

ПЕРЕКЛАДОЗНАВЧІ СТУДІЇ

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SPECIFIC FEATURES OF ENGLISH TERM-COMBINATIONS CONSISTING OF MULTIPLE ELEMENTS AND THE WAYS OF THEIR TRANSLATION

The questions of appearance of English term combinations consisting of multiple elements are considered in the paper. The author analyses the peculiarities of multi components terms and principles of their translation.

Key words: term, term-combination, term-combinations consisting of multiple elements; multi components term-combinations, translation of term-combinations, context.

At present with expansion of international relationships and commerce in Ukraine and their subsequent development the necessity of studying term-combinations consisting of multiple elements is observed in English terminology. It is explained by the tendency to give the name to a new concept briefly in the language and also the linguistic peculiarities of the English language structure. Nowadays linguists are very interested in the problem of functioning and translating of term-combinations consisting of multiple elements. The recent study devoted to the problem of term-combinations, their peculiarities and ways of their translation has grown remarkably and many new views on various aspects are suggested. The research of structural specific and features of English term-combinations consisting of multiple elements can give an opportunity to develop the principles and ways of their translation.

Firstly to consider the problem of appearance of term combinations consisting of multiple elements it is necessary to give definition to the words which are used for logical representation of scientific concepts. Despite of a great number of the researches concerning the concept «term-combination» there is no formal and adequate definition for this term today. Thus O. Akhmanova defines term-combination as «a word unity of special (scientific, technical and other) language created for exact expression of special concepts and denotation of special objects» [9, p. 16]. «There are words like «soda», «sugar», «spirits», «soap», «fat», «rubber», «plastics», «carbohydrates», «fibre» and so on, which are known to the general user of language and which form the part of his everyday experience. But, there are words like «sodium carbonate», «lactose», «ethanol», «2-chlor butadiene», «polyurethane», etc. which are specific for theoretical chemistry. And then there are the chemical formulae which are suitable and widely used by chemists», – emphasized the researcher [9, p. 16].

There are also linguists who consider this language unit as a combination of words, which are united on the basis of a certain syntactic link and provide nominative function [1; 4; 5; 6; 7]. For instance, V. Arakin regards term-combination as «a combination of two or more definite words united on the basis of their definite syntactic link and execute nominative function» [1, p. 129]. Another linguist V. Deineka adds that term combinations consisting of multiple elements can be considered as a separate member of the sentence [1, p. 129]. Professor I. Korunc'

considers term-combinations in two aspects: term-combinations with coordinate links and term combinations with subordinate links [7, p. 90–91]

Thus term and term combinations are words of special language used for professional or scientific communication to represent scientific or technical concepts, which on the basis of syntactic link execute nominative function and express briefly a special concept. Term is the language sign for a concept [5, p. 315]. This language sign mustn't be only a single word, it can also be a set of words – a fixed phrase – used only to denote a specific concept. Most terminologists accept short phrases consisting of two, three and more words as terms [5; 7; 8 Карабан, Корунець, Суперанская,]. But terms as language signs are not independent from concepts. The advantage of using term for word expressions of definite concepts is that the term is more recognizable in its boundaries both electronically and manually.

After the analysis of various classifications of term-combinations consisting of multiple elements represented in the works of modern researchers, such as A. Kovalenko, O. Superanskaya, I. Korunec', which became the basis for many other researches we can conclude that among linguists there is no common opinion on typology and classification of term-combinations. Some linguists consider the differentiation of term combinations according to their grammar structure and correlation of a particular part of speech [6; 3]. Other linguists distinguish term combinations on the basis of their semantic or syntactic links between elements.

The most common classification proposed by A. Kovalenko is based on the specific of grammar structure according to which there are such types of term-combinations consisting of multiple elements:

a) term-combinations of «adjective + adjective + noun» structure – *tactical nuclear weapons* – тактична атомна зброя;

b) term-combinations of «adjective + noun + noun» structure – *multiple tariff system* – система множинних тарифів;

c) term-combinations of «noun + noun + noun + noun» structure – *Bank Credit Regulation Committee* – комітет з регулювання банківських кредитів;

d) term-combinations of “verb + adjective + noun» structure and their variants – *to unload heavy good* – розвантажувати важкий товар;

e) term-combinations of “adjective + Participle I + noun” structure – *Financial Accounting Standards* – стандарти фінансового обліку;

f) term-combinations of “noun + Participle I + noun” structure – *air-retaining device–пристрій, що утримує повітря*;

g) term-combinations of “Participle II + noun + noun” structure – *computed value method* – метод визначення вартості шляхом обчислення

h) term-combinations of “noun + Participle II + noun” structure – *value added tax* – податок на додану вартість and their variants [6, p. 259].

