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TERMINOLOGY STUDIES: LINGUOCOGNITIVE PARADIGM
ЛІНГВОКОГНІТИВНА ПАРАДИГМА У ДОСЛІДЖЕННІ ТЕРМІНОЛОГІЇ

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Abstract. *The article considers the main tasks of cognitive terminology as a new direction of linguistic research, which is formed at the turn of the XX-XXI centuries, and prospects for studying the cognitive potential of terminology in various formats of scientific knowledge. Cognitive (cognitive-discursive) terminology studies the role of terminological units in scientific cognition and thinking, the problem of interaction between the language of science and scientific cognition, the phenomenon of scientific knowledge, its typology and forms of representation in the mental space of the specialist.*

The study of terminological systems with the involvement of methods of cognitive analysis and the construction of specific cognitive models allows a deeper examination of the processes of their formation and functioning. Methods of cognitive terminology provide an opportunity to understand not only the formation and development of professional concepts and categories, but also their hierarchy, organization, structure.

Category – one of the cognitive forms of human thinking, which allows summarizing and classifying existing experience and knowledge. Concept – a dynamic mental formation, the development of which is influenced by the national language, knowledge and experience of man, reflected in psyche; in addition, the concept is the result of cognitive activity of both the scientific community and a specialist, in particular, a veterinarian.

Frame – a schematic organization of the data obtained, through which a person learns special information.

Key words: *scientific paradigm, cognitive terminology, categories, concepts, frames, metaphor, metonymy.*

Introduction. The problem of formation, storage and transfer of professional knowledge with the help of terminological units is becoming increasingly important in the modern context of the rapid development of science and technology, the growth of new specializations. The development of science and its branches has led to the branching of the structure of terminology and changes in vocabulary. At the beginning of the XXI century, terminology is becoming a complex discipline that studies the possibilities of fixing the latest information, which allows to optimize the solution of various problems facing humanity. The main areas of terminology are general (theoretical) and applied terminology, which replaced the earlier – descriptive and prescriptive ones, which have their own complex structure and problems of study.

However, despite all the changes, there are still many controversial issues in terminology. One of them is the analysis of terminology in terms of cognitive approach, which was formed in the late 90's of XX century within the framework of cognitive linguistics and general terminology and continues developing.

Analysis of recent researches and publications. The cognitive approach describes terms (units of terminological systems) by their reflection of the process of cognition in general and the creation of fragments of the scientific picture of the world in particular. Currently updated works in the field of cognitive linguistics include: [6], [12], [18], [25], [31], [35], [40], [45].

Most modern researchers in the field of terminology prove the advantages of the cognitive approach, which "allows analysis of the origin and evolution of special knowledge in a broad civilizational context, reveals the causes and mechanisms of dynamic processes in the field of terminological nomination. All this deepens the scientific

understanding of historical processes in terminological systems, reveals the dynamics of the complex relationship of special structures of knowledge (and consciousness) with language structures [36, p. 172-174].

The cognitive approach complements the traditional descriptive methods of terminology analysis, allows modelling the internal meaning of the term, analyzing its systemic connections of linguistic and cognitive nature. Modern science is characterized by the application of a polyparadigmatic approach to the study of objects of reality, which provides a broad view and takes into account the interaction and distribution of objects [39, p. 92]. This is due to the fact that, firstly, one of the leading aspects of consideration was anthropocentrism, and secondly, the intensive integration of various fields of knowledge – theory of knowledge, linguistics, psychology, culturology, logic, philosophy and others [7, p. 295-324].

Methods of research. To achieve the goal, a set of methods was used, in particular, the method of analysis to compare and contrast the views of different scientists on the study of industrial terminology; methods and techniques of linguistic analysis.

Results of the research. Cognitive terminology takes into account the experience of previous terminological researches and provides its understanding of the phenomena of consciousness, language and communication [41, p. 136]. The cognitive approach in linguistics pays special attention to the human factor in cognitive, mental and linguistic processes. S. Hartmann believes that cognitive terminology considers not only the language competence of the speaker, but also the relationship of language with such cognitive abilities as memory, perception, imagination and thinking, studies the inner nature of term, the problem of presenting knowledge in the term, due to the connection with professional communication, professional knowledge and professional activities [23, p. 1-3].

