

SEMANTIC BASIS OF BIOLOGY TERMS IN THE ENGLISH AND UKRAINIAN LANGUAGES

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Statement of the problem.

Comparative linguistics is the study of the relationships or correspondences between two or more languages and the techniques used to discover whether the languages have a common ancestor. The main task of comparative linguistics is to classify languages according to the identical and different features in the lexicon, syntax, morphological system, grammar, phonetic system, etc. of the languages under comparison.

Every comparison should lean on the specific facts of the investigated objects. When we speak about vocabulary, we should take into account the whole complexity of the word's semantic structure, connected with its logical and subjective content, representing the reflection of objective reality, its lexico- grammatical combination and correlated links of words with all the semantic system of the dictionary [2; p. 20-21].

Componential analysis, also called feature analysis or contrast analysis, refers to the description of the meaning of words through the structured sets of semantic features, which are given as "present", "absent" or "indifferent with reference to feature". Componential analysis is the linguistic method analyzing the structure of a word's meaning. Thus, it reveals the culturally important features by which speakers of the language distinguish different words in the domain [4; p.125-127]. The meaning of any word can be represented in the form of a semantic structure the components of which form a hierarchy.

Semantic components represent the conceptual constituents of senses in the same phrase markers and represent the syntactic constituents of sentences. They represent not only the atomic constituents of meaning (the simplest concept), but also the complex ones [3; p.11].

G. Leech defines the term componential analysis as "The method of reducing a word's meaning to its ultimate contrastive elements" [1]. Componential analysis allows us to provide definition for a larger set of words in terms of few components.

Newness of the study. The **relevance** of our research lies in the comparative analysis of lexical semantics of the terms of biology in English and Ukrainian with the application of componential analysis and methodology of formalized analysis of semantics of lexical units [5], which enables us to carry out the semantic investigation of terminological lexis in the English and Ukrainian languages and reveal the correlation between terminological and general language vocabulary.

The **aim of our paper** is to disclose the semantic characteristics of the terms of biology in the English and Ukrainian languages, to reveal the peculiarities of

terminological units of the sphere of biology on the background of general language system in English and Ukrainian.

The following **tasks** were put forward to achieve the aim of the paper: to select the English and Ukrainian terms of biology from the special and explanatory lexicographical sources; to compare terminological and general language meanings of terms; to investigate the semantic features of English and Ukrainian biological terms applying the methodology of formalized analysis of terms' semantics; to construct the matrices of semantic space of English and Ukrainian terms of biology; to compare the results of investigation in the languages under study.

The language **material** of the investigation was collected from the following dictionaries explanatory (Macmillan Dictionary, Словник української мови в 11-ти томах) and terminological lexicographical sources (Dictionary of Botanical and Technical Terminology, Biology-online dictionary, Медична біологія: тлумачний словник біологічних термінів і понять, Словник ботанічних термінів онлайн).

Findings and discussion. General language and special meanings of the English and Ukrainian terms of biology were studied by means of application of componential analysis of their semantics. The semes were singled out from the meanings of these lexical units as both general language words and terms. The next task of the research was to construct matrices of the semantic space of the English and Ukrainian terms of biology. They present terms, arranged in the horizontal lines and semes, which were singled out of semantics of terms as lexical units of general language and special words set in vertical lines order. On the crossing of the rows and columns, we indicate the existence of seme realizations in the investigated meanings. The ordering of the whole seme stock of the investigated material was carried out on the basis of the quantitative criterion. The most widely used semes were placed at the beginning of the matrix, the semes with an average degree of occurrence and monofunctional semes can be found at the end of the arranged list. The investigated English and Ukrainian terms are placed in the decreasing order – from the most polysemantic lexical units to the monosemantic ones.

The matrix description of the English and Ukrainian terms of biology enables us:

- 1) to define the position of terminological system of biology in generally used vocabulary of the languages under investigation;
- 2) to present the structure of its semantics in English and Ukrainian;
- 3) to point out the connection of biological terms with other terminological units and the ways of transition from one meaning to another;
- 4) to compare the main principles of the semantic space organization in the English and Ukrainian terminologies of biology.

The construction of the matrices of the semantic space of the biology terms allowed us to divide terms into three groups according to the degree of their semantics: lexical units with the highest degree of polysemy, lexical units characterized by the average degree of polysemy and monosemantic terms. In the English language material the group of terms with the highest degree of polysemy consists of 75 terms containing 12-4 meanings in their semantic structure. The polysemantic group of the Ukrainian terms consists of 28 elements having in their semantic structure from 9 to 4 semantic elements.

The analysis showed that in both terminological systems lexical units of this group are characterized by broad general language semantics. A vivid characteristic feature of this group in both languages is that the majority of biological terms of this group are also terms of other branches of human studies i.e. they are characterized by interdisciplinary polysemy. In the English language the terms of biology are frequently used in medicine, physics and chemistry, whereas in the Ukrainian language – in technical science, medicine, mathematics and linguistics. The semantic space of these lexical elements of the general language system is characterized by the combination of general language semes and terminological ones. Semantic analysis of the first group of biology terms as special and general lexical units in both languages revealed two tendencies of their semantics. In some cases terminological meaning is implicitly indicated in general language explanation. In this case we would recommend marking this meaning by the label *biol.* The opposite tendency is when biological meaning is not mentioned in the explanatory dictionary at all. In this case we suggest adding it to the rest of the meanings. In the Ukrainian language material the words of the first group contain such general language semantic features as obsolete and figurative meanings, the ability to form general language word combinations etc.

