

The sources of metaphORIZATION and peculiarities of the metaphORIZATION process in medical terminology

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Abstract. The present article deals with the source of metaphORIZATION and peculiarities of this process. Metaphor as a mechanism of learning the world as well as effective way of formation of terminological units and rethinking of previously created ones, particularly in medical field, is explored. Metaphor through the use of imagery is examined as verbalized way of thinking and a powerful tool of creation of the world language picture.

Keywords: *metaphor, anatomical terminology, scientific term for the metaphorical naming, strategy of metaphORIZATION.*

The problem of metaphor functioning in such highly specialized field of scientific knowledge as anatomical terminology is especially noteworthy. Metaphor is one of the most effective ways of formation of terminological units as well as reinterpretation of previously created ones. Terms which are based on metaphors have an extremely wide sphere of functioning. They allow to reveal the peculiarities of human perception of the world through the prism of collective and individual knowledge. The metaphor indicates a certain stereotype of human thinking as reflected in the conceptual and linguistic pictures of the world. Medical terminology system keeps both the archaic fragments of naive perception of the world and the results of the latest researches, records historical changes of the sources of metaphORIZATION. Analysis of the Latin medical terms which are metaphors allows us to determine the dynamics of the science development as well as features of the scientific metalanguage formation at its initial stage.

According to the definition by O. Zubkova [4, p. 79], medical term-metaphor is the word or phrase born in professional discourse and individually created. This term is used in lexical entry and formalizes the process of extrapolation of lexical unit of literary discourse to another (academic) semantic space. For instance: *facies lunata* "lunate surface", *lacus lacrimalis* "lacrimal lake". Anatomical terminology is highly specialized sphere. It presents the detailed description of body parts as well as structure of the human body.

One of the reasons of formation of metaphorical naming is considered to be the prohibition against dissection of human body to study its structure and pathologic features in old religious beliefs. Religious taboos and lack of reliable information led to the formation of anatomical terms of associative nature. They primarily focused on images of animated and inanimate nature and consequently were nature-morphic (the Latin word *natura* "nature" and Greek. μορφή "form"). The formation of metaphorical transfer scheme and choice of source area is affected by anatomical specificity of the industry (for example, therapy or pharmacology). Anatomy is characterized by dominance of visuoperception and static fixing of the object which is to be described. N. Tsisar identifies eleven lexical-semantic groups as the source of terminologization in the Ukrainian language medical terminology: the names of everyday items; the names of tools and their parts or elements; the names of buildings, structures, premises or their elements; the names of the receptacle; the names of forms of relief; names of plants, fruits or

their parts; names of animals and parts of the animal organism; the names of person by the profession or occupation; names of clothes, shoes; the names of jewelry and their elements; the names of natural phenomena [11, p. 10].

Apart from these lexico-semantic groups we consider it necessary to add a group of somatisms with diminutive value for the reason that in medical terminology as well as in anatomy there is a tendency to the designation of the internal organs and their parts by names of other organs and human body parts: for example, ventricle → "right ventricle" – *ventriculus cordis dexter*.

All lexico-semantic groups of common words are the basis of the metaphORIZATION of professional medical language units. Among them the most common in Latin anatomical terminology are the names of animals and animal body parts (zoomorphic metaphors): *ala cristae galli* "ala of crista galli"; names of plants, fruits and their parts (phytomorphic metaphors): *bulbus oculi* "eyeball"; landforms names, elements of the earth surface (spatial metaphors): *area cochlearis* "cochlear area".

