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Metaphor is a productive way in the formation of medical terminology

In the article metaphorization as a way in the formation of medical terminology was analyzed. The main attention is paid to the structural and semantic analysis, the main thematic groups of metaphorical terms are highlighted here. On the basis of the semantic analysis on the main trends in the formation of metaphor terms in the medical field were revealed. Metaphorical transfer of names in the terminological system is noted regularly and is determined by the constant development of the formation of new names and meanings of medical terms through the scientific rethinking of well-known words. It is revealed that medical terms are characterized by metaphorical, holistic, generalized and figurative meaning, which are based on metaphorical rethinking resulting from associative and figurative thinking. Metaphorization is the most important and productive source of enrichment of the medical terminological foundation.

Keywords: metaphorization, terminological system, terminological metaphor, medical terminology, semantics, structure.

A language quickly and flexibly responds to all changes in the scientific field, a terminological system becomes the result of such intensive development. In modern linguistic science, metaphorization as one of the most important cognitive processes is a productive semantic source for the formation of terminology.

The material of our study is terminological metaphors, selected by the method of continuous sampling from the Dictionary of Medical Terms, edited by B.V. Petrovsky [1; 464].

It is known that the doctrine of metaphor originates from the works of the ancient philosopher Aristotle, who put forward and developed a system of concepts and judgments related to metaphor. A more detailed presentation of the theoretical question of metaphorization is given in the works of J. Lakoff and M. Johnson, who presented the theory of cognitive metaphor. Theoretical propositions related to various aspects of the study of metaphorization were further developed in the scientific works of many linguistic scholars. Scientifically grounded and thoroughly developed fundamental material has been accumulated in modern linguistic science in the theory of metaphor (N.D. Arutyunova, V.N. Telia, E.O. Oparina, V.G. Gak, G.N. Sklyarevskaya and others).

Recent studies have convincingly shown that metaphor is an object of study not only of artistic discourse, but also of terminology. The focus of scientists is metaphor, and not only as a stylistic tool or artistic device, but mainly as a way of nominating, creating new meanings, comparisons in creating terminological units. Moreover, it became obvious that only in the way of an integrated linguistic approach to metaphorization, at the intersection of linguistics with other sciences, it is possible to reveal the role of deep structures caused by an associative form of thinking.

The terminological system provides a fertile ground for observing metaphor, which deserves deep scientific study. In recent years, the study of metaphorization in medical terminology has acquired particular relevance and significance. Interesting observations in this area are contained in the works of contemporary researchers (M.V. Ozingin, O.S. Zubkova, E.V. Smirnova and others).

From a linguistic point of view, the metaphor is remarkable: it revives speech, increases its expressiveness. As it is known, metaphorical expressions are able to acquire a new meaning, sometimes significantly different from the original, to acquire new stylistic nuances. The metaphor is based on the associative nature of human thinking, the transfer of the name from one object to another according to the similarity or presence of signs of these objects, followed by highlighting the most significant feature at the moment. Metaphor as a transfer of the name based on the similarity of signs of concepts is semantically based on comparison [2; 41].

In metaphorical terms, the comparison highlights important elements: the subject of comparison, i.e. the object that is being compared, the object of comparison, which serves for comparison and the basis for comparison is a sign of the objects being compared. Metaphorization performs two functions: nominative and evaluative, defining and naming a new concept with a familiar word. According to N.D. Arutyunova, metaphor is one of the ways of expressing meaning, which exists along with the use of words in their direct and exact sense, but is much less convenient and effective [3; 2].

The intensive development of modern medical terminology has led to the emergence of more new terms. Scientific medical terminology expands through neoplasms, rethinking the meanings of already existing stable combinations, leads to the use of terms in a metaphorical meaning. Terminological metaphorization is the most productive way to enrich the scientific vocabulary. The productivity of metaphorical transformation in terminology is explained, in our opinion, in an effort to express thoughts with other understandable, bright forms, to find appropriate language tools.

Indicative in this respect are the semantic transformations represented in medical terminology. The presence of metaphorical terms in medicine is justified by the fact that the structure of the human body itself is designed in such a way that it promotes associative links with the surrounding reality and the emergence of metaphorical names. As it is known, to create metaphorical terms, objects and phenomena are used that are capable of acquiring a new semantic meaning and accuracy that is significantly different from the original. As noted by V.I. Maslov's «metaphor at the end of the twentieth century, appears to be more complex and important phenomenon», «it permeates the language, culture, science, life, the whole world» [4; 87]. The following important characteristics are inherent in the metaphor: it is an instrument of thinking and knowledge of the world, it reflects fundamental cultural values, for it is based on a cultural-national worldview» [4; 90].