Another common classification proposed by O. Superanskaya is based on the number of elements according to which term-combinations can be divided into simple or elementary (two-word combinations) and compound or consisting of multiple elements (three and more words in term-combinations). In their turn, term-combinations can be:

a) combinations in which the content of elements are expressed with annexation: *load governor* – регулятор потужності; *brake landing* – посадка з гальмуванням;

b) combinations in which components are grammatically formed with prepositions or endings: rate of exchange – валютний курс; *braking with rocket* – гальмування за допомогою ракетного двигуна [8, p. 83].

On the basis of semantic links existing between elements according to the classification offered by O. Superanskaya term combinations can be:

1. Term-combinations the elements of which are independent words and can be used separately keeping their meaning: *brake* – гальмувати; *gear* – механізм, пристрій, шестерня, *brake gear* – гальмівний пристрій. But term-combinations of this type acquire a new meaning and have semantic completeness, for example: *electric motor* – двигун, який приводиться в дію за допомогою електрики; *ionic rectifier* – іонний очищувач.

2. Term-combinations in which one of the elements is a technical term and the second one is from general vocabulary: *safety switch* – аварійний вимикач (елек.); *locked switch* – закри-

та стрілка (желез.); *change-over switch* – перемикач (елек.); *change-tune switch* – ручка налаштування (рад.); *electric eye* – фотоелемент; *atmospheric disturbances* – атмосферні перешкоди (рад).

The elements of such type of term-combinations could: non-combined two nouns, or a noun and adjective. This method of formation of scientific and technical terms is more productive than the first mentioned above where two elements are independent terms: *back coupling* – зворотній зв'язок; *variable capacitor* – змінний конденсатор.

One of the peculiarities of term-combinations of the second type is that the second element (a noun) can accept the meaning of the whole combination and appear as an independent term in the context: *current* замість *electric current*; *circuit* замість *electric circuit*, *searcher* замість *search engine*.

3. Term-combinations both elements of which are words from general vocabulary and only combination of them becomes a term: *line wire* – дріт під напругою (елек.); *live stream* – свіжий пар (теп.).

Such method of formation of scientific and technical terms is unproductive. The terms of the third type do not have strong ties between elements. They can be used as an ordinary combination of adjective with a noun in a direct meaning: *thermal stress* – термічний тиск (*thermal aquarium*); *progressive illumination* – послідовне освітлення (*progressive direction*).

Although different types of term combinations without any exception exist in English and are used in scientific and technical texts, the preference is given to some of them. The main element, as a rule, is in the end of a term combination. The element which is before the main element is called attributive and includes the expressions of the concepts characterizing the main element.

Attributive combinations play a great role in human mentality as they convey a definite characteristic of an object and classify it making specific among others. Attributive term-combinations have their own structural and semantic features consisting of semantic links between their elements, thus can be expressed by various constructions. Nouns are often used as a main element of attributive term combinations. Dependable element can be expressed by an adjective, pronoun, numeral, participle and even a noun.

According to contemporary linguistic researches the attributive element is often expressed by adjectives. Adjectives which comprise word combinations with the structure «adjective + noun» (AN) are called attributive. «Attributive adjectives are part of the noun phrase headed by the noun they modify; for example, *happy* is an attributive adjective in «*happy people*». In English, attributive adjectives usually precede their nouns in simple phrases, but often follow their nouns when the adjective is modified or qualified by a phrase acting as an adverb. For example: «I saw three happy kids», and «I saw three kids happy enough to jump up and down with glee» (see Wiki, adjective). Attributive adjectives always express the comments to the objects in speech. Such comments can include state descriptions (*broken, sharp*), quantity descriptions (*one, three, lots*), dimensional descriptions (*large, tiny, square, parallel*), material descriptions (*metal, glass, rubber*), quality descriptions (*thick, liquid, water resistant*) and etc.

Besides the structure «adjective + noun» (AN), which is the most spread in technical literature and scientific researches (*remote control* – дистанційне керування; *direct current* – постійний струм), attributive relations can be expressed by various constructions in both English and Ukrainian languages. Four different classes of words do the function of an attribute:

1. Participle («Present Participle + noun»: *acting pressure* – робочий тиск; *alternating current* – перемінний струм; «Past Participle+noun»: *balanced amplifier* – сбалансований підсилювач; *estimated cost* – проектна (кошторисна) вартість).

