LEGE ARTIS

Language yesterday, today, tomorrow

TOWARDS UNDERSTANDING OF CONCEPTUALISATION IN COGNITIVE TERMINOLOGY

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Abstract: The paper describes the nature of the concept in terminological research introspectively leading to a cognitively grounded framework and usage-based study in cognitive terminology, where conceptualization is revealed on the basis of the dynamic character of human scientific thinking, cognitive systems directly affecting terminological systems and professional discourse, and representing conceptual organization of special knowledge on the basis of linguistic and extra-linguistic factors.

Key words: terms, terminology, language for specific purposes (LSP), cognitive terminology, conceptualization, knowledge structures, professional discourse

1. Introduction: Reviewing major approaches to clarify the investigated linguistic subject

The controversy of describing a concept still retains its central problem among various disciplines. It is the major domain of linguistics though philosophy and logics as well as other emerging and developing scholarly disciplines took interest in language and human communication and made numerous attempts to explicate this phenomenon in various ways. The first attempt was undertaken in structural linguistics by de Saussure in his "Course on general linguistics", where the focus was on "language in itself and for itself". Specifying and defining the opposites was continued in traditional semantic research pointing at the static characteristics of the unit content. Finally, this endeavour was further followed in terminological and language for specific purposes (LSP) search

for an ideal and unambiguous language unit. As it is justly put by Pederson and Nuyts, "This is already apparent if one makes an attempt to clarify the issue as such. It is quite easy to characterize it in a very general way" (1999: 1).

The new turn to the way people experience and conceptualize the outer world is closely connected with what we know about language in particular. It gives credibility to investigate it through a wider perspective paying attention to a number of aspects that were not discussed previously in structural linguistics. One of these points was outlined by the famous Russian linguist Baudouin de Courtenay, who already at the end of the 19th century noticed that "the first cardinal demand of the objective research" in language science, "should be the assumption of fairly psychological and social aspects of human speech" (Бодуэн де Куртенэ 1963: 17). These two aspects – a psychological and a social one – have become indispensable in all language studies of the 20thcentury, especially when at the end of the 30s the idea of "the transition from thought to speech" through the "inner speech" was proclaimed by Vygotsky who explained that the necessary element "of the accomplishment and embodiment of thought" is centered in a word and its meaning (Выготский 1982-1984: 358). The viewpoint of the psychologist concerning the interaction of a human being as a social creature with the outer world and society had an interdisciplinary undertaking and was beyond the "limits of behavioural structures", because of motives, aims and intentions in speaker's thought and speech.

This strong bias in favor of the interdisciplinary character of experiential, human-oriented or anthropocentric studies in language has become the matter of crucial importance. It links language with the dynamic character of consciousness and thinking, the world outside observed by people with personal perception, thoughts, feelings, and beliefs, focusing on language peculiarities with the representation of conceptualization viewed through the functional perspective in discourse. This perspective allows to illuminate what is happening in human mind and brings forth "the elaboration of the already existing facts on a deeper and more multifaceted level

of explanation…", because it is becoming one of the most important features of the contemporary linguistic science, in which "…the issues of semantics are rising to a qualitatively new level" (Novodranova 2011: 170). They are becoming the inevitably essential issue in Cognitive Semantics and Cognitive Terminology science, the theoretical premises and analyses of which are founded on cognitively grounded, speaker oriented and functionally aimed investigation of language (Manerko 2011).

Further exploration concerning conceptualization is obvious to combine the terminological and cognitive spheres and to pave the orientation pathway to the theoretical basis of the research, which will be organized in the following steps.

First, I am going to show the history of a term as a basic unit in Terminology and Linguistics and its correspondence to the content. It seems reasonable to discuss this central issue, because terminologists tried to represent this relationship echoing the trends in studying language. It should be noticed here that no single methodological approach is endowed with a privileged status: all the approaches are discussed objectively in the first part of the paper. The contemporary approach emphasizes the advance in conceptualization understanding in a terminological unit as a dynamic process taking place in discourse.

Second, conceptualization acquires a special status being one of the basic anchoring matters among the dynamic notions of the contemporary linguistic science, dealing with inherent cognitive systems directly affecting human way of reasoning and speaking. Besides that, it encodes, keeps and transmits the conceptual information both semiotically (linguistically) and non-linguistically. These two ways of information-processing open up the abundant possibilities incorporating those kinds of methodological techniques, which are able to reveal the conceptual organization and its dynamics in human mind. The latter becomes evident in applying cognitive linguistics methodology derived from other cognitive faculties (such as vision, perception, imagination, and memory, etc.) apart from language proper.

Finally, the evidence from various formats of knowledge brings the author to presenting conceptualization in terminological units functioning mostly in professional discourse and inhibiting the intricate questions of perceptual and conceptual sources of term formation. Analyzing terminological units in specialized discourse we can find conceptual distinctions, which may correspond to two kinds of cognitive models: the simple and complex ones. The simple cognitive models include perceptual entities, propositions and cognitive-onomasiological formulas based on interrelations between the established concepts. In the more complicated cases of professional discourse other more complex formats of representing knowledge are shown on the basis knowledge domains in communicative situations of discourse.

This set of preliminary steps will be regarded as a pathway structure constituting the material of the paper and providing readers unfamiliar with the issues a broad overview of research expertise on different terminological matters existing throughout the 20th century until now.

2. Research tendencies in Terminology and languages for special purposes in the 20th century

Isaac Newton in his letter to Robert Hooke tried to answer the question how he had managed to create such a great work called "The principles of Mathematical analysis", "If I have seen further, it is by standing on the shoulders of giants" (Newton, *s.a.*). As Newton accumulated knowledge after breakthroughs in physics and mathematics in the previous époque, so the terminology resting on a solid foundation of a long pre-scientific period from the end of the Middle Ages till the 19th century of presenting professional information in specialized dictionaries for translating purposes became a separate branch of human knowledge at the verge of the 20th century.

The appearance of terminology was due to the efforts of such scholars, as Lotte and Drezen, Vinokur and Reformatsky in Russia and Wüster in Austria. The first two scientists – Lotte and Drezen developed the engineering approach to term description.

The founder of terminological studies in Russia – Lotte – started analyzing the automobile terminology as a language subsystem. He tried to solve practical problems of term explanation paying attention to the linguistic form of the term. Later in his work "The basis of scientific and technical terminology" he summarized his ideas on specific features of a term as a special word (Лотте 1961). The specialist in linguistics Vinokur shifted the focus of attention to the function, saying that "a term is a word in its specific function" (Винокур 1939). The engineering approach combined with the linguistic understanding of the term made it possible to admit that a term as a linguistic sign is part and parcel of language as a semiotic system. This idea was described by Reformatsky in a separate article later becoming part of the textbook for University students in Linguistics (Реформатский 1959).

Traditional terminology concentrated most of its efforts on data collection and processing that was necessary for compiling dictionaries and translating, because a term was understood only in statics as the most adequate perspective in research at that moment. Charged with operational perspective on terms, it shaped the object of terminology science in a rather rational way according to the rules of logics and philosophy, concentrating on a unit in terminology as an internally non-contradictory unit, which main features comprised a clear-cut definition and one-to-one correspondence between the term and its reference. This methodological framework presupposes an objective world, on the one hand, and human thinking, on the other, which may be described as a system of logical relations between various notions ("ponyatiye" in the Russian logico-philosophical tradition) (Leitchik & Shelov 2003: 86; Wright 2003). The notion points at the ability of the term "to designate a specific general concept in the system of all concepts within a special area of knowledge or activity" (Leitchik & Shelov 2004: 17).

The abstract character of the meaning and notion is defined as a set of features according to a classical principle of categorization, when one semantic component in the denotative meaning of the word is clearly defined and stands in opposition to the

other one, besides that a set of these semes as smallest units of thought is limited. The principle of opposition makes it possible to penetrate into the logical relationships in recognizing objects as belonging to the same class, system, and holistic terminological sphere, in formulating semasiological, onomasiological, and typological characteristics of a terminological unit within one language or in groups of languages.

Though some terminologists including Reformatsky admitted that "a term is regarded to be monosemantic; in reality it is much more complicated, because in the sphere of terminology polysemy is observed" (Реформатский 1959: 166). The mentioned feature in defining the semantics of the term overcomes the existing absolutisation and its idealistic representation. This and other cases outside strict terminological descriptions point at existing discrepancies in language works, which in general didn't influence the main linguistic stream and methodology till new waves in terminological descriptions in the second half of the 20th century.