Our analysis showed that, according to the structure, medical metaphorical terms are an indivisible combination of two or more independent words: *the head process, the gastric bed, the roof of the rhomboid brain, the lymphatic pharyngeal ring*, etc. The most frequent and productive are named combinations, the most dominant and common structural model is the name combination noun and adjective in nominative case (*abdominal wall, bronchial tree, neural crest*, etc.), the combination of the noun in nominative case of the item with a noun in genitive case of the item (*neck of a tooth, a frenum of tongue, porta hepatis* and others). Metaphorical meanings can develop in both forms of the number of nouns. The use of singular forms in the scientific style to designate a whole class of objects or phenomena of reality with common features is very productive and widespread. Such use is the traditional and functional standart of scientific medical terminology. For example, *auditory tube, sunstroke* and others.

Linguistic observations show that metaphors with *the symptom* and *syndrome* components are widely used in medical terminology. *Symptoms* and *syndrome* components make up a number of metaphorical terms. The greatest number of terms with *the symptom component* and *syndrome* in dermatology, ophthalmology, psychiatry. For example, the following metaphoric terms are used in ophthalmology: *doll's eye sign, white pupillary reflex, lacrimogustatory reflex*, etc.; in psychiatry: *gramophone sign, monologue sign, Van Gogh syndrome, manager's syndrome*, etc.; in orthopedics: *a symptom of a fan, a symptom of a knee cup, a symptom of a coin count*, etc.

In the development of the theory of metaphor, scientists proceeded from different approaches to their classification. The most scientifically justified is the classification of N.D. Arutyunova, which was established in the linguistic literature and continues to be the most common, is represented as follows: a) nominative, b) figurative, c) cognitive, d) generalizing. The developed classification can be considered a single basis in the analysis of the terminological metaphor.

The analyzed material allows us to state that metaphorical transference is characteristic and typical for a number of groups of medical terms. The collected material was systematized and classified into the following subject groups: 1) household, 2) floristic, 3) zoomorphic, 4) anthropomorphic, 5) geographical, 6) geometric, 7) colour naming.

The most numerous and productive group of metaphorical terms is household vocabulary, which is based on a metaphorical transfer of names based on the identity of external signs, the form of comparison with household items and human environment. From a semantic point of view, household metaphor is mainly the names of various household items.

Among the many household objects and phenomena surrounding reality, a certain form is selected, the structure of the object, which results in the emergence of similar figurative associations, the similarity between household objects that already have a name, and a new one that needs to be called most accurately in medical terminology. Terminological metaphors directly correlate with the phenomena of the objective world, possess metaphorical semantics. Within this group, it is possible to distinguish subgroups that characterize comparisons with everyday objects, their elements and details:

- a) dishes and its types: *eye cup, optic cup, bone scraper*;
- b) clothing and its details: *heart sac, splenic recess*;
- c) household items: *anatomical snuffbox, bone lock* and others;

- d) food, drinks: *sebum, bone meal, cartilage minced*, etc.;
- e) tools and objects of labor: *uncinategyrus, tendon spindle*, etc.;
- f) jewelery and accessories: *obstetric watches, crural ring, rachitic bracelets*, etc.;
- g) tissue and its types: *muscle fiber, bony tissue, olfactory filament*, etc.

It should be noted that household metaphor is, in comparison with others, dominant. The productivity of the metaphorical transformation of terminological phraseological units occurs, in our opinion, with external similarities between objects and the anatomical structure of a person, or when they have a certain hidden common feature. Thus, the name of a particular household item becomes the name of a sustainable combination of terminological nature.

