FRAME ORGANIZATION OF THE "ANIMAL DISEASES" CONCEPT IN THE ENGLISH LANGUAGE

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Abstract. The article examines the peculiarities of the ANIMAL DISEASE concept representation in the English language within frame theory, widely known and recognized both in Ukrainian and foreign cognitology. The purpose of the work is to show how accumulated knowledge and information about animal diseases is structured in frame conceptual models and fixed in the minds of English speakers. The research material is a selection of lexicographic data recorded in English specialized and philological dictionaries and encyclopedic directories. In the course of the analysis, we relied on the methods of continuous sampling of linguistic material, definitional and frame analyses. The study not only presents a number of definitions of the term "frame", but also clarifies its concept, describes the frame approach to the concept study.

Due to the analysis of the dictionary definitions of the ANIMAL DISEASE concept, its cognitive signs were singled out: "health disorder", "disruption of the activity of the animal's organism" and an additional semantic feature – “the cause of the disease”. Based on the typology of basic frames by S. Zhabotynska, the frame of the ANIMAL DISEASE concept was structured on the basis of subject, possessive and actional frames. The vertices of the frame are AGENT, PATIENT, and INSTRUMENT.

Structures of knowledge that are represented through lexical units of English animal diseases terminology are also presented in the form of a cognitive model of another type – the structuring of a classificational frame, which is a set of categories and cognitive features, united and expressed by terms. This fixed structure models a field of specialized knowledge and has a certain hierarchical structure consisting of subframes, slots, and subslots. It was concluded that it is appropriate to use traditional cognitive units (frame, gestalt, scenario, script, etc.) for concept modeling, which have a clearer structure than a concept. Information about the concept of ANIMAL DISEASE in combination with the cognitive features attached to it, forming conceptual schemes and giving rise to combinations of frames, structures the conceptual space of ANIMAL DISEASE reflected in the English language.

Keywords: ANIMAL DISEASE concept, cognitive features, frame, frame model, classification frame.

Introduction. Cognitive research has become an integral part of modern linguistic science, which studies the deep connection between cognitive structures of knowledge and language forms, ways of conceptualizing cultural schemes. In its studies, cognitive linguistics operates with such structures as frames, scenarios, scenes, prototypes, propositions, which makes it possible to model the structural reflection of human experience in the semantics of language units and to take into account all types of knowledge realized by lexical meaning. The frame is considered to be the most effective of all the listed structures, as it makes it possible to adequately process the available and incoming information, and to most fully reveal the conceptual side of the language unit. A frame is a structure of knowledge organized “around” some concept, and includes mandatory (realistic in all situations) and optional (used depending on the situation) components and features [10, p. 197-198].

The concepts of frame and concept are
related. The concept of ANIMAL DISEASE as a structure of knowledge can be presented in the form of a scheme, frame, conceptual scenario. One of the most used structures for presenting the conceptual content of a concept is a frame, as it provides the most detailed analysis of the concept structure. The relevance of this work lies in the study of the frame structure of the ANIMAL DISEASE concept, since it did not receive sufficient coverage of its cognitive features, attributes and connections through the analysis of the verbalized units of the concept [1, p. 366-368].

Analysis of recent researches and publications. The works of American scientists: P. Faber [10], V. D. Richard [19], M. C. L’Homme [16], B. Brezina [6] are devoted to the study of the DISEASE concept and its lexical representation in the English language. Certain aspects of the DISEASE concept were studied by O. Labenko [3], Z. Dubynets [2], O. Syrotin [5]. Despite the large number of thorough scientific studies, the DISEASE concept has not received sufficient coverage in terms of the peculiarities of its framework organization.

A large number of studies by well-known linguists: A. Fabregas [11], C. J. Fillmore [13], G. Fauconier [12], S. Zhabotinska [2] is dedicated to a thorough research of concepts, conceptual systems and structures in the context of linguocognitive approach.

The purpose of our scientific research is to show how the accumulated knowledge and information about animal diseases are structured into frame conceptual models and fixed in the minds of English speakers.

Materials and methods of research. In the course of study we used dictionary articles from English-language specialized and philological dictionaries and encyclopedic reference books as the materials of research. In the course of the analysis, we relied on the methods of continuous sampling of linguistic material, definitional and frame analyses.

