

## ЛІТЕРАТУРА

1. Вихованець І.Р., Городенська К.Г. Теоретична морфологія української мови / І.Р. Вихованець, К.Г. Городенська. – К.: Унів. вид-во «Пульсари», 2004. – 400 с.
2. Намитокова Р.Ю. Авторские неологизмы: словообразовательный аспект / Р.Ю. Намитокова. – Ростов-на-Дону: Изд-во Рост. ун-та, 1986. – 156 с.
3. Наш Михайло Стельмах: Літературно-критичні статті, етюди, есе / М.П. Стельмах. – К.: Рад. письменник, 1982. – 367 с.
4. Словник української мови: В 11 т. – К.: Наукова думка, 1970-1980.
5. Стельмах М.П. Твори: В 7-и т. – Т.5. / М.П. Стельмах. – К.: Дніпро, 1983. – 383 с.
6. Стельмах М.П. Хліб і сіль / М.П. Стельмах. – К.: Дніпро, 1975. – 671 с.

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### ELEMENT METAPHORS AS THE MEANS OF SCIENTIFIC KNOWLEDGE REPRESENTATION

*У статті розглядається механізм метафоризації із залученням концепту ВОДА у якості структури джерела; на прикладі текстів з альтернативної енергетики встановлюється лексичний інвентар і функції концептуальної метафори AN ENTITY IS WATER / НЕЧТО – ЭТО ВОДА в російській та англійській мовах, а також виявляються моделі осмислення наукових феноменів в термінах метаформи першостихії, характерні для російської і англійської наукової традиції.*

**Ключові слова:** *пізнання, концепт, криптоклас, структура джерела, структура мети, структурна метафора, онтологічна метафора.*

*В данной статье рассматривается механизм метафоризации с вовлечением концепта ВОДА в качестве структуры источника; на примере текстов по альтернативной энергетике устанавливается лексический инвентарь и функции концептуальной метафоры в русском и английском языке, а также выявляются модели осмысления научных феноменов в терминах метафоры первостихии, присущие русской и английской научной традиции.*

**Ключевые слова:** *познание, концепт, криптокласс, структура источника, структура цели, структурная метафора, онтологическая метафора.*

*The article studies the mechanism of metaphorization involving concept WATER as the source structure; the analysis of the alternative energy empirical material texts demonstrates the lexical representations and functions of conceptual metaphor AN ENTITY IS WATER / НЕЧТО – ЭТО ВОДА in the Russian and English languages as well as outlines the models of*

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*scientific phenomena understanding in terms of water metaphor, which are typical of the Russian and English scientific community.*

**Key words:** *cognition, concept, cryptoclass, source structure, target structure, ontological metaphor, structural metaphor.*

Any cognition is carried out at three stages, that is sensation, perception and categorization, directly involving language as one of the elements. It should be pointed out, however, that out of three above mentioned stages only the last can undergo verbalization so “it is appropriate to refer to categorization as a linguistic phenomenon as the primary role in the categorization enhancement along with the experience accumulation is assigned to the process of language acquisition” [1: 5].

The latter statement is reflected in the definition of the unit of language category description, namely cryptoclass, given in the book by O.O. Boriskina: “cryptoclass is an implicit (that is having no special standard grammar indicators) language category implying the field principle of formation and consisting of the modeling core and modeled periphery. Cryptoclass constituent nouns seemingly do not share common features. However, the uniting basis for all the members of the cryptoclass is the similarity of their combinative potentials” [2: 64].

This definition can be exemplified with the following. The nouns *idea* and *object* are both members of the cryptoclass OBJECT because the noun *idea* denoting an abstract notion can combine with the verbs used to carry out actions with the small objects: *to drop an idea, to share ideas*, etc.

However, referring to the noun *idea* as the member of the given cryptoclass does not include it into the corresponding category OBJECT as a category requires “each member to have a certain set of features with non-member having no such features” [3: 16].

Category as well as cryptoclass are language manifestations of a cognitive activity but a category comprises elements paradigmatically and implies only intrinsic combinative power of elements whereas a cryptoclass comprises elements syntagmatically and implies also extrinsic combinative power of elements.