The Western tradition of term and concept study starting with Wüster exhibits similar tendencies. Wüster was closer to pragmatic activities of harmonization and standardization of terminology in German-speaking countries and Europe; so we also find the strong emphasis on the terminological analysis starting with the concept – a unit of thought – and "its integral constituents" (Felber 1984: 103). The content of the unit or concept takes place in single terminological items and may be defined outside language, though this content tries to represent the most intrinsic features of an object in reality. Wüster's desire to find the strict determinacy of content in the concept of a term as well as the ability to correspond to a clear-cut definition is biased towards the idea written down in standards of the technical committee (TC) of the International organization for Standardization (ISO), e.g., "terms must refer clearly and unequivocally to a particular concept" (ISO/TC 37/SCI/CD 704.2 № 13395 En). This text of the world-famous standards formulates principles and methods of terminological work "in order to position the concept being defined in its concept system and to delimit it from the other concepts in this system" (ISO/TC 37/SCI/CD

704.2 № 13395En). So, the name as a form of the linguistic sign is related to other elements of a concept system structured on logical and ontological features.

Schubert considers the linguistic optimization to be the hallmark of that period. In his paper he puts it in the following way: "it is not always remembered that a great deal of the basic principles of linguistic optimization and of the systematics of Wüster's suggestions for thoroughly constructed concept systems and terminologies is directly derived from his profound knowledge of Esperanto, a planned language particularly notable for its extremely regular, productive, and versatile word formation" (Schubert 2011: 26). Even now equipped with advances in linguistics, semiotics and socially interactive nature of linguistic communication we are to admit that it is sometimes very difficult to represent terms and their meanings in an unambiguous way: terminological studies of that period followed the prescriptive mode of term understanding and description.

In general, both tendencies in Russian and European terminological schools "determined the most essential notions linked with the term and its properties as well as the development towards standardization and internationalization of the terminological sphere" (Manerko 2011: 121). The belief "in the need for standardization in order to improve special language communication" (Temmermann 2000: 1) became the leading thread of any terminological discussion until the middle of the 20th century. The work of a terminologist was seen more of a classifier than of a researcher scrutinizing actual terminological discourse reality.

This and the next periods in terminological research are outlined by Leitchik on the basis of five stages of Terminology corresponding to the defined science as "terminovedeniye" in the Russian linguistic school (Лейчик 2007: 121) and "Terminology" (upper case) in Western description of special language (Temmerman 2000: xviii). These stages are as follows:
1)   The first stage (1930-1960) is concerned with its theory and practice developed

in papers of the Austrian scholar Wüster and Russian scientists mentioned above;

2) The second stage (1970-1980) dealt with formation, specification, and development of views on LSP and ways of its improvement, distinguishing Terminology science as an independent scientific and applied discipline. This period brought its special name 'terminovedeniye' (Terminology Science) in works of Petushkov and Golovin and is used in papers of new generations of terminologists;

3) The third stage is from the 1980s till the beginning of the 1990s, when Grinev, Kobrin, Leitchik, Melnikov, Tatarinov, and others wrote their textbooks and reading materials in the sphere of Terminology for university students;

4) The fourth stage is defined as the period of crisis of Terminology science, because of the general decrease of the Wüsterian prescriptive approach in terminological systems descriptions and the tendency towards applied aspects of terminological work, but the deepening of research procedures in newly-born terminological schools in Russia (Новодранова 2000);

5) Starting with the works of Alekseeva, Novodranova, and Manerko at the end of the 90s the cognitive principles of research as well as social and dynamic factors were used in terminological studies. These studies made possible to establish and formulate a new trend – Cognitive Terminological science as the 5th stage in historiography of terminology (Лейчик 2007: 123).

The transition of Terminology to a more fundamental status as a separate discipline in the classification above became associated with the very important English term – "language for specific or special purposes" or LSP (Манерко, Шарапков 2015: 24). It designates "language means used in communicative settings within a specificity in order to maintain the communication among the people active in this setting" (Hoffman 1976: 170; cit. Schubert 2011: 28), though it is mentioned that special communication "is limited by the concrete subject, intensions and conditions" (Hoffman 1979: 16).

The concept of a special language associated with register analysis took place mainly in the 1960s and early 1970s and operated on the basic principle that language of

engineering constituted a specific register different from the biological sphere (Hutchinson & Waters 1995: 9). However, at the same time, this term of LSP is opposed to language for general purposes – LGP. According to Averbukh, "lexical units of particular national language function in LGP, but in LSP we can find units of special designation besides lexical means of the national language. These are terms from concrete subject domains" (Авербух 2004: 17).

Besides the English term, German specialists in terminology use the word Fachsprache, that denotes "special language" serving the purposes of "optimal understanding between specialists" of the same communicative setting (Hoffman 1979: 28). Being "a formalized and codified variety of language" (Picht & Draskau 1985: 9) language for special purposes at first imitated the tendencies in formal sciences including logics and mathematics, which described relatively true knowledge based on the philosophy of science constructed on theory of relativity, Bohr's theory and classical physics (Picht 2009: 78). This stage is described by Schubert as *term-oriented* and it is followed by the other three stages (Schubert 2011: 27-29).

Yet, the main thing is that LSPs fulfill the function of communicating information of a specific kind (Picht & Draskau 1985: 9). It functions according to Benveniste's "intent (intenté): that which the speaker wants to say" (cit. Sandor 2015: 47) or "actual purport" expressed in the speaker's utterance (Akhmanova & Idzelis 1979: 58). Terms used in a given sentence retain "…only a small part of the value it has as a sign. A distinct description is, therefore, required of each element according to the domain in which it is engaged" (cit. Sandor 2015: 47).

This second stage of development in LSP evolution does not explicate the tendency centered on linguistic optimization and standardization in term and its concept. It puts forward a sentence as a basic unit of language, in which a word or a term functions and this becomes the transition to the *system-oriented approach* in the study of languages for specific purposes (Schubert 2011: 27-29). Though this turn to the new perspective

was quite predictable, it highlighted two main tendencies in professional communication. The first tendency was exhibited by epistemological aspects of indeterminacy in postmodernist science, where" indeterminacy is in fact a *complex* concept that includes as well as implies closely related phenomena such as uncertainty, openness, ambiguity, vagueness, underdetermination, and pluralism as well as deconstruction …carried out" (Budin 2007: 61). The development of this point of view makes evident that indeterminacy decreases true knowledge, but the theory of LSP tries to explain professional special semiotic systems revealing the essentially valuable and current features in interaction between various groups of people. These features may become transparent on two levels of interaction: at the highest level of complexity the communication takes place among experts and at lower levels of complexity LSP is used "to inform or initiate the interested sides in the most economic, precise, and unambiguous terms" (Picht & Draskau 1985: 9). This means that the function of communicating information to those people, who are not specialists in some particular knowledge field, is to acquaint them with different notions and to make it clear, which term to use. Thus, the language for specific purposes brings to the limelight various degrees of specialization and this is becoming the second tendency in special communication development.

In Schubert's classification of LSP studies (Schubert 2011: 29) the *text-linguistic stage* is described as a step further in comparison with the previous system-oriented period. A text regarded as the main unit of research suggests not only the attention to cohesion and coherence, but also situational, pragmatic and extra-linguistic characteristics leading to specialized text types. Gvishiani in her book "Language of scientific interaction" first published in 1986 compares the essence of three scientific communicative spheres – texts in mathematics, philosophy, and linguistics are compared. The language of mathematics is more homogeneous, because terms are similar whether we take English or Russian texts, so it is quite easy to find equivalents in both languages. In philosophical papers English is characterized by peculiar notions and statements affected by national and cultural peculiarities, this leads to difficulties

in finding the corresponding Russian term due to another nature and principles of understanding the reality. In linguistics, this process becomes even more heterogeneous because of the methodological tendencies revealed in the evolution of the linguistic thought (Гвишиани 2008: 14-15). This is in full accord with the idea that the level of professional semiotic systems as well as professional communication is conditioned to a certain extent by cultural factors (Schubert 2011: 29). These factors are becoming of great importance and particular interest for LSP research of the 4th stage.

