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Some Aspects of Cognitive and Ideographic Characteristics as a Means of Professional Terminological System Description

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Abstract*:*

The aim of the paper is to propose the methodology, and to summarize some of the results of our methodology of cognitive and ideographic description of the oil and gas business terminological system, based on its logical and conceptual analysis, carried out within the framework of cognitive spheres I. "Nature". II. "Man". III. "Society". IV. "Cognition (a priori)". Having carried out the research we can state that the methodology proved its applicability to the oil and gas business term-system description and can also be used when describing other terminology systems.

Keywords*: cognitive sphere; logical and conceptual analysis; ideographic description; term; terminological system; ideographic dictionary; lexical-semantic group.*

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1. Introduction

Modern linguistics has gained a wealth of experience (OR: a great deal of) experience in studying phenomena related to the description of human's occupation and his professional discourse, as well as in professional term-system description. But nowadays scholars note modern shift to study languages not only "in itself and for itself" but to studying it in close connection with human consciousness, his cognition, culture and professional practice, i.e. shift toward closely connected to cognitive language study anthropological and civilizational linguistics (see such scholars as E.S. Kubryakova , L.V. Ivina, I.G. Ruzin, G. Lakoff, M. Johnson, A.G. Shaikhulov, Z.R. Pal'utina). So, the problem of a new approach to terminology study appears very important nowadays.

The purpose of this article is to outline our experience of professional terminology study and description according to these modern science trends. Thus, for example, linguists state that scientific phenomena should be studied first and foremost according to their role for a human being, their assignment for human personality development and improvement (1, c. 212). Basing on this message we suppose that oil and gas sector terminology system should reflect true and clear understanding of the level of human knowledge of oil and gas industry.. Being constantly subjected to human purposeful activity, it constantly keeps being shaped and altered under the influence of the serving its needs science development level. The term system under study enables us to ascertain specific oil and gas field terminology characteristics every new term unit of which is to acquire similar structural and semantic characteristics.

The study investigated the hypothesis that the methodology of cognitive-ideographic description is applicable for modern terminology systems and allows scholars and subject specialists to systematize terminology, identify structural, semantic, nominative, motivational and functional characteristics of composing them terms.

2. Method

We can justify our idea of oil and gas term unification into a separate investigation object by our observation that the elements of this term-system represent structurally and communicatively interacting term units. Term units of the term system under study have common logical, structural and semantic features, uniform word form building and derivational characteristics stating logical and semantic relations between them and affecting term system formation.

Studies in modern lexicology stress the idea that full and thorough study of a language lexical system is possible only by compiling its thesaurus, where it is possible not only to outline paradigmatic relations but also show typical combination models of lexical units (Moskvin (1997), Shaikhulov (2001), Tabanakova (2001) and others). In their ideographic studies these scholars point out that not any single study of a language lexical system can fully depict its dividedness. This task can only be solved by compiling ideographic dictionaries the very core of which is based

on the principle of studying the full volume of language lexical system, concurrently reflecting the basic principles of its formation – integrity, continuity, hierarchical pattern and inclusiveness. Ideographic dictionaries, as the scholars' state, make it possible to represent the whole aggregate of semantic fields, lexical-semantic groups and other lexeme amalgamations in their co-relation and hierarchical organization (3, p. 43-57; 4, p. 5-22; 5, p. 234; 6, p. 20 and others). In line with the above we propose our holistic and systematic approach to building ideographic oil and gas business term unit's paradigm.

Scholars believe ideographic dictionaries alongside with other types of dictionaries (analogical, associative, synonymic, semantic, subject-thematic and others) to be a means of a particular terminological systems term units description and at the same time enable us to represent the term system as a set of concepts each having own specific structure and comprising lexemes of relatively equal semantics. And the ability of ideographic dictionaries to systematize not only ideas and concepts but knowledge as a whole linguists consider being their core value (Morkovkin, 1970; Karaulov, 1976, 1980; Shaikhulov, 2001).