According to the principles of cognitive linguistics one of the structures providing mental categorization is a concept. Its language manifestation is cryptoclass because only through analyzing word combinations it is possible to study concepts. Therefore, the aim of this article is to analyze language material with the purpose of modeling conceptual grounds.

The given work presents the results of studying the authentic Russian and English texts in *alternative energy* sphere. The study has been carried out with the consideration of the following theoretical prerequisites:

1) scientific knowledge is based on common knowledge as “development of scientific-theoretical knowledge was preceded by the long-lasting stage during which people had been gradually accumulating experience, observations, production skills and conjuring up the overall image of the world in their labor activity” [4: 20];

2) the fact that scientific knowledge rests upon common knowledge confirms the idea that many terms included into the language of science are the result of metaphorical understanding of everyday experience; for example, such terms as *body* or *wave* have been borrowed from everyday life;

3) metaphorical understanding of everyday experience is carried out under the pattern suggested by G. Lakoff and M. Johnson in their book “Metaphors we live by”: “metaphorization implies interaction of two knowledge domains, that is source domain and target domain. In the process of metaphorization target domains are structured in terms of source domains resulting in metaphorical mapping or cognitive mapping” [5: 9].

The given work pays particular attention to WATER / ВОДА cryptoclass within which “the language modeling is possible due to the presence of metaphorical ... links between ... the core and the periphery” [2: 65].

“The choice of names of elements to be analyzed is explained by the degree of significance the corresponding concepts hold while shaping the linguistic knowledge in particular and cultural experience of the mankind in general” [1: 14]. The most frequently used expressions within WATER / ВОДА cryptoclass are those that denote 1) forms of water existence [6: 131] (*поток энергии, electric current*); 2) modes and peculiarities of water movement [6: 132] (*процесс протекает, протекающая реакция*).

From the point of view of cryptoclass modeling WATER / ВОДА cryptoclass comprises the core with water in the meaning of a moving mass whereas the periphery includes “the names of mental and physical world of a human the denotata of which are impossible to see” [2: 65].

ПРОЦЕСС – ЭТО ВОДА

*...разрушение системы энергоснабжения страны станет необратимым из-за... замораживания процессов топливодобычи.*

*Процесс протекает при температуре 300 – 450 C°...*

ВЕТЕР – ЭТО ВОДА

*При заднем расположении башня ... турбулизует набегающий на него **поток** (ветра – author’s note).*

***Поток** (ветра – author’s note), **затекающий** внутрь вогнутого ковша, **перетекает** через щель внутрь выпуклого ковша...*

ТЕПЛО – ЭТО ВОДА

*...**поток геотермального тепла** ... составляет примерно 0,06 Вт/м<sup>2</sup>.*

*... в качестве ... направления **теплого потока** выбрано направление*

ХИМИЧЕСКАЯ РЕАКЦИЯ – ЭТО ВОДА

*При этом **протекает** следующая **реакция**...*

*... реализуются следующие две **реакции, протекающие** примерно с равной вероятностью...*

ЭНЕРГИЯ – ЭТО ВОДА

***Поток энергии** солнечного излучения к Земле оценивается в 173 000 ТВт...*

*... тепловая энергия может рассматриваться как ... **источник энергии** для практического использования.*

ЭЛЕКТРИЧЕСТВО – ЭТО ВОДА

*На рис. 5.14 показана зависимость мощности, отбираемой у холодного резервуара, **P<sub>c</sub>** от электрического тока, протекающего через терморпару.*

*... если **ток течёт** в одном направлении...,*

By means of using ВОДА concept as a source domain the linguistic knowledge about the corresponding element reveals itself in the above mentioned contexts, namely nouns ПРОЦЕСС and РЕАКЦИЯ serving as target domains of the process of metaphorization “act

as subjects for the predicate *протекает*” [1: 44]; noun ЭЛЕКТРИЧЕСТВО is attributed by the participle; nouns БЕТЕР and ТЕПЛО are endowed with the form which is typical of water existence, that is *поток*.