2. Pronoun (*his experiment, another element*);

3. Numeral (*the second time, twenty four hours*);

4. Noun (substantive attributive constructions: *peak energy* – максимальна енергія; *labour scarcity* – продуктивність праці or possessive case – *Webster's dictionary* – словник Вебстера);

Also the function of attribute can be expressed by adverb (*room upstairs, man near the door*), by noun with prepositions (prepositive attributive constructions): *lid of frame* – кришка корпусу; *body of reactor* – корпус реактора; *the case of law* – випадок судової практи-

ки; *the case for defendant* – факти на користь підсудного; *real density of catalyst* – реальна щільність каталізатора.

The problem of translating term-combinations consisting of multiple elements is very complicated. Translator must be not only familiar with modern terminology and definite sphere of science and technology, but also know structural derivational and morphemic features of such terms-combinations in the compared languages, semantic and syntactic links between elements. Moreover translator should consider term-combinations in the boundaries of definite context or terminology system because the lexical meaning of such term-combinations can be changed depending on the sphere where they are used.

Scientists not only studied the problems of translation of multi components term-combinations but proposed various ways of their translation. Thus A. Kovalenko, L. Bilozerskaya and others signify in the translation of term-combinations such basic types as analogue translation, descriptive translation, transcription, transliteration and calquing. Professor V. Karaban defines the translation of term-combinations according to use of different prepositions and genitive case of a noun.

In scientific and scholar literature, along with obviously syntactic or semantic ways of name-giving, attributive term-combinations are wide spread. There is a certain amount of constructions consisting of multiple elements in scientific and technical texts, and information represented in this unit could be not only of huge amount, but also various. But the aim of this unit is to pay attention to the problem of decoding of attributive term-combinations consisting of multiple elements and to attract the researchers of English to reconsiderate and develop certain teaching methods.

Attributive term combinations with their complex semantic and syntactic links became the specific phenomena of the English language, and translation of them requires the knowledge of such links.

The differences between the English and Ukrainian language systems are clear in the translating term combinations: they as a rule have opposing meanings: *high hopes* – великі надії; *breakneck rapidity* – шалена швидкість. The same adjective can be linked with different nouns in English and translated into Ukrainian by different adjectives depending on the meaning of the noun, ср.: *bad headache* – сильний головний біль; *bad debt* – невиплачений борг; *bad apple* – гниле яблуко. However, there also exist such term combinations as: *gun control* – нормативи придбання і використання громадянами вогнепальної зброї; *power lunch* – діловий сніданок, which have different structure and can cause difficulties at the process of their translation.

For correct and adequate translation of such term-combinations it is necessary to know their structural and semantic features, the main content of attributive term combinations, and understand semantic and syntactic links, the context and national realities. Attributive term combinations consisting of two elements are not needed of the explanation of their semantic links between elements: *space age* – космічна ера, *atomic electron* – атомний електрон, *functional electronics* – функціональна електроніка, *contact filtration* – контактна фільтрація, *radiation exposure* – радіоактивне випромінювання. However attributive term combinations or phrases consisting of multiple elements cause difficulties because they have the structure where several words stand in succession.

To translate such attributive constructions the rule of right hand or the rule of order is used. The order of translation depends on the semantic connections between determination and determined word. So, it is necessary to begin the process of translation with the right part of the term combination to the left one with the last noun, paying attention to the fact that an important role in determination; it is needed to translate into Ukrainian by nouns in cases or with prepositions:

expansion ratio – коефіцієнт розширення

1 2 – 2 1;

products price decrease – зменшення цін на вироби

1 2 3 – 3 2 preposition 1

The connection between determinations is understood on the context, for example:

the electric equipment supply – живлення електрообладнання

1 2 3–3 1 2.

In this case the first word «*electric*» is a determination of the second «*equipment*», ср. «*micro spot welder*» – апарат для мікроточкового зварювання.

In term-combination «*oil fields air surveying*» the syntactic links between elements influence the order of translation:

1 2 3 4–3 4 2 1

Oil fields air surveying – повітряна розвідка родовищ нафти.