Within the cognitive paradigm, terminology is understood as the result of cognitive activity of a specialist, which consists in the conceptualization and verbalization of professional knowledge [24, p. 150]. The level of conceptualization depends on the professional competence of the specialist, as well as on the level of development of a particular field of knowledge. Linguists point out that the term reflects both the facts observed by the researcher and their theoretical understanding.

Cognitive approach, in contrast to traditional, complicates and deepens the understanding of the term. If in traditional terminology the subject of research is mainly its linguistic characteristics, then cognitive terminology is interested in the ratio of conceptual and linguistic structures in the professional sphere, especially the conceptualization of professionally significant objects.

It is possible to combine cognitive and structural-semantic approach to the study of terms, as the intersection of language and thinking occurs at the semantic level of understanding the elements of reality [32, p. 51-52]. From this point of view, the meaning of a language unit represents, on the one hand, a structured entity consisting of semantic features, on the other hand, it represents the unity of semantic, linguistic extralinguistic knowledge. Defining the semantic component allows tracking the mechanisms of nomination of new objects depending on the mentality of native speakers. In our opinion, this approach is holistic, which will contribute to a comprehensive, multifaceted study of terminology.

The modern cognitive approach to the description of the terminological system requires that the terminological units be described conceptually as certain cognitive structures, i.e., as specific structures of special knowledge [29, p. 550-552]. The cognitive approach makes it possible to consider a separate science as a cognitive space and present it in the form of a concept sphere. Under the cognitive space, following X. Wen we understand the sphere of mental activity of the subjects of cognition or the sphere of human cognitive activity, the basic unit of which is the cognitive structure that accumulates the results of cognitive processes, and therefore such a structure is often called the structure of knowledge representation [41, p. 142].

Thus, the cognitive approach in terminology involves the study of terminology as conceptual information organized into certain

structures, as well as building a conceptual model that clearly demonstrates the information capacity of terminology, i.e., the depth of scientific thought in a particular field of knowledge as well as systematization, structure, integrity of terminology [44, p. 361-363].

Given the systematic nature of term system for cognitive terminology science, it is important to understand not only the formation and development of professional concepts and categories, but also their structure, hierarchy, organization. The cognitive approach allows us to consider existing information about the terminology system from a different perspective, based on cognitive and nominative mechanisms. As a result, the definition of the term has changed [31, p. 115].

In the paradigm of cognitive terminology, the term is understood as "a multidimensional linguistic information construct that simultaneously integrates many semiotic essential specific properties, features, qualities" [5, p. 17-19], as a verbalized special concept that appears and improves in the process of cognition [33, p. 188-189], as a cognitive-informational structure, which accumulates expressed in a specific language form of professional and scientific knowledge accumulated by mankind during the entire period of its existence [14, p. 125], which optimizes the cognitive and transformative activities of people, its content is objectified in a special meaning, represented not only by the object of knowledge, but also the mental process associated with it.

The informational-cognitive nature of the term is revealed in the nominative activity of the specialist, when the created term becomes a representative of the processes of human speech consciousness. In addition, it accumulates general and special information, acts as a mediator in the formation of special knowledge and is inextricably linked with the development of scientific knowledge, as it is a carrier of collective professional and scientific memory [40, p. 96].

If the structural-systematic approach to the study of industry terms is based on the linear principle of analysis of language material, where the term-scientific concept and term-terminological unit are mostly used as synonyms to denote a certain element of the terminology, the linguocognitive approach allows to clearly differentiate mental-linguistic structure of scientific concept, term as a verbal form of expression of a scientific concept and a terminological unit as a fragment of special knowledge in a certain terminology [3, p. 95-96].

The linguocognitive approach is aimed at establishing the relationship between term formation and the peculiarities of conceptualization in the scientific picture of the world. O. Yuzhakova notes that the term is a special cognitive-informational structure, which accumulates data expressed in a particular language form of professional and scientific knowledge of mankind, it optimizes the cognitive and transformative activities of people [20, p. 19-20]. This special cognitive-informational structure is objectified in a specialized meaning, presented not only as an object of cognition, but also as a mental process associated with cognition.

In the cognitive approach, term formation is understood as a cognitive process, inseparable from information processing, as a desire to organize the mental lexicon, storing it in memory, providing access to relevant data and the term is considered as a special cognitive-informational structure, which accumulates data in a particular language form of professional and scientific knowledge. Materializing this knowledge, the terms are used as typical cognitive-informational models needed in the process of specific (communicative) professional and scientific activities [34, p. 73].