A special group is the floristic metaphor, which includes the main parts of plants reflecting the stages of its development: *the abdominal stalk, bronchial tree, eyeball*, etc. The presence of more floristic metaphors is not accidental, since the world of wildlife constantly surrounds a person, is an inseparable connection with him, and language as a special specific type reflects the world around us through our sensations. As it is known, many organs of the human body are based on the similarity with the plant world. For example, the terminological metaphor of *the eyeball* is built on the similarity of form. The most frequent and common are the metaphoric expressions associated with the components of *the branch, the bark, the root, the appendix, the stem*, which is used in anatomical terminology. In the composition of these components, semantic transformations and associative links with plant segments are transmitted. For example, the anatomical term *bronchial branches* is built by metaphorical transfer based on the similarity of the structure of a human organ, where the branches are bronchi and compared with the branches of a tree having an oblong branched shape. Such metaphorical units are numerous in medical terminology: *labial branches, dental branches, nasal branches*, etc. The lexical item in the terminological combination is compared with a minor branch extending from the main part of something: *the temporal process, the orbital process, the head process*, etc. In a wide range of terminology metaphors have figurative sense, which is based on the form and appearance: *the coracoid process, the xiphoid process, the styloid process*, and others. The meaning of words in the analogy is compared with the main part of the tree growing up: *femoral trunk, lumbosacral trunk, pagan-facial trunk*, etc. Numerous anatomical terms that are identified with the outer part of plants: *cortex of hair shaft, the cerebral cortex, renal cortex*, etc. The word *root* is high-frequency in the terminological system and correlates similarly with earth-ball and internal part of the plant, with the base: *root of the hair, root of the tooth, root of the tongue* and others.

The zoomorphic metaphor (the names of animals, birds, insects, fish) occupies an important place in the medical terminological system and gives rise to a large number of associations, their use is intensified and expanded in the transfer-characterizing values associated with generalized evaluation qualifications. As a rule, the source of the formation of a zoomorphic metaphor is the body parts of animals, birds, which are conditionally transferred to humans. Zoonymis, based on real objective qualities of animals, is a semantic motivation, an internal form of comparison: *bovine eye, cleft palate, bovine heart, cat's ear, rabbit fever, leonine facial, harelip, tiger heart, macacus ear, frog belly*, etc. For example, a frog belly — «belly with a flabby abdominal wall, bulging on the sides of a patient lying on his back; observed with weakness of the muscles of the lateral abdominal walls, for example, children with rickets». Names of animals are often used to characterize a person. According to our observations, out of a significant number of names of human body parts, the most productive somatic components in medical terminology are *eyes, hands, lips, ears, and heart*. As is known, the metaphor does not lose its cultural identity. Numerous associations give rise to figurative expressions in the field of medicine, their basic lexical meaning is accompanied by expressive nuances that convey, as a rule, a disapproving, negative, ironic attitude characteristic of the animal world: *goose gait, mumps virus, canine fossa*, etc. For example, the metaphor of *the mumps virus* makes it possible to determine the estimated characteristic, the disease is called *mumps* in its external expression in the form of a swollen neck, like a pig. Among the medical metaphors there is an expression like *a goose gait*. The basis of this expression is a comparison: the gait of a sick person is compared with a goose: «a gait with a body overrun from side to side; observed with paresis of the deep muscles of the pelvis and hip flexors, for example, with progressive myopathy, residual effects of infantile paralysis».

According to our observations, the most commonly used in medical terminology is the zoomorphic metaphor with sound symbols, they are characteristic of representatives of the animal world, are conditionally transferred to the physical state of a person and are found in describing various symptoms and diseases: *mouse squeak, purr, cat's cry syndrome*, etc.

The names of birds, habitable spaces and insects also have a broad associative sphere in medical terminology: *goose skin*, *bird face*, *fish-mouth*, etc. The presented metaphors get a new meaning, transferred to them by similarity of phenomena or their connection. The next group is an anthropomorphic metaphor, the source of which is the physiological characteristics of people, the names of body parts and the properties of a living organism. The number of anthropomorphic metaphors includes the terms that designate in medicine the names of parts of the human body and the body of animals, their internal organs: *the laryngeal ventricle*, *dorsum sellae*, etc.

Stable combinations formed by the metaphorical transfer of a geographic parameter are increasingly used in scientific vocabulary. This type of transformation is quite often used in medicine. Metaphoric terms are becoming more active, names of which are based on similarities with geographic oronyms and hydronyms: *arsula*, *scurvy sea*, *lacrimal lake*, etc. To achieve a greater external form of concretization, various water and land reliefs are used in medical terminology. Therefore metaphorical meaning «bottom» appeared. For example, the medical metaphor of the fundus means the similarity of the location «the posterior part of the inner surface of the eyeball visible during ophthalmoscopy, which includes the optic nerve head with retinal vessels, retina and choroid», the *ulnar sulcus* is a narrow gap between the elbow of the wrist flexion and the surface of the finger flexor in the lower half of the forearm; contains ulnar neurovascular bundle.

The geographical metaphors are dominated by toponymic names, placenames, which are represented by such phrases: *Crimean fever*, *anthrax*, *Mexican typhoid*, etc. The basis of toponymic metaphors is a sign of a certain geographic object that is a semantic core: a specific locality is indicated where the disease first appeared.