During the semantic analysis process of the anatomical metaphorical terms based on the association "the object of the natural world" → "the human body" we identified the most productive sources of metaphORIZATION. The nature is the universal source among them and the system of the Latin anatomical names is the target field. The metaphorical image of natural objects and phenomena correlates with the system of naming of anatomical objects based on common visual characteristics (form, structure, size, overall appearance) or upon the basis of functional similarity (mechanism of action, purpose). In modern cognitive linguistics similar terms, metaphors, are considered as the result of human cognitive activity since they represent the fragments of a naive picture of the world and peculiarities of ancient peoples' worldview. To determine the direction of the thought movement when creating a metaphorical term we used the term *strategy of metaphORIZATION* proposed by S. Mishlanova [8, p. 134]. Expounding the ideas of S. Mishlanova, we identify the *strategy of metaphORIZATION* as the way of information processing which manifests itself as the formation of linguo-cognitive structures of the metaphorical models.

According to the strategy of metaphORIZATION, the metaphorical anatomical terms with a common source of "nature" for "statics/dynamics" are divided into two groups: "animated"/"inanimate nature." Animals, plants and people belong to the objects "of animated" in accordance with the concept of our study. The landscape, the

heavenly bodies as well as artifacts are among the objects of "inanimate nature".

The associations which link the individual with the world of animals and plants are the most significant. This comparison allows to determine the close connection that exists between human anatomy and the structure of some representatives of the world of animals and plants, the existence of a single biosystem where all living organisms coexist.

A visual "image" of the animal whose specific features are transferred to the structure of the human body is the source of zoomorphic metaphors (ζῷον "animal" and μορφή "form"). For example, *ala vomeris* "ala of vomer", *lobus caudatus* "caudate lobe", *squama frontalis* "squamous part". The names of the main parts of the plant as well as certain stages of their development are considered to be the source of phytomorphic metaphors. For instance, *radix* "root", *cortex* "cortex", *ramus* "ramus", *folium* "folium", *fructus* "fruit". Consequently the external and internal structure of the human body is conceptualized as the structure of living organisms of plant and animal life. Metaphors of this type tend to have ethnic and cultural character related to the existence of particular zoomorphic and phytomorphic codes of culture in language. Therefore, it is logically to analyze the metaphors of this kind by means of comparative way.

Zoomorphic metaphors have been extensively studied in various European languages. It allowed to formulate the cognitive basis for the thematic division of the units of this subject field (T. Vendina, A. Dubkova, H. Levina, L. Moiseyeva, A. Ryzhkyn, D. Setaro, T. Ohdonova, etc), their predicative character. The conditions of actualization of semantic components of metaphorical naming in language usage (M. Cheremisina) as well as studies of the dynamics of metaphorical transfers of zoonym within the framework of the naming theory (E. Vasilyeva, I. Golubovska, E. Katsytadze, etc) were also determined.

This visual "doubling" caused firstly by metonymic and then by metaphorical transfers involves partial overlap both of source and target areas. The secondary naming is motivated by the association on the basis of formal resemblance: "part of the external or internal organization of the human body" → "part of human organ or bone, similar to that of the organization of the human body". The common denominator is small size, compared to the names of source area. For this reason most anthropomorphic metaphorical terms of this group are diminutives. In relation to semantics anthropomorphic metaphorical terms are divided into two groups. The first group derives from the names of internal organs: *ventriculus* "ventricle", *cerebellum* "cerebellum" and the second one from the names of certain parts of the human body: *pediculus* "pedicle", *crus* "leg", *capitulum* "capitulum", *auricula* "auricle", *lingula* "lingula".

The nature division into "animated" and "inanimate" is relative as the nature around us is called "biosphere" that is the Earth's sphere where the life exists (Greek βίος "life" and σφαῖρα "sphere"). Biosphere, in turn, is divided into lithosphere (Greek Λίθος «rock» and σφαῖρα "ball"), hydrosphere (ὑδωρ "water" and σφαῖρα "ball") and atmosphere (Greek Ἀτμός "breath," "vapor" and σφαῖρα "ball"). In compliance with this division, we have identified various sources of of metaphorization related to inanimate nature, namely, landscape (objects both of lithosphere and hydrosphere) and astronomical phenomena.