In this regard, one of the modern tasks of linguistics is to study the nature of the term in the cognitive-anthropological paradigm of linguistics, creating a holistic conceptual picture of the term and analysis of language tools that form and maintain the information structure of the term. Thus, in the light of the cognitive approach, the most important new characteristic of the term is its information capacity which we reveal in detail through the components of the terminological concept – a generalized construct that reflects the meaning of the term-verbalizer of animal diseases [2, p. 60-61].

The paradigm shift in scientific knowledge has placed new emphasis on some functions of the term as a means to denote a special concept. Based on the work of scientists, we can note the multifunctionality of the term, namely that the

term performs a number of functions: nominative, definitive, informational (informational-communicative), heuristic (function of discovering new knowledge), orientational (forms the direction of thinking), cognitive (reflects cognitive experience of a particular community of people), pragmatic, and the term is involved in the progress of science [30, p. 196].

Cognitive linguistics understands the term as the result of human cognitive activity, which enshrines certain knowledge about the world as a tool of knowledge, because it generalizes, multiplies, accumulates and transmits knowledge to future generations. W. Croft defines the term as "a unit of nomination that demonstrates the quantum of knowledge ", followed by "different formats "of thought [15, p. 221-222]. In the concept sphere of science, the terms "act as a kind of bricks, elements, they consist of complex conceptual pictures in the process of thinking" [37, p. 150]. Terms that are operational units of special knowledge and function within a fragment of the scientific picture of the world are called term concepts.

In addition, being a sign of science, the term, according to D. Biber, is the result of "specific mental representation" of information related to such cognitive processes as categorization, conceptualization [8, p. 186]. Given the lack of a unified definition of the "term" in cognitive terminology, in our study we will be guided by the following definition: "A term is a language sign that represents an information-cognitive structure that accumulates special knowledge necessary in the process of scientific communication and professional scientific activity" [19, p. 67]. It emphasizes the conceptual and substantive characteristics of the term.

The key units of cognitive terminology that help study linguistic phenomena, taking into account the relationship between language, consciousness, thinking and language involvement in the processes of cognition and communication, are the category, concept, frame, secondary nomination, metaphor and metonymy.

The very idea of the categorical division of reality in the ontological key and in professional languages brings to the fore in terminology the need to study not only a single term, but a whole category of terms to verbalize concepts. The categorical approach is based on the general scientific principle of systematicity, as any science is characterized by systematicity (as opposed to non-scientific or pre-scientific knowledge), which is expressed in the union of a number of objects and involves the relationship between them.

Therefore, according to the method of formation, any category is a set of objects connected on the basis of a common concept. Category, as a format of knowledge, is the knowledge of both the class of objects and the general concept that is the basis for combining these objects into one category [13, p. 132].

An important concept of cognitive linguistics is the one that has been studied by many linguists, however, its understanding changes significantly in the interpretation of various scientific fields, linguistic schools and individual scholars. The large number of definitions of the concept is due to its ambiguity, semantic diversity and depth of the phenomenon itself.

Concepts and conceptual systems are enshrined in language. That is why language is the most important source of establishing concepts and conceptual systems and analyzing their nature.

We will rely on and consider the basic definition of the concept presented by S. Hartmann, which defines the concept as the basic unit of consciousness, part of the "collective unconscious", operational semantic unit of memory, "brick" of the conceptual system that reflects human knowledge and experience "quanta" of knowledge; which is only partially verbalized by language in the form of its meaning and contains a significant share of nonverbal information" [22, p. 154].

In language, a concept can be verbalized by individual words, phrases, phraseological units, sentences and whole texts. The linguistic representation of the semantics of concepts can be various linguistic facts that accompany the concept: definitions, predicates, comparisons, metaphors, aphorisms, proverbs and sayings. All concepts have in their structures a set of figurative features that can be revealed through the analysis of these linguistic facts. Research by linguists confirms that the concept has a complex structure and contains some linguistic and cultural information. Such information conveys the experience of people who speak the same language, and it is closely

related to emotions [27, p. 140].

Concepts are classified according to various parameters. Yu. Rozhkov distinguishes concepts by spheres of human activity: "Concepts are primary formations that are translated into various spheres of human existence, in particular, in the sphere of mostly conceptual (science), mostly figurative (art) and mostly activity (life) development of the world", highlighting, first of all, scientific concepts [33, p. 188-189].