The study of the thematically similar English texts with the purpose to elicit the language manifestations of element concept metaphors has also produced positive results. All in all, metaphorical modeling takes place under the same pattern as in the Russian language and target domains are represented by the same concepts.

ENERGY IS WATER

*A continuous **flow of energy** is received by the Earth from the Sun...*

*... the radiant **energy flux** received per second by a surface ...*

HEAT IS WATER

*... upward **flow of heat** from the Earth's interior to the surface...*

*The **heat flux** is the largest in the mid-ocean ridges ...*

WIND IS WATER

*The efficiency ... depends on the dynamic matching between the rotor and the **wind stream**.*

*By the removal of kinetic energy, the velocity of **flowing wind** decreases.*

ELECTRICITY IS WATER

*The **electric current** is caused due to these charges ...*

*The generated **photocurrent flows** in a direction opposite to the ... **dark current**.*

Nevertheless, some regularities can be underlined while analyzing the English texts.

First, the usage of words which in the Russian language have such equivalents as *поток, течение, струя* indicates the cases of structuring in terms of WATER element; in particular abstract entities (ENERGY, HEAT, ELECTRICITY) and nature phenomena (WIND) are endowed with the forms of water existence. The difference between the English and the Russian metaphor language manifestations lies in the fact that in Russian texts the forms of water existence are manifested in the words having the same root *ток* и *поток* whereas English texts present quite wide synonymic row *flow, flux, stream, current*.

Second, conceptual metaphor with WATER as the source domain manifests itself in English texts mainly in word combinations “with substantive classifiers which place the nouns in the position of uncorrelated attributes” [1: 14], namely in noun phrases with the preposition *of* (*flow of energy, flow of heat*), or in attributive noun groups (*energy flux, heat flux, wind stream*). The usage of verbs or adjectives endowing an entity with an action or feature typical of WATER element has been traced for a small number of metaphor language manifestations (*flowing wind, photocurrent flows*).

What concerns the Russian language, substantial number of metaphor language manifestations involves verbal classifiers among which there are verbs proper (*ток течёт, поток перетекает*) and participles (*затекающий поток, протекающая реакция*). This confirms the idea that the Russian scientific tradition relies on metaphorical understanding of actions performed by abstract entities (for example, defining the manner of movement through metaphor) while the mind of an English native speaker tends to metaphorically nominate an entity and attach certain features to it.

Third, among all English metaphor manifestations no contexts have been identified for conceptual metaphors PROCESS IS WATER and CHEMICAL REACTION IS WATER unlike Russian metaphors ПРОЦЕСС – ЭТО ВОДА and ХИМИЧЕСКАЯ РЕАКЦИЯ – ЭТО

ВОДА language manifestations of which are presented in this article. Taking into account the data acquired as a result of empirical material analysis we may suggest that more probably for the English language structuring of processes in terms of elements is not characteristic. Instead, ontological metaphor ABSTRACT ENTITY IS AN OBJECT is more preferable for the cases of processes and reactions.

*Nuclear reactions ... may take place spontaneously.*

*The fusion process can take place when two nuclei approach each other...*

Word combination *to take place* deals with the idea of occupying some space. Thus, it is possible to speak about objectification of an abstract entity, conceiving it as a physical object through indicating its certain location in space with respect to other physical objects.

On the basis of the analysis of the empirical material and with the consideration of the guiding theoretical prerequisites the following conclusions can be drawn.

To describe laws, theories and rules both English and Russian alternative energy spheres include into their apparatus the terms which are the result of metaphorical understanding of practical experience of interaction with the surrounding objects. One of the instances thereof is the structuring of units of scientific narration in terms of WATER / ВОДА element.

The process of metaphorical understanding of scientific notions involves WATER / ВОДА concept as the source domain due to which diverse features are ascribed to target domains being either abstract entities or nature phenomena (ENERGY / ЭНЕРГИЯ, WIND / ВЕТЕР etc.).