Results. Representatives of cognitive linguistics believe that each language represents a certain system of concepts, thanks to which native speakers can perceive, structure, classify and interpret the flow of information that comes from the surrounding world. The concept is an important part of cognitive linguistics which is being studied by many linguists, however, its understanding changes significantly in the interpretation of different scientific directions, linguistic schools and individual scientists. The large number of definitions of the concept is due to its ambiguity, semantic multifacetedness and the depth of the phenomenon itself [4, p. 162].

Concepts and conceptual systems are anchored in language. That is why language is the most important source of establishing concepts and conceptual systems and analyzing their nature [15, p. 172]. We will rely on and consider the basic definition of the concept presented by R. Forkel, who defines the concept as “the basic unit of consciousness, a component of the "collective unconscious", an operational content unit of memory, a "brick" of a conceptual system that reflects the knowledge and experience of a person in the form "quanta" of knowledge; which is only partially verbalized by linguistic means in the form of their meaning and contains a significant share of non-verbal information” [14, p. 43-55].

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 a complex of figurative features in their structures, which can be revealed by analyzing these linguistic facts. Linguistic studies confirm that the concept has a complex structure and contains certain linguistic and cultural information. Such information conveys the experience of people who speak the same language, and it is also closely related to emotions and evaluation [22, p. 251-252].

The understanding of the frame as a special cognitive structured informational data that reproduces experientially acquired knowledge about a certain stereotypical situation, was first proposed by M. Minsky [17, p. 122]. According to the scientist, the frame can be graphically represented by a multi-level network consisting 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 this frame
represents. Below these nodes, at subordinate levels, there are terminal nodes – obligatory components, the verbalization of which depends on the speech situation [17, p. 155].

The concept of frame was later expanded and used to study the peculiarities of the organization of language system in general. C. J. Fillmore proposed frame semantics, which he considers as a research program that offers a list of principles for creating words by adding new meanings or the collective meaning of semantic elements into a whole [13, p. 373-374].

Since the frame is a key concept of linguoconceptology, we consider it appropriate to dwell on its definitions. The understanding of the frame as a special cognitive structure is presented in modern linguistics in the following definitions:

1) a unit of knowledge that is organized around a concept and contains data about what is essential, typical and possible for this concept within the framework of a certain culture [7, p. 231-232];

2) data structure for representing a stereotypical situation [22, p. 247-248];

3) a multi-component concept conceivable in the integrity of its component parts, a set of standard knowledge about a subject or certain phenomenon [18, p. 265-266];

4) the cognitive structure that exists in the phenomenological field of a person, based on probable knowledge about typical situations, expectations about the qualities and relationships of real and hypothetical objects [20, p.224-225].

Summarizing all the variety of interpretations, we understand the term “frame” as a schematized organization of received data, with the help of which a person learns special information. In our case, such special information is the data on animal diseases, for the establishment of which articles of explanatory and encyclopedic dictionaries were used. English dictionary definitions of this term estimate only a few entries. Even in specialized dictionaries, only some definitions of "disease" are offered. From a small number of dictionary definitions of "animal disease", we represent the following: "animal disease, an impairment of the normal state of an animal that interrupts or modifies its vital functions [9, p. 214]; 
"animal disease" means a disease to which animals are liable and whereby the normal functions of any organ or the body of an animal is impaired or disturbed by any protozoon, bacterium, virus, fungus, parasite, other organism or agent [21, p. 59].

The definitional analysis of the ANIMAL DISEASE concept made it possible to determine its cognitive features: "health disorder", "disruption of the activity of the animal's body" and an additional semantic feature – "the cause of the disease" – an infection or health disorder. It is obvious that the lexical composition of the studied terminology depends on the object of the disease, the specifics of the dysfunction of its organs or body and, accordingly, the causes of this process. According to conception of S. Zhabotynska, the typology of basic frames includes subject, actional, possessive, identificational and comparative frames. Frames are called "basic" because they demonstrate the most general principles of categorization and organization of verbalized information. Based on the classification of basic frames by S. Zhabotynska, for the analysis of the ANIMAL DISEASE concept, a frame was used as a schematized organization of the acquired knowledge, and a slot was used as an element of the frame structure, which can become the basis for further classification [2, p. 81-82]. We consider it possible to structure the frame of the ANIMAL DISEASE concept on the basis of objective, possessive and actional frames. Schematically, the frame model of the concept of ANIMAL DISEASE in English can be presented as in figure 1.