In correlation with the definition of general concept, we consider it appropriate to pay attention to the identification of scientific, professional concept. Today, the scientific concept as an independent subject of study is rarely considered. The formation of a scientific concept is carried out in the process of developing special knowledge. The tool of cognition and thinking in a scientific text are terms, performing the function of organizing and regulating scientific concepts behind scientific knowledge [28, p. 90].

Thus, A. E. Goldberg defined the scientific concept as organized in a certain way on the basis of the key concept of system-forming or text-creating ordering interconnected other scientific concepts [21, p. 219]. In this perspective, the scientific concept is not just a meta-meaning, but a meta-meaning-value, or significant, important in specific circumstances for the subject of knowledge of the term. The scientific concept is a reconstructed basic concept that passed through the individual-personal experience of the subject of knowledge, which it acquired in one or another field of its professional activity [21, p. 212].

Scientific concept, following M. E. Winters we understand as a unit of knowledge, linguocognitive formation [43, p. 145]. The researcher divides all other language units into appropriate categories and classes, which serve as filters for all objects, contents and connections discussed in a particular science, and are therefore necessary for its gradual development; it also defines the boundaries of a particular science, identifies its components and landmarks by which objects and phenomena are studied [43, p. 158]. Thus, the scientific concept is the most important means of forming and developing a particular scientific field. Accordingly, the main function of the scientific concept is the representation of the most relevant for science or scientific paradigm knowledge, experience, meanings, associations and scientific concepts.

B. Brettel identifies three basic structural components of the concept: image, informative content and interpretive field. The image encodes the concept and consists of "perceptual" (formed in the mind of the native speaker through the senses as a result of reflection of the surrounding reality) and "cognitive" images (metaphorical understanding of the subject). Information content determines the essence of the concept and contains only the main distinguishing features of the conceptualized subject and phenomenon. Interpretive field, realizes cognitive features that interpret or evaluate the informative content of the concept, being to some extent "source knowledge" [11, p. 257-258].

The interpretive field can be described as an enumeration of cognitive features. It distinguishes evaluative, encyclopedic, utilitarian, regulatory, and socio-cultural zones. For the scientific concept, in our opinion, important are encyclopedic and utilitarian areas.

A. Esra considers concepts through the meaning of the word and distinguishes them depending on the type, method or mental picture. These can be representations (visual images), schemes (graphic, linear images), frames (mental images with a certain set of conceptual features) [17, p. 268]. For example, the concept as a structure of knowledge can be represented in the form of a scheme, frame, conceptual scenario.

The understanding of the frame as a special cognitive structure, which reproduces the acquired knowledge of a certain stereotypical situation, was first proposed by D. Dessi [16, p. 122]. According to the scientist, a frame can be graphically represented by a multilevel network, which consists of nodes and connections between them. The upper, superordinate nodes of the network are clearly defined, because they are formed by concepts, the content of which always corresponds to the situation that the frame represents. Below these nodes, at the subordinate levels, there are terminal nodes – obligatory components, the verbalization of which depends on the speech situation [16, p. 155]. The concept of frame was later expanded and began to be used to study the

peculiarities of the organization of the language system in general.

M. C. L'Homme proposed frame semantics, which he considers as a research program that offers a list of principles of word formation by adding new meanings or collective meanings of semantic elements into one whole [26, p. 12-13]. K. Fischer defines frames as cognitive structures, knowledge of which is provided by concepts represented by words [19, p. 54]. From the linguocognitive point of view, the frame is considered as a special unified construction of knowledge or schematization of experience.

Thus, in modern cognitive linguistics we can distinguish two approaches to the concept of frame: 1) frame as a structure of knowledge; 2) frame as a structure of knowledge representation. On the one hand, the frame is seen as part of the human cognitive system. In this case, the frame is defined as a real cognitive structure, "a structured fragment of knowledge of the world in some part of it, formed in the mind around an entity as a generalized summary of the sphere of its existence" [9, p. 69-70]. On the other hand, the frame is a means, a tool for presenting the cognitive structure, "a cognitive model that transmits knowledge and thoughts about a situation that is often repeated" [10, p. 606-607]. Frames are not arbitrary "packets" of information, but are always organized "around" a certain concept and include basic and potentially possible information that is associated with a particular concept.

Summarizing all the variety of interpretations, we can identify a relevant understanding of the term frame as a schematic organization of the data obtained, through which a person learns special information.