Both in English and Russian contexts WATER / ВОДА concept and the corresponding cryptoclass as its language-level counterpart manifests itself in various combinations (the following is O.O. Borisкина's terminology – *author's note*), that is in the positions of subject, object, as verbal and adjectival classifiers.

The analysis of language manifestations of WATER / ВОДА concept in Russian and English texts has shown that the majority of examples display concurrence in the ways of metaphorization, namely in the usage of structural metaphor AN ENTITY IS WATER / НЕЧТО – ЭТО ВОДА except the concepts PROCESS / ПРОЦЕСС and CHEMICAL REACTION / ХИМИЧЕСКАЯ РЕАКЦИЯ. Unlike the Russian language where these concepts can be structured in water terms, the English metaphorization tradition does not have such model. Instead, the given concepts tend to be modeled ontologically through metaphor ABSTRACT ENTITY IS AN OBJECT.

In conclusion we would like to mention that the awareness about the mechanisms of conceptual “structuring of our views of elements enables us to determine what aspects of the phenomenon under categorization are seen by the speech community as the most essential and relevant” [1: 81] which promotes deeper understanding of semantic processes and trends in language development.

## ЛИТЕРАТУРА

1. Борискина О.О. Теория языковой категоризации : Национальное языковое сознание сквозь призму криптокласса / О. О. Борискина, А. А. Кретов; Воронежский межрегион. ин-т обществ. Наук. – Воронеж: Воронежский гос-й ун-т, 2003. – 209 с.
2. Борискина О.О. Моделирование синтагматической динамики слова // Вопросы когнитивной лингвистики. – 2008. – № 3. – С. 64 – 69.

3. Langacker R. W. Foundations of Cognitive Grammar. – Volume I: Theoretical prerequisites. – Stanford: Stanford University Press, 1987. – 540 p.
4. Филатов В.П. Научное познание и мир человека. – М.: Политиздат, 1989. – 270 с. – (Над чем работают, о чём спорят философы).
5. Лакофф Дж., Джонсон М. Метафоры, которыми мы живем: Пер. с англ. / Под ред. и с предисл. А.Н Баранова. Изд. 2-е. – М.: Изд-во ЛКИ, 2008. – 256 с.
6. Складарская Г.Н. Метафора в системе языка. – 2-е изд., стереотипное. – СПб.: Филологический факультет СПбГУ, 2004. – 166 с.

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**СУБСТАНТИВНЫЕ БИНОМЫ  
С ОПРЕДЕЛИТЕЛЬНЫМИ ОТНОШЕНИЯМИ МЕЖДУ ЭЛЕМЕНТАМИ  
(на материале поэзии Николая Клюева)**

*У статті розглядаються субстантивні біноми з означуваними відносинами з точки зору семантичних відносин між елементами (характерологічних, метафоричних, порівняльних), описуються означувані компоненти біномів та ті, що означають (на матеріалі поезії Миколи Клюєва).*

**Ключові слова:** *поетичний текст, субстантивний біном, компонент, що означає, означуваний компонент, метафора, порівняння, епітет.*

*В статье рассматриваются субстантивные биномы с определительными отношениями с точки зрения семантических отношений между элементами (характерологических, метафорических, сравнительных), описываются определяемые и определяющие компоненты биномов (на материале поэзии Николая Клюева).*

**Ключевые слова:** *поэтический текст, субстантивный бином, определяющий компонент, определяемый компонент, метафора, сравнение, эпитет.*

*The article deals with substantival binomials with attributive relations from the perspective of semantic relations between their components (characterizing, metaphoric, simile). Binomials' attributed and attributing components are described (based on Nikolay Kluyev poetry).*

**Keywords:** *poetic text, substantival binomial, attributing component, attributed component, metaphor, simile, epithet.*

В русской поэзии широко употребляются парные субстантивные сочетания, построенные по модели «существительное – существительное», например, *плакун-трава, зайчонок-луч*. Парные дефиснооформленные сочетания существительных такого типа мы называем субстантивными биномами.

Между элементами субстантивных биномов возникают отношения разного типа: определительные (*девушка-голубка, страдалец-отец*); синонимические (*путь-дорога*,