Cultural awareness is not the only factor influencing the development of LSP research. Scholars usually add cognitive, sociolinguistic, situational, and other extra-linguistic factors. The whole network of characteristics constitute the way people express their experience and thought speaking or writing about separate terms and special languages. They make the specialists in Terminology science turn to the issues of the relationship between language and cognition, language and conceptualization, language and knowledge structures acquiring a special status in linguistic science and systems of professional communication nowadays.

3. Knowledge as a way to understanding conceptualization

In our everyday life the "packaging" of information is organized in one way or another through language means. On special occasions the content is wrapped up and presented to the hearer according to interlocutors' needs in discourse practice. Therefore, only some amount of information becomes activated and socialized, if, on the one hand, it is caused by the changes brought by the collective and acquired personal values and needs. On the other hand, being aimed at the concrete reader or listener, the information is interpreted depending on the communicative situation, mental and speech activities. In this case, it progresses towards getting and producing new knowledge, which is becoming much more precise, richer in detail and transformed according to pragmatic intentions of communicators.

Some specialists in language and discourse don't see any reason to distinguish

information and knowledge; they define them as similar phenomena (Chafe 1987). We consider these phenomena as separate ones, because knowledge is associated with the needs of a concrete person and his/her mental representations. It is able to be modeled in a concrete piece of a text. From the text a person gets the necessary information, tries to construct and reconstruct one's own vision of the idea through the architecture of the modeled data. If the data is essential for a person, (s)he is using it to fulfill his/her goals and purport, and then it will obviously come to one's knowledge. Scholars prove that knowledge is associated with human memory, the ability of a 'yazykovaya lichnost' (the term introduced by Karaulov and translated later into English) or a language personality (Караулов 2007) to find common things in previous and new situations that always arise in communication. Besides that, new knowledge structures open additional and optional possibilities to reasoning and taking actions, widen the discursive freedom of a person on the basis of various types of knowledge organization in one's memory (Микешина 2008: 23).

It is that kind of knowledge defined by Jackendoff as "the projected world" – fully based on the interpretation of the subjective understanding and explanation of the self in a particular communicative event (Jackendoff 1983: 21) or the so called "the experienced world", that is "shaped …by our human perception, knowledge, attitude, in short by our human experience. This does not mean that we create a subjective reality, but as a community we agree about intersubjective experiences" (Dirven & Vespoor 1998: 14). If we take one conception of the "projected world" or the other – of the "experienced world"– nevertheless it is the process and the result of reality, the representation is based on general social relations and the experience of a particular person – "a human conceptualizer".

Discourse as a type of speech and mental activity of a person or people is sometimes understood as "a type of behavior, which explicitly encodes and transmits conceptualization" (Pederson & Nuyts 1999: 4) and it deals with the study of knowledge structures. Specialists in Cognitive linguistics associate categorization and

conceptualization with a mental process of classification fundamental to human cognition (Болдырев 2003; Кубрякова 2004; Dirven & Vespoor 1998). This is the ability of a person to think over the emerging information and construct the imagery of things and phenomena in the objective reality, which leads to the formation of definite representations of the perceived, cognized, and interpreted notions in the mind (Манерко 2004b: 125).

The opinions on conceptualization are quite different even in cognitive science and linguistics. Some scientists show that conceptualization is closely connected with new ideas and concepts, though there is no difference between semantics of language units and their conceptual representations. In this case, it is emphasized that "a meaning is a sort of mental representation… in which speakers encode their construal of the world" (Jackendoff 1996: 26-27) and "the terms *semantic structure* and *conceptual structure* denote the same level of representation" (Jackendoff 1983: 95). The other contribution to the same idea equates "meaning …with conceptualization", because conceptualization is interpreted quite broadly: it "encompasses novel conceptions as well as fixed concepts: sensory, kinesthetic, and emotive experience; recognition of the immediate context (social, physical, and linguistic); and so on. Because conceptualization resides in cognitive processing, our ultimate objective must be to characterize the types of cognitive events whose occurrence constitutes a given mental experience" (Langacker 1991: 2). Seeking the accurate characterization of the conceptual structure Langacker points that conceptualisation reveals "the ongoing flow of cognition: any thought or concept, whether linguistic or nonlinguistic" (Langacker 1991: 108).

Some other researchers split semantic and conceptually relevant representations, because "linguistically encoded semantic representations are abstract mental structures, which must be inferentially enriched before they can be taken to represent anything of interest" (Sperber & Wilson 1976: 174). The explanation of grammatical and lexical patterns should be given "in terms of the speaker's intended meaning in

particular contexts in language use" (Saeed 2005: 343). This idea leads the investigators to the understanding that the semantic level is not identical with the conceptual level. In connection with this, it is necessary to mention the difference between two types of representations. It is known that the semantic analysis is aimed at explicating the semantic structure of a word or phrase, in which denotative, significative, and connotative meanings are realized. The conceptual level of analysis is associated with the search for those basic concepts, conceptual features, and parameters, which have shaped the signs and determined the functioning of cognitive systems and knowledge structures. The conceptual description is a far richer system than the system of linguistic knowledge concentrated in language signs. So in the light of this, it becomes obvious that the *semantic representation* is connected with the separate word and its meaning explanation on the basis of semes and the *conceptual representation* leads to our knowledge organization about the world, on the one hand, and it allows to show the way we are able to understand inner processes of human thinking and interpretations, on the other.

The investigation of conceptualization may help a terminologist penetrate into the very essence of language if one takes into account the nature of cognition playing a significant role, especially in social interaction. But it needs to be underlined here that investigating conceptualization in all the spheres of human activity and especially in Terminology and LSP we try to construct a culture- and social-specific image of the world based on general, theoretical, and naïve cognition and reveal the nature of such conceptualization. This complicated task is supported by the idea that "the remoteness of this goal is not a valid argument for denying the conceptual basis of meaning" (Langacker 1991: 2).

4. The attempts to define conceptualization in cognitive terminology

Terminology of today is a separate branch of linguistics and human knowledge, which aims to describe a special character of terms, their internal (semantic and conceptual) structure and its external (functional) representation in professional discourse. This

perspective provides the distinction between two main functions. The first is the cognitive function, which is presented as "language links with cognitive processes, with all ways of getting, processing, keeping information about the world in its correlation to linguistic forms" (Кубрякова 2004: 37). The second one is the communicative function, explicating how and in which context a linguistic unit appears. In light of both functions Terminology Science nowadays is aimed at revealing how terms and terminological systems function, and how professional communication is organized, conceptualized, and classified fully applying cognitive linguistic methodology.

Cognitive terminology or cognitive-communicative terminology science being part and parcel of cognitive linguistics research in general is one of the leading branches of terminological investigations in Russia at the present moment. It is more than two decades old and can be regarded as a separate knowledge area (Novodranova 2014). The central idea that should be emphasized is that cognitive terminology motivates the shift to culture-specific studies and opens new horizons for terminological descriptions. Methods and procedures employed in cognitive linguistics are taken from a variety of intersecting disciplines, setting up different ways of gathering empirical evidence motivated by theoretical foundations. The research conducted within this approach is concerned with working on the processes of categorization and conceptualization. The methodological tools for the analysis of conceptual categories are usually derived from textual and contextual information. The text contains all the clues needed to interpret it through linguistic and conceptual entities, conceptual and relational links between them. Knowledge structures represented by terminological units point at the diversity of cognitive models, their changing status in categorization process, the variability of organization of language means and terminological domains.

Language and conceptualization are constituted by views on the shape of conceptual representation, where a variety of parameters are relevant to the content of a domain expressed. They range them from proposition-like to image-based systems (Pederson

& Nuyts 1999: 2). Some of these systems focus on either simple or higher cognitive processes, systematized with the help of artificial intelligence or without it, based on semantic networks or inspired by psycholinguistic and cognitive models.

Boldyrev, one of key contributors to cognitive framework in Russia, made an attempt to systematize forms of representations and principles of organization on the conceptual and language levels of linguistic units (Болдырев 2003). He distinguishes between two types of conceptualization studies. The first type adheres to *conceptually simple features* revealed in a set of elementary semantic characteristics. Among them, we can find a sensual image, which is very concrete and easily grasped by human perception, a schema or a schematic image, different kinds of representation, and a traditional notion shaped by the features registered in explanatory dictionaries. *Conceptually composite structures* incorporate the link between the elements and include more intricate relations associated with a variety of cognitive operations like propositions, frames, and scenarios.