The most common objects of inanimate nature which serve as the background for a metaphorical naming in anatomy are these ones based on the names of objects of the lithosphere as well as the hydrosphere. For example: *fovea* "fovea", *tuber* "tuber", *tuberculum* "tubercle", *insula* "insula", *antrum* "antrum", *area* "area", *canalis* "canal", *ductus* "duct", *lacus* "lake", *lacuna* "lacune", *rivus* "pathway", etc. Astronomical objects as a source of metaphorization is a rare phenomenon for anatomical terminology. It is limited to two objects of the atmosphere: *lunula* "lunule" and *iris* "iris".

Apart from the natural environment (lithosphere, hydrosphere, atmosphere) there is also artificial or man-made environment (ἄνθρωπος – man, and γένος – the origin) which includes artefacts created in the process of the civilizational development. Artefacts (lat. ars, artis – art and factus, a, um – made), which are the source of metaphorical naming in anatomy, mostly relate to everyday items, building and construction work. For example: *cingulum* "cingulum", *fibula* "fibula", *falx* "falx", *labyrinthus* "labyrinth", *aquaeductus* "aqueduct", *columna* "column", etc.

In view of this, we have identified six types of nature-morphic metaphors in the Latin anatomical terminology, depending on the source of metaphorization. They are the following:

- 1) zoomorphic metaphor,
- 2) phytomorphic metaphor,
- 3) anthropomorphic metaphor,
- 4) the landscape metaphor,
- 5) astronomical metaphor,
- 6) anthropogenic metaphor.

On the other hand, the stylistic characteristics of the metaphor indicate the impossibility of its functioning in the professional language, since the use of the metaphor is contrary to the basic requirements of professional communication, namely: neutrality of speech, etc. Nevertheless, a lot of terms, functioning in medical professional language at large and as a part of its anatomical term system, are formed by means of metaphorization.

The nature of this phenomenon is due to the peculiarity of the cognitive processes associated with the formation of the science language: "metaphor meets a person's ability to catch and create similarity between very different individuals and classes of objects. This ability plays a huge role in both practical and theoretical thinking... Metaphorical image frees up space for the concept due to the emphasis of the semantic process" [2, p. 380]. Sometimes a metaphor itself can more accurately express the essence of the described concepts and create the most accurate term to define: "Symbolization and metaphorization of scientific language occurs as a reaction to academic discourse on the problems of competent statements of the achievements of cognitive thoughts" [1, p. 8].

Terminological systems serving different professional languages, show different prevalence of metaphorization as a way of term formation. A detailed analysis of the anatomical term system suggests that metaphor is one of the key methods of terminologization in this sphere. Term-metaphor is a verbal representation of the living, active ideas and professional knowledge that form an indivisible unity. And this is the main peculiarity of term-metaphor [4, p. 143]. Scientific term, particularly medical one, which is based on metaphor, combines rational, logi-

cal and language knowledge organically connected with the professional activity. Metaphorization is expanding due to the development of speech. Actualization of ontological entity of metaphor involves the activation of cognitive, psychological, emotional, stylistic, ethnic, and subjective aspects of the mental interpretation of reality.

Terms formed by means of metaphorical terminologization are considered to be motivated: "motivation of the words is of great importance in the formation of the plan of expression of terms which derives from words of natural language" [10, p. 89]. Consonance of the term and its value is achieved due to the motivation. Such consonance occurs in "more or less way of conformity between the inner form of the term and reported concept [6, p. 18]. It is worth distinguishing between the etymological inner form of the word (it is determined by special studies at a certain stage of the language development) and usual internal form (the study of functioning of lexical unit at certain point) [3, p. 64]. The study of metaphors, which are the basis of terms borrowed from Latin, suggests that the transition to another language may be accompanied by loss of the initial motivation, for example *fascia* "fascia". The transition to the semantic field of anatomy was held on this model: "a bunch of rods with an ax" → "clusters of muscle fibers, or "a shell of dense connective tissue" that covers the muscles, some internal organs, blood vessels and nerves.