The squares of this scheme indicate the key nodes of the frame – DISEASE and ANIMAL, and the three-dimensional arrows indicate the type of connection between them: substantive (exists), possessive (has), actional (affects); the circles indicate concepts corresponding to the categories of CAUSALITY (agent), SPACE (there), TIME and COLOR (yes), OBJECT (tool).
Let's consider in more detail the names of fragments, their meanings, which fill the slots of the frame representing the concept ANIMAL DISEASE in the English language. AGENT is represented by the CAUSATOR slot, which represents a corresponding category, and has its own topic range of verbalizers, represented by three subslots: 1) biological pathogens; 2) physical factors; 3) chemical factors. The apex node of the PATIENT is represented by the ANIMAL node and is verbalized by the following lexemes: cattle, sheep, goat, equine, avians, swine, fish, mollusks, bees, etc. The object of the AGENT's action is represented by the three-dimensional arrow AFFECTS (on), associated with the lexemes "affects", "invades", "kills", which are only indirectly related to our terminological system.

Vertex node INSTRUMENT – means through which the AGENT acts, represented by pathological objects expressed by lexemes: erosion, hernia, aneurysm, cyst, pustule, anbury, papilloma, papule, petechia, roseola, eczema, furuncle, etc. This node has a connection with other slots of the subject frame – MEANS OF and THERE, which verbalize the categories of space, time, color to the extent that it points to the way the disease exists. Structures of knowledge that find representation through lexical units of English terminology for the designation of animal diseases can be presented in the form of a cognitive model of another type – the structuring of a classification frame, which is a set of categories and cognitive features, structurally united and expressed by terms. This fixed structure models a field of specialized knowledge and has a certain structure consisting of subframes, slots, and subslots.

The terminological array for the designation of animal diseases is quite complex and multifaceted, therefore the verbalizers of the frame of this concept also form a complex and branched structure that models a branch of specialized knowledge and has a certain hierarchical structure, within which subframes, slots and subslots are connected by means of hyper-hyponymic connections where each group of terms is associated with those terminological units that specify animal diseases through their categorical features, namely: spatial, causal, object, and others. The cognitive characteristics of the analyzed concept – spatial, causal and object categories, allow us to distinguish three relevant subframes in the term system for animal diseases: “Disturbance of an organism activity”, “Causator of disease” and “Object of disease”. The classification frame model of the ANIMAL DISEASE concept is shown below in figure 2.
Let's consider the structure of this frame in more detail. The first subframe "Disturbance of an organism activity" is determined by the category of SPACE, which indicates the localization of the disease, and OBJECT, which is the leading topographic feature by which diseases are classified. Verbalizers of this subframe convey information about diseases based on anatomical localization, about pathological conditions or diseases. As a result of the analysis of a sample of the English animal disease terminology, it was found that the subframe "Disturbance of an organism activity" consists of ten slots which verbalizers carry more detailed and specific information about diseases, namely: 1) infectious diseases; 2) endocrine and metabolic diseases; 3) hematology, oncology and immunology; 4) dermatological diseases; 5) diseases of gastro-intestinal tract; 6) diseases of urinary tract; 7) diseases of reproductive systems; 8) musculoskeletal and neurological disorders; 9) diseases of the respiratory system; 10) diseases of the cardiovascular system.
5) diseases of the gastrointestinal tract; 6) cardiac and respiratory diseases; 7) diseases of the urinary tract; 8) diseases of the reproductive system; 9) neurologic and musculoskeletal disorders; 10) ophthalmological diseases.

The number of verbalizers of the subframe "Disturbance of an organism activity" is the largest compared to the others and is equal to 692 English-language terminological units, which is (65.9%) of the total number of terms selected. Among the verbalizing terms of this subframe, the most frequently used units are characterized by the labeling of the disease with attributive phrases (65.9%). The majority of disease terms are represented by the following nominations: infectious diseases (115 units, 16.6%), endocrine and metabolic diseases (86 units, 12.4%), hematology, oncology and immunology (65 units, 9.4%) and diseases of the gastrointestinal tract (88 units, 12.7%).

The nominations of dermatological diseases include 58 terms (8.4%), the nominations of cardiac and respiratory diseases verbalize 69 terminological units (9.9%), diseases of urinary canals represent 46 terms (6.6%), the nominations of diseases of the reproductive system – 61 terms (8.8%), verbalizers of neurologic and musculoskeletal disorders make up 65 terminological units (9.4%), ophthalmological diseases verbalize 39 terms (5.6%).

