

COLLOQUIUM

COGNITIVE ASPECT OF TERMINOLOGY DESCRIPTION AS A MEANS TO UNDERSTANDING SPECIALIZED DISCOURSE

**Convenor: Larissa Manerko
(Russia)**

Introductory words to the colloquium
(10 minutes)

Traditionally Russian School of Terminology outlined a number of fundamental issues necessary for solving in the terminological science. Firstly, at the beginning of its history it drew its attention to a term as a linguistic sign that was regarded a representative of a special symbolic (semiotic) system, characterised by its specific informative function. At that moment the terminological conception was discussed from two main angles: 1) as a part of an engineering approach attentive to standardisation and internationalisation of terminology; and 2) as a part of linguistic theory which made clear the difference between the linguistic and logical peculiarities of terms and it represented these results in dictionaries¹. The same tendencies were observed in the Vienna school of Terminology².

Continuing to develop along a path in increasing sophistication in studies and due to the political and economic problems in the USSR of that period in general, the Russian terminological science developed independently from the other European world. These tendencies allowed not only to enrich the understanding of human interaction and designating process, but also to deepen typological-comparative, semasiological, onomasiological, and a bit later cognitive and functional descriptions of terms and terminological systems³. One of the main steps to the unity between the foundations in Eastern Europe and the Western countries, between approaches to terminological theories were the last three symposiums on LSP which were held in Finland, Great Britain, and Italy and the colloquia that were organized by prof. H. Picht⁴. Thanks to these events and thanks to great and fruitful efforts of Professor Picht who could manage to unite scholars from different countries and provided challenging activities for those who were interested in the studies of terminology, we got to know that it was necessary to discuss not only differences, but also common things.

So, our colloquium seems to be the continuation of a series of events the main aim of which is to discuss and clarify the cognitive-theoretical foundations of terminology. Besides that cognitive approach of terminological data description is a step to the understanding human interaction and specialized discourse, this analysis is based on the empirical study of categorization

¹ *Leitchik, V.M., Shelov, S.D.* Terminology: Where is Russian Science today? In: Russian Terminology Science (1992-2002) / S.D. Shelov, V.M. Leitchik (eds) together with H. Picht and C. Galinski. Vienna: Termnet Publisher, 2004. P. 15-48.

² Wüster, E. Einführung in die allgemeine Terminologielehre und terminologische Lexicographie. 3. Aufl. Bonn: Romanistischer Verlag, 1991.

³ *Leitchik, V.M., Shelov, S.D.* Terminology Science in Russia: Social Needs and Subject Contents. In: The 15th European Symposium on Languages for Special Purposes: New Trends in Specialized Discourse. Italy, Bergamo: Univ. of Bergamo, 2005. P. 6.

⁴ Terminological Science at Crossroads? In: The 13th European Symposium of Language for Special Purposes. Finland: Vaasa, 2001; *Picht, H.* Comparison of the Theoretical foundations of terminology in Eastern Europe and the Western Countries. In: The 14th European Symposium of Language for Special Purposes: Communication, Culture, Knowledge: Book of Abstracts. UK: University of Surrey, 2003. P. 72-73; *Picht, H.* Approaches to Terminological Theories: A Contrastive Study of the State-of-the-art. In: The 15th European Symposium on Languages for Special Purposes: New Trends in Specialized Discourse. Italy, Bergamo: Univ. of Bergamo, 2005. P. 5-7.

and lexicalisation processes. The discussions will be valuable for those specialists who want to discuss cognitive achievements in terminology studies represented on the basis of various corpora of scientific sphere: modern technique, telecommunication systems, and medicine. What is very important for us is to define much clearer those perspectives developed by cognitive models, cognitive mapping and other methods revealing properties of terms and terminological systems.

Contents of the colloquium

1. *Larissa Manerko*. Cognitive-communicative perspective: ways of study of professional discourse and LSP.
2. *Tatiana Orel*. Terminology analysis by means of frame construction (on the basis of the English telecommunications terminology).
3. *Valentina Novodranova*. How cognitive maps of science are formed?
4. Svetlana Mishlanova. Comparative studies of metaphor in medical and popular medical discourse.
5. *Elena Bekisheva*. Main categorial principles of term nomination in the international classification of diseases, injuries and causes of death.

Abstracts of presentations

COGNITIVE-COMMUNICATIVE PERSPECTIVE: WAYS OF STUDY OF PROFESSIONAL DISCOURSE AND LSP

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The major problem of our current understanding of language for specific purposes and professional communication is concerned with the modern and up-dated ways of discourse and language description. The most influential view of LSP studies in Russian school of Terminology is connected with cognitive and communicative methodology in linguistics⁵. This trend is gradually coming to the full understanding of human cognition expressed by specialized discourse and language means used in a specific function.

The presentation is aimed to explain how terminological meanings of words and expressions in specialized discourse of *modern technique* are cognitively and contextually grounded. The author pays special attention to processes of categorization and conceptualization in terminology.