In the Latin language the word *fascia* had several meanings: a bandage, a bunch of rods, etc. The word was used more often in the latest sense. A bunch of rods, corded up with leather strap, with an axe in the middle was familiar to the officials and punishing authority of the highest Roman magistrates. The image of the fascia is often shown in heraldry of the new time. In Italy in the era of fascism fascia with ax was a symbol of the reactionary state power (hence the term "fascism") [12, p. 25]. The terms of various time and area of operation (fascia, fascism) have a common origin. Different ways of metaphorization and application, respectively, of other metaphorical models are the source of differences and gradual semantic transformation.

Motivation of the term formed by means of metaphorization is considered to be the way of perception of transfer direction by native speakers of special language. Therefore, "when we can explain the choice of the method in which the language unit indicates the general concepts, then we are dealing with a motivated term" [7, p. 43]. Motivation is a positive consequence of the metaphor usage. Nevertheless, it is not the primary method of term formation. But motivation facilitates the memorizing of the term, emphasizes its relationship with other terminological units, ensures its stability [10, p. 30].

As to the linguistic level we can distinguish three kinds of motivation: 1) symbolic (semiotic) – unmotivated words are not used in the language; 2) formal (word-formative); 3) meaningful (intentional) [3, p. 81].

It is possible to examine motivation feature as the core meaning of the word. On the other hand it is not represented in componential structure of meaning, common word and term (e.g., similarity in form). Depending on the place of motivation feature in the semantic structure, terms are divided into: completely motivated, partially motivated and associatively motivated [11, p. 8].

Metaphorical "load" of the various components of the term is of great importance as a solving way of problems regarding metaphors in anatomical terminology. Metaphor as a method of term formation can have either narrow meaning or broad one. In the first case the terms formed by metaphorization are those created by means of rethinking of all components of the term. In the later case it is necessary to accept a partial metaphorization, that is, rethinking of separate terminoelements. Therefore, according to O. Superanska, "the concept of terminoelement should be applied only to the Greek-Latin components of the artificially created terms" [10, p. 102]. A broad interpretation of the concept of "terminoelement" covers not only words, but also lexemes as the components of collocations.

We are in position to stick to broad interpretation of the term "terminoelement." In fact, one of the most active trends in modern terminology is the predominance of multi-component categories [5, p. 3]. V. Lejchik notes that "the basic terms in anatomy can act as terminoelements in the creation process of terms of specific term system" [7, p. 127]. For example, the term *capsule* derived by means of metaphorization is the element (syntactically main/reference component) for thirteen terms, "fibrous capsule" *capsula fibrosa*, "capsule of lens" *capsula lentis*, "capsule of cricoarytenoid joint" *capsula articularis cricoarytenoidea*. Medical terminology is generally characterized by a high level of nominative productivity. It means that a single term may have more than twenty species of terminoelements [11, p. 11]. Apart from this medical items may have a significant number of specifiers, which transforms the essence of specified objects in the most suitable way.

Types of terminologization regarding to metaphorical component are analyzed in some studies (e.g., N. Tsisar) [11, p. 11]. Supporting element of the composite term is considered to be the main metaphor: *musculus abdominis* "muscle of abdomen". Metaphorization of the adjective as the element of multicomponent term is quite common: *vena portae* "portal vein". In this case metaphorical component is outside of term phrase. Sometimes all the components of term phrase have metaphorical load: *chorda tympanica* "chorda tympani", *fimbria hippocampi* "fimbria of hippocampus".

We examine *metaphorical component* (MC) as the process of explication of the metaphorization strategy on lexical-semantic language level in the target area.