There is one more productive source of the metaphorical name of medical terms — the names of a geometric figure. In this case, the basis for the metaphorization is the shape of the object, such figures as the arterial cone, femoral *triangle*, *renal pyramids*, etc. are subject to rethinking. Many human organs got their names because of the similarity with geometric shapes. Thanks to the geometrical symmetry of the human body thus established, the understanding of its structure was facilitated, for example, *the perpendicular plate of the palatine bone*, *the pyramid of the temporal bone*, *the rectus abdominis*, *the angle of the mandible*, etc. In order to give a more accurate description of the structure of the human body and its organs introduced such geometric concepts as axes and planes. To give a more accurate description of the structure of the human body and its organs, such geometric concepts as axes and planes were introduced into medical terminology. In describing anatomical terms, stable combinations with the main component of the noun axis are widely used: vertical or longitudinal axis, horizontal or transverse axis, sagittal axis. With the word plane, we have fixed the following stable combinations: *horizontal plane*, *frontal plane*, *sagittal plane*. These metaphorical names, which were known in ancient times, are included in international anatomical terminology. Phraseological units characterizing joints based on metaphor are different forms: *a bowl-shaped joint*, *a nut-like joint*, *ellipsoid joints*, *cylindrical joints*, *spherical joints*, etc. For example, the stable expression of *cylindrical joints* resembles a cylinder segment in the form of the articular surface. The terminology name of a bowl-shaped joint resembles a cup. Similar metaphorical names are frequency in anatomy. Muscles are also varied in their shape and size: (fan-shaped, ring-shaped, pear-shaped, diamond-shaped, etc.). For example, the stable combination of *a rhombus muscle* is somewhat similar in shape to *a rhombus*, *the trapezius muscle* has a triangular shape.

In the medical terminological system, there is also a relatively small group of metaphors with a color designation: *white spot disease*, *yellow fever*, *hepatocellular jaundice*, *raspberry tongue*, etc. With the help of adjectives with the meaning of color, not only the appearance of a person, but also his condition, a painful appearance is characterized. It should be noted that the names of precious stones and metals also predominate in color coloration: *marble skin*, *lead palsy*, *bronze cirrhosis of liver*, etc.

In the modern linguistic system of language there are words and expressions, the imagery of which is their permanent property. This includes the metaphor. The vast majority of metaphors has a figurative character. Figurativeness usually arises when we collectively represent two phenomena, establish a definite connection between them. As a rule, the association is determined on the basis of analogy. The metaphorical image vividly demonstrates the peculiarities of a person's attitude and worldview. Many researchers associate the imagery of speech only with the use of figurative and expressive means of artistic discourse. In scientific speech, any particular word can cause in our consciousness a particular image of the external world. One of the features and characteristics of medical terminological phraseological units is a metaphorical rethinking of words and expressions that convey them a certain specific figurativeness. To create figura-

tively, well-known objects and phenomena are most often used, a connection is established between them on the basis of similarities, ideas, perceptions, sensations and identifications. According to our observations, metaphorical terms have a certain figurative character, emotional, expressive and evaluative components that play an important role in the formation of secondary values. There is a number of metaphorical expressions that can not only express the corresponding thought more capaciously, but also convey a figurative character. For example, *air thirst*, *gesture of removing the helmet*, *lemon peel*, *wax doll face*, *peasant's skin*, *milky field*, *strand coin*, *marble pallor*, *herding stick*, *star figure*, *crescent figure*, *satyr ear*, *coin counting symptom*, *solar plexus syndrome*, *arterial spider*, *manager's syndrome*, *cholera glasses*, *bread mold*, etc. In the process of knowledge of the surrounding world, visual perception of objects is paramount. Therefore, the most figurative have words and expressions that cause visual representations. For example, the metaphorical expression *cherry-red spot symptom* means «a clear discharge of a dark red central fossa observed during ophthalmoscopy against the background of a pale, turbid retina, a sign of acute obstruction of the central retinal artery». The motive of the metaphorical transfer of *the cherry-red spot symptom* was the similarity in shape and color, betraying not only color but also shape through the image of the berry. The terminological metaphor of *female hairpins* means «the elongation and tortuosity of capillary segments observed in capillaroscopy; a sign of arterial hypertension». Metaphorical expression *ladies' studs* are associated with a thin high heel on women's shoes and accessories for stabbing hair in a hair style. The basis of the formation of the *shepherd's* metaphor is the reinterpretation of a stable combination and the assignment of a new meaning to it, owing to the medical term: «a pronounced deformity of the proximal femur, in which the greater trochanter significantly protrudes upwards; observed in parathyroid osteodystrophy and fibrous dysplasia». As observations show, medical terms, formed according to various models of lexico-semantic metaphorization, vividly demonstrate the peculiarities of the attitude and worldview of a person. Concreteness of thinking, the need to rely on the creation of concepts on sensually perceived objects and phenomena, the materialization of new ones, the re-nomination of previously known concepts by saturating already existing meanings with emotional, expressive, evaluative components provide an explanation of the main issues, lexico-semantic metaphorization of words.

