посідає значне місце в загальнонаціональному словнику будь-якої мови, розвивається стрімкими темпами, користується підвищеним попитом серед

фахівців будь-якої галузі суспільного життя й через це зосереджує на собі увагу багатьох філологів, а з іншого, здатна створювати певні труднощі для перекладача спеціальної літератури. Без знань, пов'язаних з походженням, способами утворення, класифікацією, функціонуванням, особливостями перекладу термінів, важко здійснити адекватний переклад. Автори даної статті намагаються дослідити багатозначність англomовних термінологічних одиниць для забезпечення адекватного та точного перекладу, що є показником високої лінгвістичної майстерності. Хоча, з одного боку, вимога однозначності терміна і позбавляє його усіляких можливостей для розвитку полісемії, з іншого – термін знаходиться під постійним впливом мовних процесів і тому вимагає постійного вивчення. У своїй праці автори аналізують явище полісемії в термінологічній системі англійської мови; намагаються встановити причини виникнення полісемії, а також визначити специфіку та способи перекладу англійських термінів і виявити фактори, котрі впливають на процес перекладу багатозначних термінів.

У статті звертається увага на те, що при перекладі полісемічних термінів з англійської на українську мову використовуються різні прийоми міжмовних трансформацій, а саме, лексико-семантичні трансформації, такі як конкретизація, генералізація та прийом смислового розвитку, а також лексичні трансформації. Але велику роль в перекладі науково-технічних текстів, які мають багатозначні терміни, відіграє контекст. Визначення способу перекладу тієї чи іншої термінологічної одиниці без розгляду її в контексті представляється неможливим, адже у різних контекстах терміновживане слово перекладається різними способами. Контекстуальні значення виникають у процесі вживання слів у мові, залежно від оточення і реалізуються під дією вузького, широкого та екстралінгвістичного контексту.

Ключові слова: полісемія, граматична і лексична полісемія, лексична одиниця, науково-технічна термінологія, лексична і лексико-семантична трансформація.

Problem setting. Each translator faces the challenge to make a correct choice of the word to express its adequate meaning in the context. It is the principal and the most complicated task in the translating practice because words are characterized by the language versatility and semantic diversity. More than one meaning of a language unit having a semantic relation between the meanings or transition of the common or related features or functions from one denotation onto another is defined as a polysemy.

Polysemy – is the capacity for a sign (e.g. a symbol, a morpheme, a word, or a phrase) to have multiple related meanings which are historically determined or related by the essence and origin. In the modern linguistics, grammatical and lexical polysemy is distinguished. Polysemy mainly deals with the multiple meanings of words as lexical units. Lexical polysemy is the ability of one word to identify different subjects and phenomena which are associatively related with one another and make a complex semantic unity.

Analysis of recent scientific papers. Different aspects of polysemy, peculiarities of formation of the branch terminological systems, and relations between the structural units of professional languages are studied in the works of numerous domestic and foreign scientists, namely V.A. Hladka, Yu.I. Hurova, V.I. Karaban, Z.R. Karimova, V.V. Levytskyi, F.A. Lytvyn, I.H. Olshanskyi, A.V. Superanska, O.O. Taranenko, J. Leyons, E. Shnaider and others.

The concept of “polysemy” is used in the situation when different meanings of a word (essence, interpretations) are somehow related with one another. For instance: *geophysicist* means a person who is a specialist in geophysics and also a person who is a specialist in gravimetry, *line* has a meaning of *лінія*, *межа* (*graticule line* – лінія географічної сітки)

and also the meaning of *вісь* (*main centre line* – *головна вісь*).

When analyzing polysemy, one should note that a word always appears with one meaning which is called a primary and direct because it directly names the identified subject. It is also characterized by figurative meanings, derived from the direct and motivated through the direct meanings. They appear by transferring the name of one subject, phenomenon, action or feature onto another subject, phenomenon, action or feature being similar to it.

The authors of the work agree to the statement of T.I. Panko, who considers that terminological polysemy as a semasiological process experiences permanent losing of its value during development and stabilization of the terminological systems but never disappears totally. Polysemy is present at all stages of development of both a general language and professional sublanguages, but it is implemented in the specialized vocabulary in a way different from the general language, where that phenomenon causes extension and enhancement of the vocabulary. Polysemy is not always desired in the specialized vocabulary because it breaks the unequivocal correspondence between the referent and the sign nominating it. Therefore, terminological systems of many languages mostly consist of polysemous terms.

The aim of the paper. The article aims to study the phenomenon of polysemy in the English language, to analyze the reasons of its appearance, to identify specific features and ways of polysemous word translating.

The research goal is to analyze polysemy in the English terminological system; to identify reasons of polysemy appearance; to determine specific features and the ways of translating English terms; to define factors influencing translation of polysemous terms.