The groups of lexical units with the average degree of polysemy in both languages unite the terms having 3-2 semes in their semantic structure. As far as this group is quite numerous in our English language material we decided to divide it into several thematic subgroups: plant parts, processes, kinds of plants, substances, abnormal phenomena. In the English material this group is widely characterized by word-combinations with informal, obsolete, figurative and literary meanings, whereas the Ukrainian terminological units of this group revealed the tendency of intensification of their terminological character. In some cases the Ukrainian biological terms are characterized by terminological polysemy being also the terms of other branches of human activity.

The groups of monosemantic terms in both languages contain the units with only one meaning in their semantic structure. Monosemy is a rather spread phenomenon in English biological terminology. In the English language monosemantic terms are characterized by the process of terminologization whereas in the Ukrainian they are borrowed terms in their majority. The characteristic feature of the terms of the third group in both languages is that some of them are not registered in the explanatory dictionary as they don't have general language meanings at all. Some of the terms are registered in the explanatory dictionary being implicitly defined as the terms of biology. We suggest labeling such lexical units as the ones referring to the sphere of terminology of biology. These lexical units are not characterized by general language semantics being only terms of biology.

The seme analysis of the language material in English and Ukrainian enabled us to classify semes according to the quantitative parameter. We distinguish polyfunctional semes, semes with the average degree of occurrence and monofunctional. The group of polyfunctional semes occupies the first place in both matrices, uniting semantics of 32-6 terms (English material) and 16-6 terms (Ukrainian material). This group of semes is located in the left part of the matrix. Semantic analysis of the English terminological units

shows us that all the semes of this group have terminological character, only in some instances their terminological and general language functions coincide. In the Ukrainian language material this tendency is opposite. In the first group the majority of lexemes are united by the general language semantic components. The second and third groups of our Ukrainian language material comprises the semes that can be clearly divided into two groups – the one uniting terminological semantic features and the other – general language ones. The analysis of the seme composition of the English terms of biology proved that the majority semes of the second and third groups bear terminological character.

The results of the performed semantic analysis are presented in the matrices of semantic space of terms of biology in the English and Ukrainian languages. In the matrix of the English language material the part of the matrix reflecting the realization of frequently used semes lexical units with wide semantics are presented. This fact testifies to their significant semantic value in the semantic space of language. Here the special semantics of English biological terms very often coincides with that of general vocabulary one, thus the concretization is needed for their identification. The number of seme realizations decreases in the direction of the reduction of the degree of lexical units' polysemy and semes' frequency of occurrence.

The second matrix presents the semantic space of the corresponding terms of biology in the Ukrainian language. The Ukrainian general language lexical units are not characterized by the high degree of polysemy, which is reflected by relatively small number of seme realizations. The correlation of general and terminological meanings in this matrix is expressed by the regularities of general and terminological semes' location. In the upper part of the matrix generally used semantics is presented by a great number of seme realizations, which reflects tight correlation of the semantics inside this group of lexical units. In the central part of the matrix the semes of terminological character are rather numerous and in the majority of cases they are characterized by direct and mediated connections with one another. In the Ukrainian matrix monofunctional semes of both terminological and general language character are more numerous than in the English language material.

The comparative research of semantics of the terms of biology in English and Ukrainian enabled us to define the main similarities and differences of the semantic structure of these lexical units as the elements of terminological system and general language system and revealed the possibilities of their further semantic study.

Literature

1. Leech Geoffrey. Semantics: the study of meaning / Geoffrey Leech [Электронный ресурс]. – Режим доступа: <https://yanjianghk.files.wordpress.com>
2. Васыгова М.Ф. О некоторых аспектах контрастивной лингвистики / М.Ф.Васыгова // Общее и сопоставительное языкознание. Сб. науч. тр. – М.: МГУ, 1986. – 96с.

3. Жирмунский В.М. О границах слова / В.М. Жирмунский // Морфологическая структура слова в языках различных типов. – Москва – Ленинград: Наука. – 1963. – с. 6 -33.
4. Котёлова Н.З. Значение слова и его сочетаемость / Н.З. Котелова. – Л.: "Наука", 1975. – 164 с.
5. Фабіан М.П. Етикетна лексика в українській, англійській та угорській мовах / М.П. Фабіан. – Ужгород: Інформаційно-видавниче агентство "ІВА", 1998. –256с.
7. Biology-online [Електронний ресурс]. – Режим доступу: http://www.biology-online.org/dictionary/Main_Page
8. Dictionary of Botanical and Technical Terminology [Електронний ресурс]. – Режим доступу: [http:// www. Cactus-art/biz/notebook/Dictionary/](http://www.Cactus-art/biz/notebook/Dictionary/)
9. Macmillan Dictionary [Електронний ресурс]. – Режим доступу: <http://www.macmillandictionary.com/>
10. Медична біологія: тлумачний словник біологічних термінів і понять [Електронний ресурс]. – Режим доступу: <http://subject.com.ua/biology/medical/312.html>
11. Словник української мови: в 11 тт. / АН УРСР. Інститут мовознавства; за ред. І. К. Білодіда. — К.: Наукова думка, 1970—1980 [Електронний ресурс]. – Режим доступу: sum.in.ua
12. Словник ботанічних термінів [Електронний ресурс]. – Режим доступу: <http://pidruchniki.com/1211120149169/>

Резюме

Статтю присвячено узагальненому зіставленню семантичних характеристик термінологічних систем біології у англійській та українській мовах із застосуванням комплексної методики дослідження семантики лексичних одиниць, яка полягає у поєднанні компонентного аналізу та методики формалізованого аналізу лексичної семантики. Семантику лексичних одиниць було досліджено на основі термінологічних та загальноживаних тлумачних лексикографічних джерел. Застосувавши компонентний аналіз семантики, ми виділили семи із загальноживаних та термінологічних значень досліджуваних лексичних одиниць і побудували матриці семантичного простору англійських та українських термінів біології.