For the foregoing reasons we consider the methodology of studying and describing the oil and gas business terminology system lexical units basing on the proposed by Professor A.G. Shaikhulov "Nature" (alive and not alive), "Man" (as an alive biological, perceiving, willing, thinking and speaking being), "Society" (a man as a social being) "Cognition (a priori)" cognitive ideographic paradigm. The author himself has worked out his thesaurus' principles basing on the works of such linguists as P.M. Roget, 1839, 1952, 1984; I. Casares, 1941, 1959; R. Hallig and W. Wartburg, 1963; V.V. Morkovkin, 1970; Ju.N. Karaulov, 1976.

3. Nomination Principles

Objects and reality phenomena create in human mind generalized representations (images) that exist in our minds in the form of concepts. The concepts are objectified and materialized in human speech by means of sound shells (words). Thus, nomination of a subject is the process of comprising a specific word sound complex with its generalized object's mental image in the mind of human.

After Prof. V.N. Teliya, we understand the term "nomination" as "the formation of linguistic units, characterized by nominative function, i.e. serving for nominating and singling out reality fragments and forming their corresponding concepts in the form of words, word combinations phraseological units and sentences" as well as "the result of this process - a significant language unit" (Teliya, 1998, 336).

As opposed to a word – language element for general purposes – the process of a term formation is a more complex and it cannot be spontaneous because of its correlation to the new reality phenomenon whose nomination is one of the cognition process elements. In addition to the above nomination can occur at any stage of the cognitive process. The choice of a particular language sign for fixing concepts

depends on the professional experience of a specialist, his knowledge of special concepts having characteristics similar or opposite to the concept to be nominated, so that the associations arising in the process and as a result of specialist's mental activity result in conscious naming of professional phenomena and formation of a motivated term unit, i.e. to a nomination formed as a result of conscious professional or scientific activity. As is clear from the material and the results of our study, the oil and gas business terms creation experts are guided by the three main principles: 1) relying on their own national language resources principle; 2) terms translation principle (borrowings, loan-words); 3) amalgamation principle (other various interconnected industries achievements synthesis both general scientific and specific to a particular business – chemistry, physics, mathematics, geology, electrical engineering, hydraulics, mining and others.

Thus, and this opinion is also supported by the other researchers findings, terminological nomination is a "mediated by thinking process of naming specific concepts from different fields of human activity" (Harlitsky, 2003, 12). New terms are created in accordance with the principles and rules of a particular national language basing on specialists' professional knowledge and experience since the main purpose of the term is to ensure the efficiency of industry specialists' communication process.

For lexical objectification and motivation of concepts it is necessary, firstly, to single out a distinctive feature of existing in the mind concepts and to relate it with a feature within the meaning of existing in the language words, which becomes the material basis for a new lexical unit. Then, by using non-distinctive abstract feature of the concept a classifier is sought (a language unit indicating an abstract classifying feature) and a derivational model creating a new sound shell and its combination with the ideal content (concept). The authors suggest that this nomination method consisting in creation of one word from another, i.e., in using sound complex, meaning any of the features inherent in the new nominate is the most common. Researchers schematically represent nomination process as follows: motivator + classifier + derivational model + concept → nominate (Zhuravleva, 1995, 24-25). The problem of naming reality fragments by means of words and using whole sentences from the middle of the twentieth century have been discussed in the works of renowned linguists (V.G. Gak, 1972, V.N. Teliya , 1977, 1981; A.A. Ufimtseva, 1962; B.A. Serebrennikov, 1977).

It has become a tradition among linguists to single out two principles of naming reality objects – primary and secondary. The primary nomination is understood as "the linguistic reality and the sound shell ratio, acquiring naming function for the first time" (Serebrennikov, 1977, 73). In some researchers' works under the term "primary nomination" is understood an antiderivative word, the derivativeness of which may be disclosed only with the help of etymological and historical analysis. Secondary nomination results are perceived as arbitrary by morphological structure or meaning. The fundamentals of secondary nomination processes is the human

mind, which builds sets of associations basing on similarity or contiguity between certain properties of already existing nominate elements and of the new nominate properties (Teliya, 1998, 336). Primary nomination is a process of naming reality objects with the help of non-derivative words. The result of the primary nomination is an unmotivated lexical unit. The primary nomination results are usually stylistically neutral and represent the basic name of the object.