In spite of the very basic character of this subdivision into conceptually simple and composite structures, it still needs to be explicated in detail. Even in the sphere of conceptually primitive cognitive structures it is not quite easy to show the variability of semantic values influencing a terminological unit conceptualization inside the language system and in discourse flow.

The material presented in this article shows that the classification of the conceptualizing basis looks far more complicated and multispectral, due to the fact that what is below the surface of conscious awareness shapes and structures the unconscious mind expressed by terminological means. Any terminological unit in discourse is supported by the perception, cognitive processing influencing the dynamic process of naming, and by the organization of specialized knowledge.

The next part of the article will zoom in on the concrete examples of substantives and

nominal complexes analyzed in fiction, terminology of modern technical and academic discourse. In selecting the data for the analysis below the main idea was to make clear the heuristic benefits provided by cognitive modeling and technique going hand in hand with human understanding of knowledge through language. Words, phrases, and extracts from texts are chosen to explicate the diversity of language means expressing the dynamics of human thought accumulation. These various means reflect both *simple and complex kinds of conceptualization*.

5. From terminological units of professional communication to simple formats of conceptualization

Among *simple representations* a system of conceptual structuring should be first referred to. This system is able to combine at least two knowledge structures, manipulating with two ideas – the previous and the new one, existing in the flow of human thought and according to the purport of fleeting discourse. The comparison of two conceptual entities or other elementary cognitive operations based on two concepts are employed as a way for the dynamic evolution of human thought and the language system. These two knowledge structures correspond to one more operation of linking between the conceptual domains. The simple conceptual representation includes sensational or sensory images, image schemas, propositions, cognitive mapping based on conceptual metaphor, and/or metonymy.

Let us begin with *the sensory image*, which is the basis of the common perceptual grounding of cognition taking place in non-verbal thinking, in everyday communication or fiction. It can be accessed through lexical concepts in certain contextual environments. The sensory image is able to outline the subjective experience biased towards emotions and feelings of literary heroes, because it is constructed on the comparison between the object of observation and human thought. For example, in the well-known story "Cat in the rain" by E. Hemingway the image of a small kitten under one of the dripping green tables during the rain is compared with

the feelings of the main heroine, who also feels uncomfortable in the world. The following passage provides these emotions:

The American wife stood at the window looking out. Outside right under their window <u>a cat</u> *was crouched under one of the dripping green tables. <u>The cat</u> was trying to make <u>herself</u> so compact* *that she would not be dripped on.*

This implicit comparison is employed by the aesthetic impact influencing the reader and it is combined with the cognitive and communicative functions.

In term investigations we deal with emotional experience rather rarely, the comparison is usually based on associative cases of comparison. By way of illustration, consider the term taken from geometry – it is the notion of *hypotenuse* defined in the Oxford Advanced Learner's Dictionary as "a side of a right-angled triangle opposite the right angle" (Oxford Advanced Learner's Dictionary 1982: 418), a *right triangle* readily characterizes the given word and *hypotenuse* is incoherent without it.
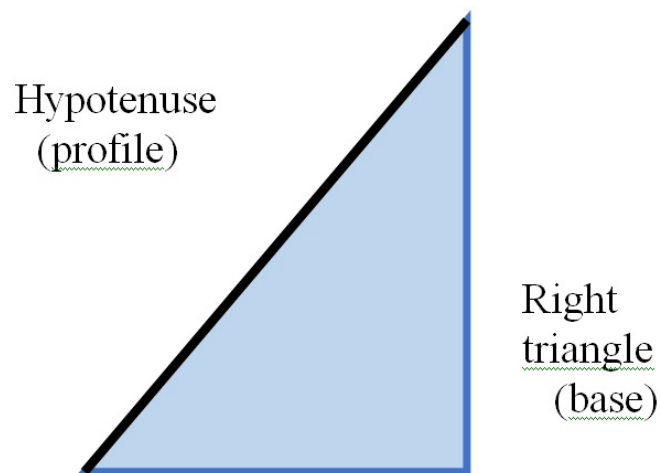

Figure 1. The image schema

This right triangle functions as the cognitive domain for *hypotenuse,* as it is sketched in Figure 1 representing terms "**base**" and "**profile**" (Langacker 1991: 5). The meaning of *hypotenuse* is given only by the selection of a particular substructure within the **base** for the distinctive prominence characteristic of a **profile**.

The semantic value of the expression does not reside in either the base or a profile individually, but rather in the relationship between the two provided by the INCLUSION link of the profile into the base.

The term "hypotenuse" is also found in the story "Schools and schools" by a well-known American writer O'Henry. The extract vividly depicts the situation between people. It is as follows:

*It is a common custom to refer to the usual complication between one man and two ladies, or one lady and two men, or a lady and a man and a nobleman, or – well, any of those problems – as the triangle. But they are never unqualified triangles. They are always isosceles– never equilateral. So, upon the coming of Nevada Warren, she and Gilbert and Barbara Ross lined up into such a figurative triangle; and of that triangle Barbara formed **the hypotenuse**.*

In the passage the shape of the object is quite diverse – it is an isosceles – that means that this is a triangle with two sides of equal length and the hypotenuse is profiled depending on spatial domain. But the image in the extract elaborates the schematic substructure pertaining to the other domain – not the sphere of mathematics any more, though it is represented by the same lexeme *hypotenuse.* It forms more composite social relations, where we observe a different base profiled to representing CAUSE-CONSEQUENCE relations between individuals, which are clearly seen in the narrative and plot of the story.

We can easily find that the dependence upon the conceptual domain is regarded in any contextual usage in the language of mathematics: *The sine is the opposite over the hypotenuse* [BNC FMJ **153**]; *He spoke of a mathematics of colour, Wittgenstein, a Farbmathematik: one knew saturated red or yellow, once experienced, as one knew the nature of a circle or the square on the hypotenuse* [BNC FET **2174**] (See a list of abbreviations at the end of the article).

Very briefly and generally, this means that the analysis of terminological units from LSP of geometry such as *bisect, diameter, hypotenuse* reveal that word meanings are

related to more complex knowledge structures. Their analysis employs the relationship between schematically distinguished image of the object and its **conceptual domain** based on proposition. The whole process of concept understanding is associated with higher conceptual structuring including abstraction and reasoning. These mechanisms are reflected in the schematized character of imaging represented in the concept and of course specified by the word meaning.

Not contrasting the previous description of *hypotenuse*, I'd like to turn to astronomy and the phenomenon known as *eclipse*. It is defined as "total or partial cutting off of the light of the sun (when the moon is between it and the earth), or of the reflected light of the moon (when the earth's shadow falls on it)" (Oxford Advanced Learner's Dictionary 1982: 275). Quite the same definition is found in Wikipedia, the information is as follows: "An **eclipse** is an astronomical event that occurs when an astronomical object is temporarily obscured, either by passing into the shadow of another body or by having another body pass between it and the viewer"(Eclipse, *s.a.*).

The base of the predication here is the space system including such celestial bodies, as the Earth, the Moon and the Sun and their movements relative to each other depending either on a *solar eclipse*, when the Moon's shadow crosses the Earth's surface, or a *lunar eclipse*, when the Moon moves into the shadow of the Earth. Every relational predication shows an asymmetry in the prominence accorded to the entities that participate in the link, presuppose special knowledge and the distinguished choice between the objects of the space system. The cosmic system including the star and the planets is becoming its cognitive domain (or each domain in a complex matrix). The **profile** *eclipse* is a substructure elevated to a special level of prominence within the **base**, namely the substructure "designates" the expression in the piece of the following discourse. Cf.:

Ever since Man could record observations, in stone, in oral tradition and eventually in writing, the power of eclipses *(both* lunar *and* solar*) cannot be underestimated. From the ominous blood red colour of the totally eclipsed Moon to the 'darkness in daylight' caused by a total solar eclipse. Even the apparent loss of portions of the disc can be alarming* (Public talk: darkness and dragons 2015).

In the process of conceptualization of elements (the Sun, the Moon and the Earth) co-occur in human thought and memory; they reveal similarity or even equality appearing as a result of modeling of conceptual structures incorporating INCLUSION, a CAUSE-EFFECT, CAUSE-CONSEQUENCE, ASSOCIATION expressed by English verbal markers *include, produce, cause, participate, increase, decrease, prevent, limit, and a part-whole* relation.