To explain the aforesaid, we may compare two term combinations: *electrical resistance losses* and *losses by electrical resistance*. While comparing these two combinations, it becomes obvious that the base-line knowledge is not quite needed to understand what a determination and what a determined are. It is clear that in such phrases as *absolute zero*, *high quality*, *nuclear energy*, *real number*, *high frequency*, *high energy*, *high speed*, *small scale*; semantic links of these term combinations require neither deep penetration into the content of the object, nor the use of some special knowledge. These attributive combinations are such stable units that decoding of three or more elements which include these dual element combinations (*absolute zero temperature*, *high quality level*, *nuclear energy conversion high*, *speed computer*, *real number system*, *high frequency instrument*, *small scale body*), can be achieved without any deep knowledge. It happens simply because of the fact that these dual component combinations are so accreted that there can be no possibility to breach their semantic links.

Different case is observed on the example of «mixed» attributive term combinations which have “adjective + noun + noun” structure such, as *large software development*, *various group elements*, *regular permutation group*, *general program system*, where we can understand quickly the correlation of elements without proper special information. If we try to decode this expression as *an intense light beam*, it can be *an intense beam of light* (*інтенсивний промінь світла*) or *a beam of the intense light* (*промінь інтенсивного світла*). Naturally, the problem of decoding becomes more difficult when we examine term combinations consisting of four or five elements, i.e. various complicated combinations of «beaded» compound words. This type of construction of word combination is not typical for the Russian or Ukrainian languages. The main word in such group is the last, and all preceding words are its attributives.

Thus, the order of attributive term or phrase translation which consists of multiple elements requires such steps:

- 1) hence the main word of such term combination is the last, the interpreter must start the translation from the end of the term-combination, i.e. from the last word;
- 2) next it is necessary to define semantic and syntactic links between elements of attributive term-combinations;
- 3) in the end the interpreter must conduct back translation to understand that it has done correctly.

An attributive construction may be suggested as a model: *free space wave propagation*. The key word is «*propagation*» (поширення). Then there is the defined word «*wave*» – хвиля. So, there it could be as «поширення хвилі» as a next step we translate «*free space*» – вільний простір. Thus, the connection between the words in term combination which belong to the key word, could be formed: *Поширення хвилі у вільному просторі*. Compare, *London airport customs officials* – представники митниці у Лондонському аеропорту.

Sometimes for an adequate translation of an attributive term combination an interpreter has to obtain specific knowledge. For instance, the following attributive term-combinations: *high density image sensor*, *high permeability soft iron core*, *minimum weight code vector*, *high pressure wind tunnel*, *minimal time control systems*, *high energy fission electrons*, *logic error correcting capacity*, *actual estimation error covariance* can not be translated without additional knowledge of the context. The inner semantic relationship in such combinations can be defined only by the knowledge of special background information and those extra linguistic links in which determined objects are between each other. In verbal speech when such term-combinations are read aloud or pronounced, it is explained by prosody, i.e. prosodic means and clear expose of semantic structure of these combinations are used. If we read the term combinations formed without a hyphen, it is obvious, that for decoding them the knowledge of object is required.

If we consider examples from mathematic texts, for everybody, who knows it well, such term-combinations as *mean value theorem*, *first order approximation*, *intuitive set theory* are absolutely recognizable. One does not need either prosodic or spelling knowledge to understand that these term-combinations can be translated as *теорема про середню величину*, *наближення першого порядку*, *інтуїтивна теорія безлічі*.

The meaning of term combinations becomes clear immediately when there is the base-line knowledge and the use of spelling is not required. However, when the base-line knowledge of a reader or listener is inadequate, difficulties of understanding of such complicated term-combinations increase that is why the question about orthographic expression of attributive term-combinations in scientific texts is still essential nowadays.

Sometimes in order to translate the attributive term combination with several elements the translator has to read an article or a fragment of the text till the end to understand the correct semantic and syntactic links and, of course, after the whole translation of the text, it is necessary to translate its title. For instance, the word «*poll*» can be translated differently depending on the semantic and stylistic links and the context: *poll tax* – *виборчий податок*; *poll tax states* – *штати, в яких сплачується виборчий податок*; *poll tax states conference* – *конференція, що проводиться у штатах, в яких сплачується виборчий податок*. Thus, studying the structural and semantic peculiarities of attributive groups shows the greater range of semantic links between the components of word combinations in English than in Ukrainian.

To translate term-combinations with multiple elements different methods of translation are applied.

1. Descriptive translation. This kind of translation is used when there is not any appropriate meaning for the word in the target language and also when it is necessary to explain the word in a dictionary, ср.: *the commercial acid is generally not quite pure* – *кислота, яка надходить у продаж, не зовсім чиста*; *primary (standards) laboratory* – *головна метеорологічна установа відомства, яка зберігає зразки вимірів вищих розрядів*.