Presenting the main material. Translation of scientific and technical texts requires special attention to be paid to terms as the language signs which represent concepts of specialized, professional branch of science, and create one of the main problems of their translating because of their polysemy, lack of translation equivalents and national variability.

The research is devoted to the issue of polysemy of terms as well as the ways of translating scientific and technical concepts, particularly lexical and lexical-semantic transformations.

Polysemy is a bright manifestation of the identity of the national language vocabulary which implements potential opportunities of a word and represents natural development of a lexical system of any national language.

Polysemy and multiple meanings of the equivalents of a term translation from English into Ukrainian is probably the main problem. In specialized literature, the fight against polysemy has been long run. Nevertheless, in practice it has a reverse result. A technical term may be polysemous even within one branch. For instance, the term «*reel*» means: *катушка, бобіна, рулон, ролик* [2, p. 290]. Hence, in different terminologies, polysemy is unavoidable in many cases.

The analysis confirms that the most common type of polysemy is the *intersystem polysemy*, when one and the same English term with almost unchanged semantic core (but with the different set of peripheral senses) is used in different branches of the terminological systems of science and technology, e.g. 1) *test driver* – a program for testing another program used as a part of the procedure of alpha-testing; a driver who tests e.g. new car models [1, p. 506]; 2) *converter* – a one-anchor transformer of electric current; a program transforming data from one form into another; a device transforming signals of one kind into the signals of another kind [5, p. 10].

When choosing the strategy of translating polysemous terms, one should consider that there are many researches devoted to the issue. If a dictionary does not provide an adequate equivalent of a terminological unit, if there are no variants of equivalents of a term in the original language or the term is polysemous, different tools of interlanguage transformations can be used. The task is to make a correct choice of the tool of translation in order to maximum adequately express meaning of each term.

Translation transformations are divided into 1) lexical, 2) grammatical and 3) stylistic. Transformations may be combined with one another acquiring the character of complex transformations (lexical and grammatical, lexical and semantic, etc.)

There are different approaches to composing the typology of translation transformations. In the present research, the authors applied the approach proposed by V.N. Komisarov. He considers that depending on the character, translation transformations are divided into lexical, grammatical and lexical-grammatical. Lexical transformations describe formal and semantic relations between the words and word combinations in the original text and in the translated one. In the group of lexical transformations, the researcher also distinguishes formal transformations and lexical-semantic changes. Formal transformations include transcription/transliteration and calculation, whilst lexical-semantic changes involve specification, generalization and semantic development (modulation).

It is suggested that polysemous terms are mainly translated by 1) choosing a variant equivalent and 2) by lexical and semantic transformations like specification, generalization and semantic development.

1) *Choice of the variant equivalent.* According to the definition provided by V.I. Karaban, all equivalent units are divided into mono-equivalent (those having only one translation equivalent, e.g. *atom*); and multi-equivalent (those having more than one translation equivalents, e.g. *frame*, which can be translated as *рама, станина, каркас, кадр, конструкція, корпус*, etc.) [3, p. 279]. The main method of translating mono-equivalent terms is to find a lexical equivalent in the target language. Equivalent is a permanent lexical correspondence in the target language, which is fixed in the dictionary and precisely coincides with the meaning of the word to be translated [3, p. 280].

Translation of multi-equivalent terms requires translators' skills of choosing one variant which is equivalent and adequate to the context. A variant equivalent is viewed as one of the possible variants of the term translation. Each variant equivalent is a translation equivalent of one lexical-semantic variant (LSV) of a polysemous word. For instance, the term *insulator* has the following lexical-semantic variants: 1) *that which insulates*; 2) *dielectric, insulating material*. Thus, each of those LSVs has its translation equivalents and therefore, one can say that the term *insulator* has the following variants of translation equivalents: 1) *ізолятор*, 2) *діелектрик*, 3) *ізоляційний матеріал* [3, p. 18].

The variant equivalent is chosen referring to the correspondence between the lexical and grammatical meanings of words of the languages which take part in the translation with consideration of the context, situation and background knowledge [4].

The translator's choice of a variant among the equivalents which best transfers the appropriate

meaning of the original term should not be based on his/her opinion or spontaneous decision, but should express his/her attitude to the language options. Apparently, a single choice of a variant is not of crucial value, because it is important to follow a system or general tendency chosen by the translator.

2) *Lexical and semantic transformations* can be implemented through the following methods:

Method of specification. Specification is a transformation operation when a translator follows a chain of generalization, substitutes a term having a wider and less complicated meaning in the initial text by a term with a more limited but more complicated and specific meaning. For instance: *flow resistance* – гідравлічний опір потоків; *impact effect* – ефект динамічної дії; *edge-type filter* – щілинний фільтр, *hot-water boiler* – бойлер.