The next example seems to be quite close to the previous ones, it can be readily interpreted like the word (symbol) profiled by a common language noun *address* corresponding to "the number of the building and the name of the street and town, etc., where someone lives or works, especially when written on a letter or package" (Longman Dictionary 1992: 2). It is internally homogeneous and specially bounded within the scope of predication relative to the letter, envelope or package in its primary domain. But this happens if we don't pay attention to other semantic features of the word *address* achieved through the place the object goes and this spatial logic is built on one of the *image schemas* (Johnson 1989; 1990). By the image schema "a schematic structure, which organizes human experience" is meant; it is a repeated dynamic pattern of our perception and motor programs that give the linkage and structure to our understanding of some piece of the surrounding world. The image schema of the word *address* belonging to common knowledge is represented in the first part of figure 2, while the appearance of the terminological meaning in the sphere of telecommunications is specified in the second part of the picture. The evolution from the meaning of the lexeme *address* to the terminological meaning in the sphere of telecommunications was given by Orel (Орёл 2005).

The source-path-goal schema is based on figure/ground organization identified by the roles (relations) specified by the set of descriptions:

1)   There is an objector the participant;
2)   There is some starting point of the source location of this object or participant;
3)   It moves along the trajectory;

4)   The trajectory moves in some direction;

5)   The mover (or the other object distinctions) are associated with the *landmark* relations;

6)   The goal is the final location of the trajectory and it may appear as an intended destination of the trajectory (Lakoff & Johnson 1999: 33).

The term *address* corresponding to the word *address* inherits the semantic roles of the lexeme from LGP, where various kinds of information are becoming important to reach the location. The term specifies the "part of the signal that defines the destination for a call" (Graham 1991) in the sphere of telecommunications and the extension of the schema is observed in the examined term – it is a part of the signal now (see fig. 2).
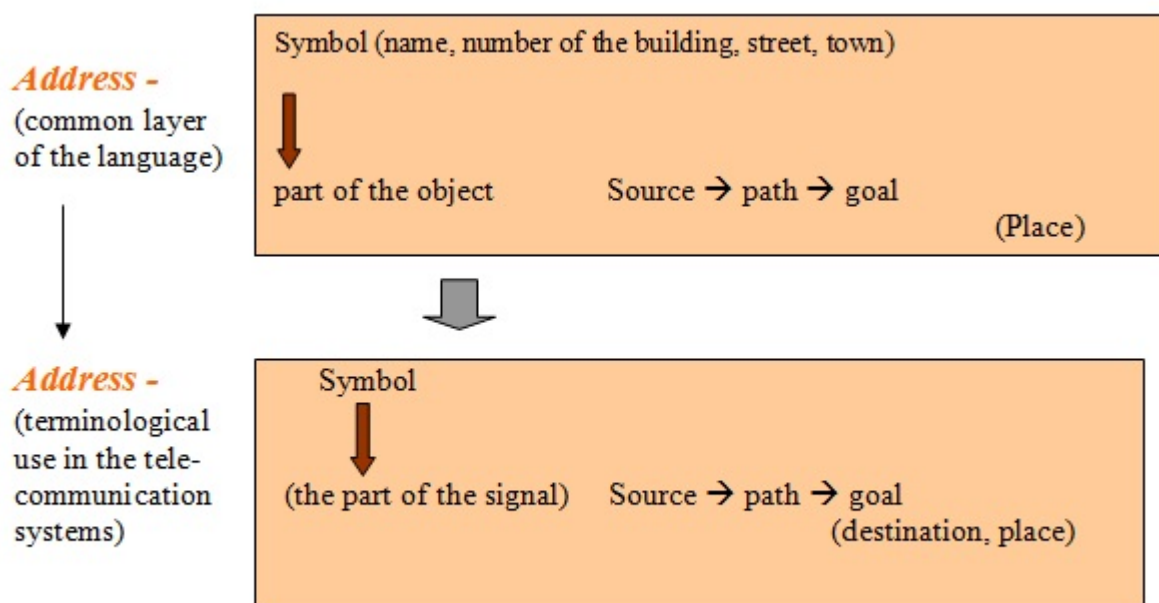

Figure 2. Semantic and conceptual changes in the term *address*

The presented schema of the terminological unit motivated by the common language lexeme is purely topological in the sense that a path is not specified, but still it remains a path. Trajectories are imagined insofar as they are entities in the world; they are conceptualized as a line-like "trail" left by an object as it moves and is projected forward in the direction of a motion. We can form spatial relations from this schema by the addition of **profiling** and a trajectory-landmark relation. The concept expressed

by *to* profiles the goal and identifies it as the landmark relative to which the motion takes place. The concept expressed by *from* profiles the source, taking it as the landmark relative to the motion.

The semantic change of the terminological unit refers to the narrowing of meaning in the sphere of telecommunications bringing forth its specialization, though in other terms, such as *path* and *communication* from the same sphere of modern telecommunication systems it is confined by possible values leading to the widening of the term semantics or even generalization. Relations of schematicity become very important in understanding what exactly happens to the content side of the terminological unit in the domain of special discourse.

The **conceptual mapping** as the next kind of the simple format of personal experience determines the organization of some knowledge structure about the world, particular immediate context and human knowledge of linguistic means necessary for the description of a concrete situation. It corresponds to metaphor and metonymy, occurring in the process having much in common with the previous one. The choice of simple or complex representations depends here on the communicative situation and what piece of reality we are to conceptualize.

Thus, in the English word *slave* the subordination and influence of one person over the other is indicated. The definition of the lexeme *slave* has the correspondence to two meanings*:* "1) someone who is legally owned by another person and works for them for no money; 2) to be completely influenced by something so that you cannot make your own decisions" (Longman 1992: 1349). In the terminological unit *slave* the relations between two devices are presented, because it is defined as "a device controlled by another device" (Webster & Spencer1992: 385), e.g.: *master/slave (technology)* is a model of communication where one device or process has unidirectional control over one or more other devices. In some systems a master is selected from a group of eligible devices, with the other devices acting in the role of

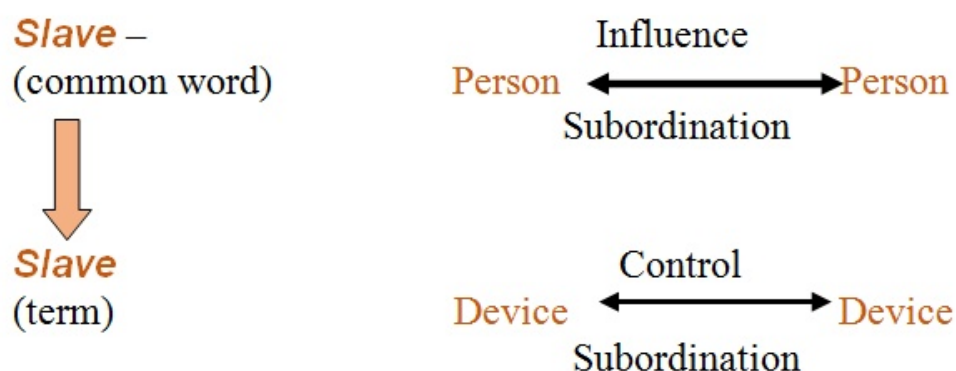slaves (Master/slave (technology), *s.a.*). This link is illustrated in Figure 3:

Figure 3. Semantic and conceptual transformations in the term *slave*

The conceptualization of terms implies metaphorical expression; it is underlined by Alekseeva, who stresses that "the use of metaphor as a newly created concept is the expression of the subjective character of terminological creative work" (Алексеева 1998: 93). This metaphorical representation is observed in another example with *motor-boating* usually associated with material or people transportation and noises produced by the motorboat engine. These noises are compared with the processing of equipment and problems arising within it in the technical sphere including systems of radio and telecommunication, cf. the definition of the term *motor-boating* in the dictionary: "low frequency relaxation oscillation in an amplifier, arising from inadequate decoupling of common sources of current supply" (The Wordsworth Dictionary 1996: 588).

It becomes obvious that metaphorization is the basis for the term-formation, because a composite scientific notion is designated by means of a natural language. The terminological corpus of professional discourse develops not with the help of newly created terminological units, but is mostly driven by the new content prevailing in the composite semantic structure. It may be projected from older units or represent the designation of the old word-form tied up with the conceptualization of more abstract notions on the basis of the general picture of the world, primitive representations connected with our bodies and space, and our embodied experience.