The second subframe "Causator of disease" is less voluminous and contains information that in the system organization of knowledge about animal diseases has a special character, as it means the involvement of a complex of knowledge from related fields (biology, physiology, microbiology and chemistry). This subframe is represented by three slots: 1) biological pathogens; 2) physical factors; 3) chemical factors. The biological pathogens slot is divided into seven subslots: 1) agents / pathogens; 2) bacteria; 3) protozoans; 4) viruses; 5) fungi; 6) parasites; 7) pathogens. The physical causators slot includes four subslots: 1) trauma; 2) thermal effect; 3) ionizing radiation; 4) atmospheric influence. The chemical factors slot consists of three subslots: 1) acids; 2) alkalis; 3) poisons).

The third subframe "Object of disease", determined by the category OBJECT, contains terminological units that reveal the relationship of the disease to a certain animal, so the verbalizers of this subgroup completely coincide with their categorical features. The subframe "Object of disease" is represented by nine slots, in which diseases are differentiated by animal species: 1) pet's diseases; 2) diseases of cattle; 3) equine diseases; 4) sheep and goat diseases; 5) lagomorphs diseases; 6) avian diseases; 7) fish diseases; 8) swine diseases; 9) bee diseases.

The number of verbalizers of the "Object of disease" subframe estimates 215 English-language terminological units, which is 20.5% of the total number of terms from our sample. The construction of the frame structure, which consists of English-language verbalizers of animal diseases, was carried out by analyzing two types of relationships between the concepts of animal diseases: hyper-hyponymous and causal. Hyper-hyponymous: infectious diseases (hyperonym) – Lyme disease; Rabies; Leptospirosis; Canine hepatosoonosis; Canine skin pythiosis (hyponyms); cattle diseases (hyponym) – Theileriosis; Bovine tuberculosis; Bovine babesiosis; Bovine brucellosis; Dermatophilosis (hyponyms), i.e. the relationships between the term denoting a generic concept and the term, which reflects species variants of the same concept. Similar terms form a hierarchy, which is built on consistent subordination. Causal-effect relationships are relations according to which concepts and terms form a logical-semantic system based on established natural laws.

Conclusions. Thus, it is advisable to use traditional units of cognitive science (frame, gestalt, scenario, script, etc.) for concept modeling, which have a clearer structure than a concept. Information about the concept of ANIMAL DISEASE in combination with the cognitive features attached to it, which form conceptual schemes and give rise to combinations of frames, structures the conceptual space of ANIMAL DISEASE reflected in the English language.
Sписок використаних джерел

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Анотація. У статті розглянуто особливості репрезентації концепту ХВОРОБИ ТВАРИН в англійській мові в рамках фреймової теорії, широко відомої та визнаної як у вітчизняній, так і зарубіжній когнітивології. Мета роботи — показати, як накопичені знання і інформація про хвороби тварин структуруються у фреймових концептуальних моделях і закріплюються у свідомості носіїв англійської мови. Матеріалом дослідження послужила вибірка лексико-графічних даних, зафіксованих в англійських спеціалізованих та філологічних словниках та енциклопедіях. В ході аналізу ми спиралися на методи суцільної вибірки мовного матеріалу, дефініційного і фреймового аналізу. У дослідженні не тільки презентується низка визначень терміну «фрейм», а й уточнюється його поняття, описується фреймовий підхід до вивчення концепту. Завдяки аналізу словникових дефініцій концепту ХВОРОБИ ТВАРИН виокремлено його когнітивні змістовності: «різниця здоров’я», «порушення активності організму тварини» та додаткову семантичну ознакою «причину появи хвороби», викликану інфекцією або порушенням здоров’я, а не випадковістю. Спрацювавши на типологію базисних фреймів С. Жаботинської було структуровано зображення фрейм концепту ХВОРОБИ ТВАРИН на підґрунті предметного, посесивного та акціонального фреймів.

Зроблено висновок, що для моделювання концепту доцільно використовувати традиційні одиниці когнітивістики (фрейм, гештальт, сценарій, скрипт), які мають більшу чіткість, ніж концепт, структуру. Інформація про концепт ХВОРОБИ ТВАРИН в сукупності з закріпленим з ним когнітивними ознаками, які формують концептуальні схеми і породжують комбінації фреймів, структурує концептуальний простір ХВОРОБИ ТВАРИН, що відображається в англійській мові.

Ключові слова: концепт ХВОРОБИ ТВАРИН, когнітивні ознаки, фрейм, фреймова модель, класифікаційний фрейм.