Thus, specification necessarily involves new elements to the term meaning, i.e. by supplementing new features to the concept about the object which is described in translation. For instance, the Ukrainian word “*досліджувати*” can be used in different situations and its specific meaning is significantly determined by the context, whilst in English, that meaning is expressed by different words with more specific meanings depending on the context, e.g. *досліджувати місцевість* – *to explore the environment*; *досліджувати ринок* – *to investigate the market*; *досліджувати явище* – *to research into sth.*

When translating from English into Ukrainian, it is necessary to substitute a term having a wider range of meanings by an equivalent which specifies the meaning according to the context or stylistic requirements.

Method of generalization. When translating terms, the method of generalization can be applied. It is a transformation operation when a translator follows a chain of generalization and substitutes it with a term of more limited and more complicated meaning expressed by the word or word combination of the initial text by a term having a wider sense or less complicated meaning, i.e. the type concept is substituted by the generic one. Generalization of the initial meaning can be applied in cases when the degree of information arrangement of the initial unit is higher than the degree of arrangement which corresponds to it by the meaning in the target language. For instance: *potential energy barrier* – потенційний бар'єр; *fuel heat-generating element* – тепловиділяючий елемент; *composite-type rock-fill dam* – кам'янно-земляна гребля; *conveyer-type furnace* – конвеєрна піч. Generalization, therefore, necessarily involves shortening of the elements of meaning, i.e. some loss in the translation.

Method of semantic development of a polysemous term. The method of essential development is revealed in substitution of a vocabulary equivalent when translating by a contextual one which is logical and appropriately related and used in cases when none of the available equivalents of the polysemous term supplied in a dictionary is adequate to the context. It means that the method is used for a deeper semantic interpretation of a lexical unit or a word combination. For instance: *development* – проявлення плівки, *table* – конвеєр, *hazard* – інтенсивність відмов, etc.

Translation of a polysemous term according to the context. The process of translation involves solving numerous problems of choosing the appropriate meaning of terms because of their polysemy. Therefore, context is of crucial importance when choosing the appropriate meaning and it is impossible to translate any terminological unit without considering its context. Contextual meanings appear in the process of using words depending on its environment and is implemented under the effect of a narrow, wide, and extra linguistic context.

Context is viewed as a language environment, in which a linguistic unit is used. Thus, context of a term is a complex of words, grammar forms and constructions, in which the term is used.

The most important function of context is to solve the problem of a word polysemy. Context rejects polysemy of a term and leaves the only meaning. Thus, context shapes a single meaning of a lexical unit and prevents using several potential equivalents of the terminological unit in the target language.

Using dictionary when translating polysemous words. Translation of scientific and technical literature, especially polysemous words, requires using dictionaries, because translation of such words suggests making a choice of one of available variants of the equivalents supplied in the dictionary.

To find the special terms quickly, one should know the appropriate sources of information useful for this purpose. All sources of information used by translators can be divided into general and specialized. General sources of information are divided into dictionaries of general use and general encyclopedias. Specialized sources of information include specialized dictionaries, specialized encyclopedia, reference books in different fields of science and technology, specialized literature. Specialized dictionaries are also divided into bilingual (polytechnic) and supplementary specialized bilingual dictionaries (dictionaries of abbreviation, dictionaries of pseudo-friends of translators) as well as monolingual specialized dictionaries (e.g. technical dictionary).

Although dictionaries are necessary, the main precondition of a correct translation is to know the subject the text deals with. A.V. Fedorov notes that translation can never be limited by a choice of one element of the number of those, which are fixed in dictionaries as equivalents to a certain original word. In the translation practice, there are many cases when the words which are not mentioned in dictionaries are used because the dictionaries cannot include all possible word combinations made with the word.

Conclusions. When translating scientific and technical texts, a particular attention is paid to interpretation of terms as they are the language signs representing a concept of some specialized, professional field of science or technology. They are important constituents of scientific and technical texts and one of the main challenges tackled by translators because of their polysemous meaning, lack of equivalents and national variability.

The most complicated problem for translators is to deal with polysemous terms, especially polysemous terms found within one scientific branch.

Translation of polysemous terms from English into Ukrainian involves using different methods of interlanguage transformations, particularly lexical and semantic transformation (specification, generalization and method of semantic development) and lexical transformations.

When translating scientific and technical texts, which include polysemous words, from English into Ukrainian, the important aspect is to choose the appropriate meaning, and therefore, choice of the method of translation of any terminological unit should be always considered in the context as different contexts can disclose different meanings of the term. Contextual meanings appear in the process of using words depending on the environment and are implemented under the effect of a narrow, wide, and extra linguistic context.

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