The complex expressions of specialized discourse of modern technique are represented by derivative units and word-groups or word-combinations (the last term was introduced by Vinogradov (Виноградов 1975)). These terminological units are cognitively and contextually grounded, because "they act as the building block from which special English sentences are constructed because they possess certain inherent qualities which enable them to perform the task of communicating information effectively and efficiently" (Sager, Dungworth & McDonald 1980: 219). They provide evidence in favour of interaction between cognitive conscious and unconscious, so they are usually regarded to have the most complicated relations among the simple class of conceptual representations.

Moreover, the conceptual data represented in such complexes serve a framework uniting other elements in any text. What characterizes properties specified in such complexes is that they "principally engage the perceptual system, and secondarily the system of general world-knowledge about objects" (Landau, Smith & Jones 1998).

The study of complex nominative units is based on the idea elaborated in papers of Koubriakova, who described the "cognitive-onomasiological modeling". The procedure includes two steps of research (see Манерко 2000; Manerko 2004b). It starts with the categorization process, which allows to distinguish two parts of the nominal phrase, e.g.: *geometric wing aircraft* is marked by the structure consisting of two parts – [(geometric wing) (aircraft)] and *open field cryotron* by [(open field) (cryotron)]. That entails that the meaning of the head-member component of substantive complexes – an *aircraft* or *cryotron* – indicates an object, or in other examples from the analyzed corpus of phrases corresponds to conceptual entities of action, process or event. The analysis shows that the choice between these cognitive categories is not sufficiently numerous. The same is happening to the meaning of the modifying element, which specifies one of the conceptual domains, it may correspond to a part of an object, place, and other features. The remaining part of the meaning will result from the relationship

between elements of the noun phrase and the context specifying it (see fig. 4), in which the nominal structure is used. The reconstruction of the relations between the onomasiological basis and the onomasiological sign constitute the second stage of the analysis, leading to the kind of proposition expressed by the onomasiological meaning of the whole word-group:

[(geometric wing)   *(aircraft)]*

Onomasiological   Predicate   Onomasiological
basis   sign

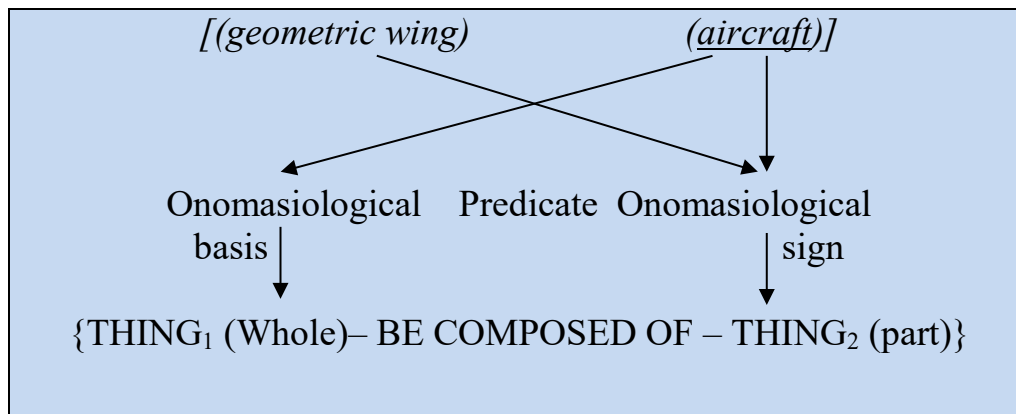$\{THING_1 \text{ (Whole)} - \text{BE COMPOSED OF} - THING_2 \text{ (part)}\}$

Figure 4. The cognitive-onomasiological modeling
of the English word-combination *geometric wing aircraft*

The analysis based on categorization and linguistic inference based on propositions helps understand the associative networks that express the interrelation between general and special knowledge of the world represented in the mind of a human being.

6. Complex ways of terms' conceptualization in academic discourse

All the simple representations described earlier in this article are interacting with the more **complex structuring** in the sphere of terminology. They are associated with the more complicated conceptual organization. The choice of simple or complex representation depends on the material, methodological technique and purpose of research. Complex structuring can be represented by mental spaces (blending) theory, categories based on prototypical relations, frame semantics, cognitive matrices, scenarios, gestalt structures and cognitive maps. Let me suggest several examples of the aforementioned complex structures.

The theory of conceptual blending or idealized cognitive models (Fauconnier 1999) differentiated between conventional blends and wholly original creations. In this theory, there are two input spaces associated with the initial generic space. Distinct conceptual domains are co-activated and under certain conditions, connections across the domains can be formed further leading to innovative inferences. Inferences allow highlighting further indirect comprehension of intensions, motives, and evaluation of the creator of the text and elucidating functional-pragmatic status of the analyzed speech. The space created by a partial cross-space mapping projects from both inputs into a third space: the blend, elaborated dynamically. This elaboration yields the emergent structure of the new blended space.

The analysis of mental spaces seems helpful in understanding the compositional nature of the linguistic meaning since the framing of mental spaces is based on cognitive principles and represents semantic changes and shifts occurring while making meaningful choices in nominal structures involving human interaction.

The analysis of the compound terminological unit *ugly duckling stage* from the LSP of dentistry (Дудецкая 2007: 9) corresponds to "a development stage in the mixed dentition when the central and lateral incisors may be flared, with the crowns distally and with diastema present before the maxillary canine teeth erupt" (Dorland's medical dictionary 2003: 1748). The method of conceptual integration includes three stages (Manerko & Novodranova 2012):

1) the extraction of distinctive features of the object in reality is represented in input space 1 of figure 5. The semantic components of the meaning of a well-known tale hero "ugly duckling" are presented in the definitions of the language units, e.g.: *ugly* is unpleasant to look at and hideous, *duckling* – a young duck, and *ugly duckling* – plain or stupid child who grows up to be attractive or brilliant;

 2) the further development of the conceptual content on the basis of semantic features of both concepts is presented in input space 2. Here we find the features biased towards the tale character and physiological development of the child's teeth. This stage of

analysis is associated with the description of conceptualization, which is "…one of the most important cognitive processes of a human being, pertaining to thinking. It arises from sensory information about objects in reality leading to concept formation, more complicated conceptual structures and the whole conceptual system in the mind of a human being" (Кубрякова 1996: 93). The process of conceptualization is closely linked with categorization leading to stage 3;

3) this stage includes the choice of the language means, when a nominative unit is chosen according to its lexico-grammatical and syntactical characteristics tied to the motivation and purpose of naming in a special context.
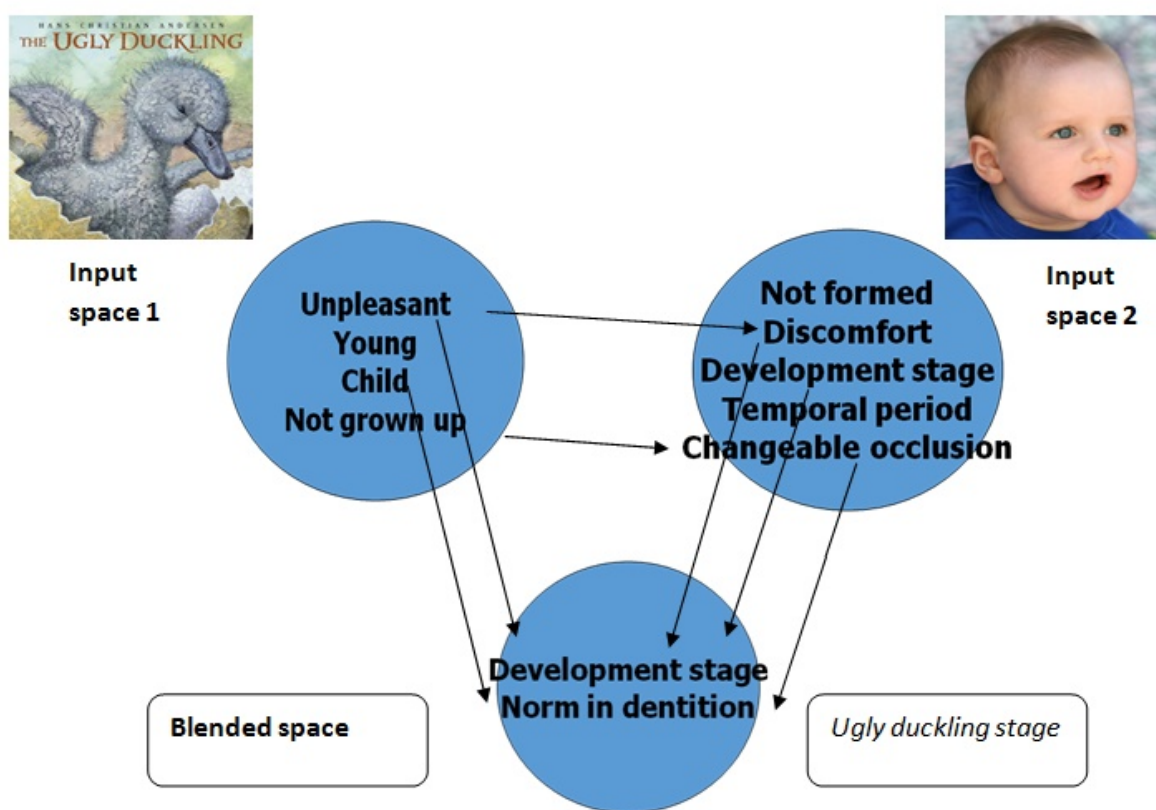