The categorization is explicated on the basis of factors, which can progress us towards the semantic structure of a term and the whole terminological system of interrelated concepts. I'd like to show that most units of terminology and understanding have prototype structure⁶. The

⁵ *Manerko, L.* Noun Phrases in English Terminology: two Visual Systems of Orientation. In: Communication, Culture, Knowledge: Abstracts of the 14th European Symposium on LSP 18-22nd August 2003. Surrey: Univ. of Surrey, 2003. P. 36; *Manerko, L.* Spatial Cognition and Complex Nominal Phrases. In: Russian Terminology Science (1992-2002) / Ed. by S.D. Shelov, V.M. Leitchik together with H. Picht and C. Galinsky. Vienna: Termnet Publisher, 2004. P. 144-161; *Manerko, L.* Nominative Units in Scientific English. In: Terminological Science and Research. IITF Journal Vol. 15 (2004). Vienna: Termnet Publisher. P. 7-14; *Manerko, L.* The Conceptual Model of Specialized Discourse in Physics. In: New Trends in Specialized Discourse: The 15th European Symposium on LSP. Book of Abstracts. Bergamo: Univesita' Degli studi di Bergamo, 2005. P. 49-50.

⁶ *Lakoff, G.* Women, Fire and Dangerous Things. Chicago: Univ. of Chicago Press, 1987; *Temmermann, R.* Towards New Ways of Terminology Description: The Socio-cognitive approach. Amsterdam/Philadelphia: John Benjamins Publ. Company, 2000

description of the process of forming categories depends on scientist's understanding and interpretation of events and his usage of language means.

The conceptualization is presented in terms of formal modeling of conceptual structure and its relationship with linguistic structure that is ready to incorporate propositions, image schemas, metaphor and metonymy, mental spaces, and frames for the purposes of terminology exploration. The topic raises a variety of other fundamental issues: the relationship of general and specialized knowledge in professional discourse, the role of a scientist in semantic and discourse understanding, the advantages of cognitive description of semantics and syntax.

TERMINOLOGY ANALYSIS BY MEANS OF FRAME CONSTRUCTION (ON THE BASIS OF THE ENGLISH TELECOMMUNICATIONS TERMINOLOGY)

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The presentation will be devoted to the description of methods widely developing and applied in the sphere of Cognitive Terminology in Russia. The object of the research is the *English telecommunications terminology* based on the synthesis of the language for general purpose with the language for specific purpose – the sublanguage of computer engineering. However, in comparison with the computer engineering terminology, the telecommunications terminology is a wider sphere of various human activity applications. This terminology exists on the basis of ordinary and scientific types of knowledge. It gives us the opportunity to show how the scientific knowledge develops and how it can influence the mentality of an individual who is involved in the language conceptualization and categorization processes based on usage and creation of new language forms in his intellectual activity.

A great importance in our research is emphasized on the integrative methods that help us subsequently to combine the results of the linguistic and extra linguistic knowledge research into one conceptual, systematically organized, and dynamic structure.

The aim of our research is to construct a frame of the English telecommunications terminology with the help of which we can view a language as a mental formation and one of the most important systems of human knowledge representation. The frame analysis gives us the opportunity to get the idea about all the existing types of relationships between different concepts included in this frame.

According to its structure a frame is a “three-dimensional”, multicomponent concept, representing “a package” of data, knowledge about stereotyped information. To construct a frame of any sphere of human activity, it is necessary to analyze the structure and nomination characteristics of simple, derived, compound units and terminological word-combinations of different complexity constituting this sphere, and to define the main categories of the terminology under analysis. The process of conceptualization relates to the distinguishing of minimal informal units of human experience and knowledge structures whereas the process of categorization refers to the combining of similar or identical units into bigger classes which are called categories. Therefore, categories are always constructed with regard to a definite sphere of knowledge.

The telecommunication system of English is a complex and developing terminology sphere consisting of 11 categories. Every category or nominative class has its hierarchical structure and consists of several layers: the highest (e.g., *artifacts*), thematic (e.g., *hardware*), basic (e.g., *device*) and subcategorical (e.g., *antenna*). The borders of the most categories are fuzzy, as a result, specific categorical classes of words-hybrids are formed, which become a part of several categories at once. This process can be explained by the openness of classes and the dynamic character of human general and scientific world-images interaction. The categorical analysis of terminology

and its distribution among the semantic categories helps us to show the fuzziness of categorical borders, their flexible structure and also terms' interaction with each other.

The next step to the frame analysis is to outline nomination characteristics. The cognitive-onomasiological modeling is a universal method of semantics presentation of word- and phrase-formative linguistic categories. The reconstruction of predicative relationships between the unit's components standing behind every word- and phrase-formative model is considered to be the initial step in the cognitive modeling which is called onomasiological analysis. The onomasiological model is the integration of three or two ontological entities: object entity, process and non-process feature. The research shows that the most productive onomasiological models in the English telecommunications terminology are [THING – BE USED FOR – OPERATION] and [THING – BE OF – TYPE (KIND)], used for defining a device applied for different operations or for its description.