2. Translation with the help of cases: *direct current system* – *система постійного струму*; *high-power station* – *силова станція великої потужності*.

3. Calque or loan translation, i.e. translation of English attributive term-combinations with the help of transferring of their structural parts. Such type of translation is often called «word for word translation»: *low-noise engine* – *маложумний двигун*; *high-voltage switch* – *вимикач високої напруги*.

4. Transcription or transliteration, i.e. translation of attributive term-combinations with the help of letters of the target language to express the sound form of term-combinations: *Special System Industry* – *Спешіал Систем Індустрі*.

5. Translation of attributive term-combinations with the help of different prepositions: *data processing equipment* – *обладнання для обробки даних*.

A translator can find an appropriate meaning of term-combinations according to the meaning of the words which are in the close link with them (the closest link is between a noun and an adjective, between an adjective and a determined word): *amplifiers are extensively used in radio transmitters* – *підсилювач широко використовується в радіопередавачах*.

Thus, attributive term combinations with multiple elements include several words and cause difficulties at the process of their translation. Such multi element term constructions take special place in contemporary modern researches and technical literature. However, if the main parts of term-combinations have the structure which corresponds to the structure of the same terms in the target language, these term-combinations do not cause difficulties at their translation. It is only needed to find appropriate meanings of each element, ср.: *polarity of line* – *полярність лінії (постійного струму)*; *pole of functions* – *полюс функцій*, *but natural rubber-based stock* – *суміш на основі природного каучуку*.

There are term-combinations which cannot be translated with the help of word for word translation though they have appropriate equivalents in the target language. Definite elements of such attributive term-combinations differ from their equivalents in the target language: *mixed melting point* – *температура плавлення суміші*. It is thought that the main difficulty is the translation of terms the elements of which have not got any similarities with their real meanings. Sometimes they are even opposite to each other.

Besides polysemantic terms, which have different meanings and not only in different spheres of human activity, science and technology, but also in one and the same sphere, are often met: *tile* – *черепиця, плитка, кахель, цеглина*; *schedule* – *каталог, розклад, графік, програма, режим*; *switch* – *вимикач, перемикач, комутатор*; *wot* – *корінь, вершина (зварювального шва), хвіст лопати*. Such term-combinations which have several variants of their translation in different dictionaries should be translated into the target language according to the context.

Indisputably, translation of terms is a very responsible task for an interpreter, who needs to possess a high degree of knowledge of both SL or TL, as well as a many-sided perception of a linguistic image of the world, and also excellent awareness of that area of science or technology which is actually connected with translation. In fact, regardless of an expansion of international cultural and economic connections in the world, the use of modern facilities of communication, such as world network, the Internet, as well as cooperation of different languages and cultures, a translator deals with the phenomenon that each language is unique and develops separately.

Each language has its own linguistic, cultural and historical realities, but simultaneously there are the realities and concepts which still do not have any equivalents of their translation into other languages. For this reason an interpreter plays the role of an interlingual mediator who helps recipients to get necessary information, and at the same time, creates new terminological lexical units in the vocabulary of a mother tongue. In the process of translation of the English terms an experienced translators select this or that method of translation basing his choice on the content of the context, or on the position of the term, and sometimes combines all aforementioned methods to transfer the lexical meaning more precisely and more adequately saving its sound form and morphemes. And, taking into account the fact that modern English terminology is a producing system, an adequate translation of professional terms acquires especially important value for the successful formation and normalization of the Ukrainian terminology system in accordance with international standards.

After the analysis represented above we can summarize that term-combinations consisting of multiple elements are still very attractive part of terminology for further researches. The problem of classification, differentiation and translation of term-combinations consisting of multiple elements in English terminology always retains its topicality because of the science and technology development and progress.

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У статті розглядаються питання виникнення англійських термінологічних словосполучень, які складаються з декількох елементів. Автор аналізує особливості багатокомпонентних термінів та принципи їх перекладу.

Ключові слова: термін, терміносполучення, терміносполучення, яке складається з декількох елементів, багатокомпонентне терміносполучення, переклад терміносполучень, контекст.

В статье рассматриваются вопросы появления английских терминологических словосочетаний, состоящих из нескольких элементов. Автор анализирует особенности многокомпонентных терминов и принципы их перевода.

Ключевые слова: термин, терминосочетание, терминосочетание, состоящее из нескольких элементов, многокомпонентное терминосочетание, перевод терминосочетаний, контекст.

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