The need for frame analysis to study the organization of terminological systems was substantiated in the scientific studies of O. Ivashchyshyn who used the frame as a means of organizing new terminological systems [1, p. 15]. The work of researcher shows why it is necessary to separate certain terms and group them into terminological blocks, which allows to justify the introduction of a certain term and explain the change in the interpretation of the old. Such organization of terminological vocabulary is a schematization of human experience of professional activity and is relevant for determining the conceptual capacity.

Conclusions. Thus, cognitive terminology explores the role of terminological units in scientific cognition and thinking, the problem of interaction between the language of science and scientific knowledge, the phenomenon of scientific knowledge, its typology and forms of representation in the mental space of the specialist.

Today, one of the relevant areas in terminology is the cognitive approach to the study of terminological systems, in which terminological units are described conceptually as certain cognitive structures. Methods of cognitive terminology provide an opportunity to understand not only the formation and development of professional concepts and categories, but also their hierarchy, organization, structure.

Due to the fact that modern terminology is undergoing the introduction of methods of cognitive linguistics, the view of the term and its functioning changed and a new, related to the problems of cognition and reflection of knowledge in terms, conceptual apparatus: categories, concepts, frames was formed. In the paradigm of cognitive terminology, a term is not just a basic unit of science, but a linguistic sign that represents an information-cognitive structure that accumulates special knowledge necessary for scientific activities and communication of specialists in a particular field.

The key units of cognitive terminology that help study linguistic phenomena, taking into account the relationship between language, consciousness, thinking and language involvement in the processes of cognition and communication, are category, concept, frame, secondary nomination (metaphor, metonymy).

Category – one of the cognitive forms of human thinking, which allows summarizing and classifying the existing experience and knowledge. Concept – a dynamic mental formation, the development of which is influenced by the national language, knowledge and experience of man, reflected in his psyche; in addition, the concept is the result of cognitive activity of both the scientific community and a specialist, in particular, a veterinarian. Frame – a schematic

organization of the data obtained, through which a person learns special information. Secondary nomination in terminological systems is a universal dynamic process of creating new terms, which reflects the features of scientific conceptualization. Secondary nomination is quite effective in professional communication, as it allows you to accurately and completely convey the content of the language unit. Such features distinguish the secondary nomination as a dynamic and effective method of term formation.

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Анотація. *У статті розглянуто основні завдання когнітивного термінознавства як нового напряму лінгвістичних досліджень, що формується на рубежі XX–XXI ст., та перспективи вивчення когнітивного потенціалу термінопонять у різних форматах організації наукового знання. Когнітивне (когнітивно-дискурсивне) термінознавство досліджує роль термінологічних одиниць у науковому пізнанні та мисленні, проблему взаємодії мови науки та наукового пізнання, феномен наукового знання, його типологію та форми репрезентації в ментальному просторі фахівця.*

Вивчення терміносистем із залученням методів когнітивного аналізу та побудовою конкретних когнітивних моделей дозволяє більш глибоко розглядати процеси їх формування та функціонування. Методи когнітивного термінознавства дають можливість зрозуміти не тільки становлення і розвиток професійних концептів і категорій, а також їх ієрархічність, організацію, структуру.

Категорія – одна з пізнавальних форм мислення людини, що дозволяє їй узагальнити і класифікувати наявний досвід і знання. Концепт – динамічне ментальне утворення, на формування якого впливають національна мова, знання і досвід людини, відображені в її психіці; крім того, концепт є результатом когнітивної діяльності як наукового співтовариства, так і конкретного фахівця, зокрема, лікаря ветеринарної медицини.

Фрейм – схематизована організація отриманих даних, за допомогою яких людина пізнає спеціальну інформацію. Вторинна номінація в терміносистемах – це універсальний динамічний процес творення нових термінів, який відображає особливості наукової концептуалізації. Метафора – це найпродуктивніший креативний засіб збагачення мови, вияв мовної економії тобто певна семіотична закономірність, що виявляється у використанні знаків однієї концептуальної сфери на позначення іншої, дещо схожої з нею. Метонімія – це перенесення що відображає певний об'єкт через його співвіднесеність із основним. Метонімія дозволяє нам використовувати назву одного об'єкта для позначення іншого.

Ключові слова: *наукова парадигма, когнітивна термінологія, категорії, концепти, фрейми, метафора, метонімія.*