As a result, by means of cognitive-onomasiological modeling we examined the main connections between concepts in the sphere of telecommunications reflected in its terminology. The conceptual structure of the English telecommunications terminology provides us with the necessary data for the frame construction reflecting the process of fixation, transmitting, receiving and storing of information. So, it includes the whole “package” of knowledge about this sphere of human activity.

This conceptual system is dynamic and is able to reflect existent changes in human life and society and also can change its form according to the pragmatic aims of its usage (by a creator of telecommunications technologies, their user and mediator – the one who offers the services in this sphere of activity). In conclusion, I'd like to note that all three frames of a creator, user and mediator of telecommunications technologies will be presented and commented. Nevertheless, it is necessary to point out that the conceptual structure of a user of telecommunications technologies is closely interconnected with the conceptual structures of their creator or mediator. Hence, the frames cannot be isolated from each other because the world-images closely interact. Consequently, a frame can perform three functions: reflect a structure of a certain type of human activity, be the result of its cognition and record formally the received knowledge in human consciousness.

So, the cognitive-communicative approach helps us to realize the connections between those phenomena existing in a language in its material representation and those phenomena which are concealed from our observation and go deeply into the human consciousness. By means of this approach, scientists undoubtedly get closer to the understanding of processes and mechanisms of human cognition. This research based on the English telecommunications terminology let us specify the existing conceptions about the rules of new terminology organization and understand the means of knowledge representation in this sphere of human activity.

HOW COGNITIVE MAPS OF SCIENCE ARE FORMED?

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The understanding of terminological system organization is closely connected with the definition of a term as a strict concept. This viewpoint came into being when cognitive science was declared and cognitive-communicative paradigm of linguistics was born. In this trend of linguistics scholars are using many new methods and approaches for the description of language material.

Cognitive mapping is one of them; it may be described as a set of categories and its subdivisions. This method can't be called a formal one, because it is based on the study of terms and their properties implying cognitive-terminological principles of language description. This aspect presupposes that terminological units are understood as structures representing special knowledge.

The conceptual system of any science (*medicine* in particular) is construed on the basis of categories and categorical features pointing at various links and relationships. The systematization of main dimensions of medicine requires the inclusion of this or that element into a definite category. The category is regarded to be the system of knowledge uniting the results of human experience in a certain domain of activity and discourse. Thus, in the cognitive map of medicine as a result of categorization process we may find the category of “object”, “disease”, “treatment”, “prophylaxis”, etc. Separate branches of sciences, such as cardiology, neurology, therapy, surgery, etc., form the subdivisions of medicine. Linguistic units used in medicine also describe human understanding and interpretation of these notions.

MAIN CATEGORIAL PRINCIPLES OF TERM NOMINATION IN THE INTERNATIONAL CLASSIFICATION OF DISEASES, INJURIES AND CAUSES OF DEATH

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This paper presents the results of linguoconceptual analysis of the names of the *diseases* and points out the profound gnosiological and cognitive bases of their creation. This research concerns different levels in the process of nomination including linguistic and non-linguistic aspects.

The concept *disease* is basic in medicine. It means the state characterized by abnormality of body functions. Having made the linguoconceptual analysis of the modern nomenclature of the diseases we isolated the main categorial principles of nomination in this thematic group. We tried to classify these principles according to their gnosiological, disciplinary, cognitive and linguistic features.

Gnosiological categories. The primary categorization is performed at a level of gnosiological categories. The categories of different degrees of abstraction are reflected in medical terms. These are categories of place, sign, cause, colour, time, process, quantity, etc.

Disciplinary categories. In medical scientists' opinion these features are the most preferable in the process of term-building since they reflect real signs of the diseases in medical terms: localization of the pathological process, its intensity, anamnestic data, aetiology and pathogenesis, the character of pathological spreading, etc.

Cognitive mechanisms involved in the process of term creation are the following: comparison displayed by means of conceptual metaphors, generalization, abstracting, conceptual blending which is reflected in compound terms and selecting one or another conceptual signs for term nomination.

A wide range of comprehensive terminological tools depends on the type of the category reflected in a term. Gnosiological categories as the most abstract ones have various forms of their reflection in the language of medicine. The disciplinary categories are usually performed with the help of Greek or Latin terminological elements. As for the cognitive features they often find their expression in the scientific language by means of semantic transference.

In this study we also present medical diagnoses as combined syntactic structures possessing the properties in which the categories of all these types are overlapped reflecting complex scientific concepts.

Developing such approach we tried to contribute to the understanding of the meaning of the compound medical terms and to show the deep compositional roots of their semantics.