The question of belonging of attributive phrases which have comparison meaning to the metaphorical terms is under discussion. Such compound terms have attributives expressed by adjectives which are formed either by means of suffixoids *-formis*, *e* and *-ideus*, *a*, *um* («similar, form»): *os pisiforme* "pisiform", *area amygdaloidea anterior* "anterior amygdaloid area" or proper adjective with the meaning of accessories: *sulcus lunatus* "sulcus lunate", *nervus piriformis* "nerve to piriformis". According to V. Prokhorova categoricity, immediacy of comparison and the absence of any formal indication of comparison are the main characteristics of term-metaphor. This is the basis for distinguishing between metaphors and comparison [9, p. 44]. Our study uses the concept of *metaphorical component* (MC) which may be present both in the nuclear and in the peripheral part of the term. Mor-

phemes *-formis, e* and *-ideus, a, um* are involved in creating of metaphors.

Anatomical terms formed by metaphorization can be classified according to different criteria. Apart from degree of motivation and the type of metaphorical component, they should also be analyzed by means of the nature of similarity; belonging to the lexical-semantic groups; the nature of movement [11, p. 3].

In general, the present study shows that metaphor is inherent in the science language since a large number of terms, that function in medical and particularly in professional language of anatomy, are formed by means of metaphorization: the figurative meaning is erased over time and the newly formed term functions as a new lexical unit.

REFERENCES

- [1] Ableyev S.R. The discourse approach in consciousness research: term against metaphor / S.R. Ableev. // Journal VHU. Series: philology. Journalism. – 2010. – №1. – P. 5-8.
- [2] Arutyunova N. Discourse and Metaphor / N. Arutyunova // Theory metaphor; [Collections of articles] Society. Ed. N. Arutyunova and M. Zhuryanskaya. – Moscow: Progress, 1990. – S. 5-32.
- [3] Dyakov A. Fundamentals of terms: semantical and sociolinguistical aspects / Dyakov A., Kyyak T., Kudelko Z. – K: CM Akademia, 2000. – 218 p.
- [4] Zubkova O.S. Medical metaphor and medical metaphor-term in the individual lexicon (experimental research) / O. Zubkova // Knowledge. Understanding. Skill. Scientific journal of the Moscow Humanitarian University. – 2010. – № 1. – P. 140-145.
- [5] Kim L. Features analytism in terminological Russian language / L. Kim, T. Pristayko. - Dnepropetrovsk: Porohy, 2008. – 147 p.
- [6] Leychik V. Linguistic problems of terminology and the scientific-technical translation. Part II / V. Leychik, S. Shelov. – M.: 1990 – 80 p.
- [7] Leychik V. Terminology: subject, methods, structure / V. Leychik; Ed. 3rd. – Moscow: Book House LCI, 2007. – 256 p.
- [8] Mishlanova S. Metaforizatsija concepts "health / normal" and "disease / pathology" in the medical texts / S. Mishlanova // Language consciousness and image of the world. – M.: "Nauka", 2000. – P. 133-148.
- [9] Prokhorova V. Russian terminology (lexical-semantic education) / V. Prokhorova. – M.: Faculty of Philology of Moscow State University, 1996. – 125 p.
- [10] Superanskaya A. General terminology: Questions of theory / Superanskaya A., Podolskaya N., Vasilyeva N. – Moscow: Book House "LIBROKOM", 2012. – 248 p.
- [11] Tsisar N. Secondary nomination in the system of Ukrainian medical terminology: Thesis. Philology Science: spec. 10.02.01 "Ukrainian language" / N. Cisar. – Lviv, 2009. – 18 p.
- [12] Chernyavskyy M. Latin language and fundamentals medical terminology. – M.: "Shico", 2007. – 448 p.

Источники метафоризации и особенности процесса метафоризации в медицинской терминологии

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Аннотация. В статье исследуются источники метафоризации и особенности этого процесса, исследуется метафора как механизм познания окружающего мира, как эффективный способ формирования терминологических единиц и переосмысление ранее созданных, в частности в медицинской сфере. Метафора, благодаря образности, рассматривается как вербализованный способ и действенный инструмент сотворения языковой картины мира.

Ключевые слова: *Метафора, анатомическая терминология, научный термин, метафорическая номинация, стратегия метафоризации.*