Figure 5. The representation of conceptual integration
In *ugly duckling stage*

Taking into account the whole corpus of complex terminological units and all the types of cognitive models in terminological word-combinations registered in texts we can speak about categories based on prototypical relations. The category is regarded to be the system of knowledge uniting the results of human experience in a certain domain

of activity and discourse. The cognitive-onomasiological modeling based on propositional-linguistic information used in discourse of modern technique incorporates up to 45 kinds of relations between the onomasiological basis, onomasiological sign, in which the onomasiological predicate unites them in terminological noun complexes. The most prototypical relations among word-combinations belonging to the specialized discourse of modern technique are {THING – BE CHARACTERIZED BY – FEATURE}, {THING – BE USED FOR – PROCESS (GOAL)} and {THING (WHOLE) – BE COMPOSED OF – THING (PART)} (Манерко 2000; Manerko 2004b). In English terminology of telecommunications the prototypical relations of the investigated category are quite different: {THING – BE USED FOR – OPERATION} and {THING – BE of – type (kind)} (Орёл 2005). They reflect the process of fixation, as well as transmitting, receiving and storing the information.

The conceptual space of professional discourse is furnished by the referential elements, propositions help advance the background information together with some deictic elements. Such a conceptual space is clearly revealed by the blending theory and frame semantics.

Frame semantics is one of the ways of reflecting the surrounding links in extra-linguistic and linguistic reality. A frame can perform 3 functions. It 1) reflects a structure of a certain type of human activity; 2) is the result of its cognition; and 3) records the received knowledge in human consciousness. Based on categorization, frames include elements of higher and lower units of representation. The frame introduced in the following schema systematizes the data corresponding to the terminological category of artefact names in English. Propositions reflected in the set of simpler representations of cognitive-onomasiological modeling are observed in Figure 6.

```
                    HAS,            →   Part, feature,
              be characterized by,       property,
              be composed of, use,       means, other
                be of (kind), …          smaller objects

EVENT → THING  →    Cause,         ————————————→    Function
              be used for

                     IS,           →   Place, other
                  occur in,             larger objects,
              be characterized by,      people, part,
                 go from…to,            movement, time
               be situated in, …
```
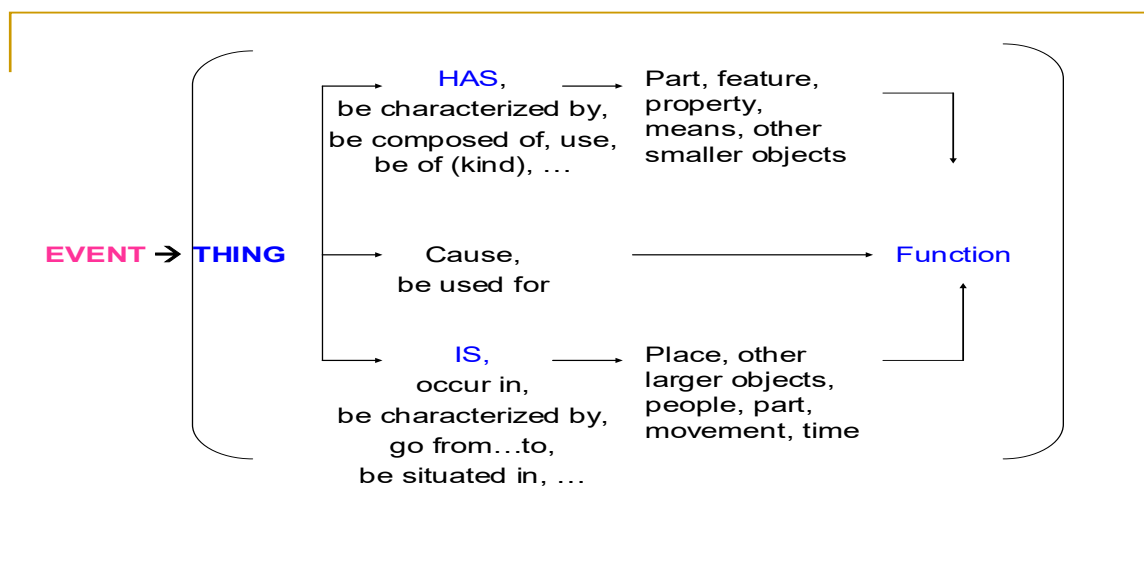
Figure 6. Cognitive-onomasiological modeling of the category THING

in the discourse of modern technique

The notion of framing linked with the category of THING in the communicative event is developed on the basis of some particular passages of specialized discourse. Some of the elements can be transformed as they are represented in the analysis of the extract from the speech of the Nobel Prize winner Reines, who pronounced his famous lecture "The Neutrino: from poltergeist to particle" in 1995 (See the detailed analysis of the text in Манерко 2004a).

7. Conclusion: How conceptualization helps understand knowledge structures in professional discourse

The development of the term description in relation to the concept was regarded to be one of the main issues of terminological science. Traditionally based on logical features defining the meaning of the term it limited the scope of investigation to an unambiguous unit of thought. Trying to overcome these limitations aimed at optimization and standardization tendencies Terminology and LSP studies widened the research bringing forth the system-oriented and text based conceptions.

The cognitive approach changed the shape of linguistics and terminology. It tries to

explicate language in its material representation and mental things concealed from our observation, but still deeply entrenched with human consciousness and understanding of conceptualization. In the present article it is shown that cognitive terminological research describes the semantics of terms on the basis of the conceptual level of representation, which is a much deeper introspection into propositions, inner predication, and many other things, pointing at reliable correlation between verbal and non-verbal coding of human experience, cognition and inferences.

Terminological sphere and professional discourse helps specify our outer and inner knowledge, where it becomes essential to describe phenomena conceptually, cognitively, and contextually, if we want to know more about human understanding, cognition and communication. In the article various types of knowledge structures are focused on, while dealing with conceptualization as a way of term formation generated in the special discourse flow. Conceptualization is reflected in different types of substantives, nominal complexes in the sphere of modern technique, and academic discourse. It is highlighted that the system of simple conceptual structuring is based on the combination of at least two knowledge structures, including perception, comparison, abstraction, and categorization represented in image schemas, propositions, and conceptual metaphor. The complex structuring in terms is based on multi-component and dynamic knowledge organization representing contextual situations in specialized discourse.

Simple and complex formats of knowledge point at the possibility of distinct arbitrary directions shared by the linguistic community, using common language, LSP and professional kinds of discourse. They represent variation of methodological techniques and operations introduced by cognitive research possibilities penetrating the inner process of human thinking represented in special communication. These research techniques are becoming more cognitively and communicatively realistic that can adequately describe the complexity of the object of study.

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Abbreviations:

BNC – British national corpus, those abbreviations marked as [FMJ](#) 153 or [FET](#) **2174** are given in the text of the article correspond to numbers of examples registered in the corpus.

ISO – the International Organization for Standardization.

LGP – language of general purposes.

LSP – language of specific purposes.