The analyzed material indicates the frequency-like functioning of metaphorical transfer in cardiology: *wooden shoe*, *cardiac angina*, *cat's purr*, *Corvizar's face*, *gallop rhythm*, *carotid pulse*, etc., in phthisiology and pulmonology: *mute lung*, *snowstorm*, *butterfly wings*, *rattled and a cracked heart pattern*. The efficiency of metaphorical transformation of cardiological and phthisiological terms is based on the transfer of names according to the figurative similarity of objects and organs of the cardiac and respiratory theme. Among the metaphorical expressions are the names of the characters of ancient mythology, which are characterized by semantic transformation, convey other associative links in medical terminology, which are based on mythological ideas about parts of the human body: *the cyclopic eye*, *the necklace of Venus*, *Medusa head*, *myopathifacies*, *Achilles tendon*, etc. For example, the metaphorical expression of cyclopic eye is associated with the ancient Greek mythical one-eyed creature and in the terminological system means «lack of functional dominance of one eyes in binocular vision».

As part of medical terminology, there are also letter metaphors that have a figurative comparison: *the legs are X-shaped*, *the kidney is I-shaped*, *the legs are O-shaped*, *the S-colirosis is S-shaped*. All grove syndrome scoliosis, in which any part of the spine is curved in one direction, and the higher or lower section — in the opposite.

Thus, metaphorization is a productive semantic method of forming medical terminology. Metaphorical transfer of names in the terminological system is noted regularly, which is due to the constant development of the formation of new names and meanings of medical terms through scientific rethinking of well-known words. The metaphorical method allows in some cases to create terminological names with expression elements in semantics.

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Ж.Ж. Шеризатова

Метафора медициналық терминдердің ең нәтижелі тәсілі ретінде

Мақалада метафора медициналық терминологияны қалыптастыру тәсілі ретінде талданды. Негізгі назар құрылымдық және семантикалық талдауға бағытталған, метафоралық терминдердің тақырыптық топтары ажыратылған. Семантикалық талдау негізінде медицина саласындағы метафоралық терминдердің қалыптасуындағы негізгі үрдістер анықталды. Терминологиялық жүйедегі атаулардың метафоралық ауысуы үнемі байқалды, бұл жалпыға белгілі сөздерді ғылыми қайта мағына үстеуі арқылы жаңа атаулардың пайда болуының және медициналық терминдер мәндерінің тұрақты дамуымен байланысты. Медициналық терминдер метафорикалықпен, тұтас жалпылама-тасымалды және бейнелі-дәлелді мәнмен сипатталатыны анықталды, оның негізінде ассоциативті-бейнелі ойлау нәтижесінде пайда болатын метафоралық қайта мағына үстеуі жатыр. Метафа медициналық терминологиялық қорды байытудың маңызды және өнімді өзегі болып табылады.

Кілт сөздер: метафора, терминологиялық жүйе, терминологиялық метафора, медициналық терминология, мағына, құрылым.

Ж.Ж. Шеризатова

Метафора как наиболее продуктивный способ образования медицинских терминов

В статье проанализирована метафоризация как способ образования медицинской терминологии. Основное внимание сосредоточено на структурном и семантическом анализе, выделены тематические группы метафорических терминов. На основе семантического анализа выявлены основные тенденции в формировании терминов-метафор в медицинской сфере. Метафорический перенос наименований в терминологической системе отмечается регулярно, что обусловлено постоянным развитием образования новых наименований и значений медицинских терминов путем научного переосмысления общеизвестных слов. Выявлено, что медицинские термины характеризуются метафоричностью, целостным обобщенно-переносным и образно-мотивированным значением, в основе которых лежит метафорическое переосмысление, возникающее в результате ассоциативно-образного мышления. Метафоризация является важнейшим и продуктивным источником обогащения медицинского терминологического фонда.

Ключевые слова: метафоризация, терминологическая система, терминологическая метафора, медицинская терминология, семантика, структура.

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