TC – technical committee.

Contact details Larissa Manerko, DSc. (Philology), Professor, Head of the Chair of the Theory and practice of the English language, Higher School of Translation and Interpretation, Lomonosov Moscow State University, Leninskie Gory, 1, Moscow, 119991, Russian Federation e-mail: wordfnew@mail.ru		**Fields of Interest** Lexicology and history of the English language, linguistic theories and history of linguistics, cognitive linguistics, terminology and LSP, professional discourse.

Résumé in English

The study of a concept as an element of human thought and its relation towards a term was in the focus of linguists and terminologists throughout the 20th century. The terminological domain of knowledge defined the development of traditional terminological science and further on the LSP studies. The objective of the article is to highlight the understanding of conceptualization in cognitive terminology, to show how people explore the world, how they embody their thoughts in knowledge structures. The investigation of a term conceptualization is of crucial importance now, because it reveals the dynamic character of human cognition in scientific thinking, the nature of conceptual organization of special knowledge based on linguistic and extra-linguistic factors, and the influence of cognitive systems directly affecting terminological systems and professional discourse. Terminological studies are grounded by means of cognitive models framework and a usage-based study. The methodological cognitive techniques include the division of terminological units according to simple and complex formats of knowledge organization. The simple knowledge structures, which give access to the dynamic processes of human thinking are revealed in special discourse on the basis of sensory and image schemas, propositions, cognitive mapping based on conceptual metaphor, and/or metonymy. The

representation of human conceptualization relates to complex cognitive operations in professional communication. Here we refer to mental spaces, cognitive-onomasiological modeling, and variation in the category revealed by prototypical relations, frame semantics, cognitive matrices, scenarios, gestalt structures, and cognitive maps. All of them are based on mental organization of human knowledge structures in scientific thinking and professional discourse.

Key words: terms, terminology, language for specific purposes, cognitive terminology, conceptualization, knowledge structures, professional discourse.

Résumé in German

Die Hauptidee, die im Laufe des 20. Jahrhunderts die Aufmerksamkeit der Sprachwissenschaftler erregt, ist die Erforschung eines Konzepts als Elements des menschlichen Denkens und dessen Beziehung zum Terminus. Diese Problematik bezieht sich auf die terminologische Wissensdomäne, die die Entwicklung der traditionellen Terminologielehre sowie der Fachsprachen bestimmt hat. Das Ziel des vorliegenden Artikels ist es, die Auffassung der Konzeptualisierung in der kognitiven Terminologie zu definieren. Die kognitive Terminologie zeigt auf, wie Menschen ihre Umwelt erkunden, diese reflektieren und in Wissensstrukturen umsetzen. Die Untersuchung der Konzeptualisierung eines Terminus ist heutzutage sehr relevant, weil sie die Dynamik der menschlichen Kognition im wissenschaftlichen Denken, die Art der konzeptuellen Organisation des Spezialwissens auf Grund der sprachlichen und außersprachlichen Faktoren, den unmittelbaren Einfluss der kognitiven Systeme auf Terminologiesysteme sowie Fachdiskurs erschließt. Diese und viele andere terminologische Forschungen lassen sich durch die Gesamtheit kognitiver Modelle und die Untersuchung der Funktionsmerkmale der Sprache begründen. Methodologisch kognitive Ansätze umfassen die Aufteilung der Terminologieeinheiten in einfache und komplexe Formate der Wissensorganisationsformen. Einfache Wissensstrukturen, die Zugang zu dynamischen Denkprozessen ermöglichen, werden im Fachdiskurs durch Sinneserfahrungen und Bildschemata, Propositionen sowie kognitive Korrelationen

unter Einbeziehung von Metaphern und/oder Metonymien sichtbar gemacht. Eine höhere Variabilität menschlicher Konzeptualisierung entspricht den komplexen kognitiven Operationen in der fachlichen Kommunikation. Dazu gehören mentale Räume, kognitiv-onomasiologische Modellierung, die von prototypischen Beziehungen bestimmte Variabilität innerhalb einer Kategorie sowie Frame-Semantik, kognitive Matrizen, Szenarien, Gestaltstrukturen und kognitive Karten. Erwähnte Typen der Strukturen beruhen auf mentaler Organisation des menschlichen Wissens im wissenschaftlichen Denken und Fachdiskurs.

Stichwörter: Terminus, Terminologie, Fachsprache, kognitive Terminologie, Konzeptualisierung, Wissensstrukturen, Fachdiskurs.

Résumé in French

Au cours du 20ème siècle l'étude de la notion, en tant qu'élément de la pensée humaine et sa corrélation avec le terme, est devenue l'idée principale qui a attiré l'attention des linguistes et terminologistes. Ce problème appartient au domaine de la terminologie qui a défini le développement ultérieur de la terminologie traditionnelle et des langues de spécialité. Le présent article a pour but de montrer la vision de la conceptualisation dans la terminologie cognitive qui étudie la façon dont les gens contactent avec le monde et le reflètent dans les structures de la connaissance en les comparant avec les structures de l'analyse linguistique. L'étude de la conceptualisation d'un terme semble cruciale puisqu'elle fait preuve du caractère dynamique de la cognition humaine dans la pensée scientifique, de la nature de l'organisation conceptuelle d'une connaissance spéciale sur la base des facteurs linguistiques et extralinguistiques, de l'impact des systèmes cognitifs qui ont une influence directe sur les systèmes terminologiques aussi bien que sur le discours professionnel. Cette recherche en terminologie parmi d'autres peut être clarifiée par le biais de l'ensemble des modèles cognitifs et les études de l'usage de la langue. Les techniques méthodologiques cognitives comprennent la division des unités terminologiques entre les formats simples et complèxes de l'organisation de la connaissance. Les structures simples qui ouvrent l'accès aux

processus dynamiques de la pensée peuvent être révélées dans le discours spécial en basant sur l'expérience sensuelle, les schémas imagés, les propositions, la représentation cognitive basée sur la métaphore et/ou la métonymie. La représentation de la conceptualisation humaine correspond aux opérations cognitives complèxes dans la communication profesionnelle. Cela comprend les espaces mentaux, la modélisation cognitive et onomasiologique, la variabilité au sein d'une catégorie qui est définie par les relations prototypiques, la sémantiques des cadres, les matrices cognitives, les scénarios, les gestaltes et les cartes cognitives. Ces types de structures se reposent toutes sur l'organisation mentale de la connaissance humaine dans la pensée scientifique et dans le discours professionnel.

Mots-clés: les termes, la terminologie, langue de spécialité, la terminologie cognitive, la conceptualisation, les structures de la connaissance, le discours professionnel.

Résumé in Russian

Исследование концепта как элемента человеческой мысли и его отношение к термину привлекало внимание лингвистов на протяжении XX столетия. Терминологическая область знания определяла развитие традиционной терминологической науки и показывала дальнейшее развитие языков для специальных целей. Цель данной статьи состоит в том, чтобы показать, как понимается концептуализация в когнитивном терминоведении, где изучается то, как люди приобретают опыт от общения с миром, что они думают об окружающей среде и как воплощают эти мысли в структурах знания. Рассмотрение концептуализации термина представляется важным в данный период, так как она раскрывает динамический характер человеческой когниции в научном мышлении, природу концептуальной организации специального знания на основе лингвистических и экстралингвистических факторов, влияние когнитивных систем, напрямую воздействующих на терминологические системы и профессиональный дискурс. Терминологические исследования получают своё обоснование в процессе изучения функциональных особенностей

языка благодаря совокупности когнитивных моделей. Методологические когнитивные приёмы включают деление терминологических единиц на простые и сложные форматы организации знания. Простые структуры знания, обеспечивающие доступ к динамическим процессам мышления, выявляются в специальном дискурсе на основе чувственного опыта и образных схем, пропозиций, когнитивной корреляции, опирающейся на метафору и/или метонимию. Большая вариативность человеческой концептуализации имеет отношение к комплексным когнитивным операциям в профессиональной коммуникации. Сюда относятся ментальные пространства, когнитивно-ономасиологическое моделирование, вариативность в составе категории, определяемой прототипическими отношениями, фреймовая семантика, когнитивные матрицы, сценарии, гештальтные структуры и когнитивные карты. Указанные виды структур основываются на ментальной организации человеческого знания в научном мышлении и профессиональном дискурсе.