Secondary nomination is the process of the outside world realities naming by means of derived language units, which is realized by virtue of word-formation and semantic nomination. Secondary nomination is a phenomenon characteristic of many languages at the moment, as modern languages lexical fund replenishment mostly occurs due to new word-formation and by transfer of meaning. The nomination principles is the starting position, the rules, which are formed on the basis of summarizing the motivating features by the group of speakers and at the same time serving as a basis for new names. Thus, for example, basing on generalized reasoning about color, smell, taste and so on when naming plants nomination on the attribute principle is formed. On the basis of summarizing motivating features associated with the use of plants in household, medicine, manufacturing and so on the principle of nomination by the function (purpose, use, role) is formed. Therefore, nomination principle is a semantic meaningful category fixed in the speakers' minds.

3.1. Primary Nomination

Basing on the proposed by Prof. Shaikhulov synopsis (Greek synopticos – 'observing all together') we were able to single out in the term-system under study the following lexical-semantic groups of term units (only some of the examples):
Within the cognitive sphere "Nature":

I. Nature (non-living and living)
1. Material world (both inorganic and organic world)
1.1. Inorganic world
1.1.1. Earth (planet) and terrestrial space species
1.1.1.1. Terrestrial space. Coordinates space coordinates; polar coordinates
1.1.1.2. Shape (landscape) and the Earth surface structure
1.1.1.3. Types of shapes volcanic topography; natural landscape; moraine topography;
1.1.1.4.1. Positive relief Alpine relief; mountain-valley topography; mining and relict relief; mountainous relief;
1.1.1.4.2. Smooth relief valley; insequent valley; closed valley; submerged valley;
1.1.1.4.3. Negative land form sedimentary basin; artesian basin; inland and gas-bearing basin;
1.1.1.4.4. Geological structure dependent relief structural relief; stepped relief; subsurface structural relief; erosive landforms;
1.1.1.5. Composition of the Earth's crust
1.1.1.5.1. Top layer of the earth crust deposit; basin; limestone deposit; kaolin deposit; sour oil reservoir; oil and gas reservoir;
1.1.1.5.2. Mineral resources
1.1.1.5.2.1. Fossil fuels gas; biochemical natural gas; in-situ combustion gas; oil; petroleum; asphalt-base petroleum; naphthene-base crude; oil rich in paraffin wax; volcanic origin oil; anthracite coal; ash-free coal; pitch coal; gloss coal; specular coal; lignite charcoal; algal coal; gas shale; bituminous shale;
1.1.1.5.2.2. Non-metallic mineral resources

1.1.1.5.2.2.1. Constructional material siltstone; highly argillaceous siltstone; coarse siltstones; high yield clay; salt-water-dispersible clay; clay in situ; low yield clay; asphaltic limestone; biogenious limestone; biochemical limestone;

1.1.1.5.2.2.2. Ragstones bastard granite; gneiss granite; water bearing dolomite; oil-saturated dolomite; oolitic dolomite; porphyries; quartz;

1.1.1.5.2.3. Ores aluminum ore; supergene ore; graphite ore; brown iron ore; red iron ore;

1.1.1.5.2.4. Minerals agate; azurite; aquamarine; alexandrite; diamond; caustic barite; ooli

1.1.1.5.2.5. Hydromineral resources bitumen deposits water; water in minerals; ferruginous water; calcareous water;

1.1.2. Water and types of water space

1.1.2.1. Types of water surface

1.1.2.1.1. Earth water inland basin; river basin; watershed; lake; tectonic lake;

1.1.2.1.2. Water bodies and watercourses features surface water; underground water; ground water; subsoil water; soil water;

1.1.2.1.3. Land on its relation to the body of water lagoon-type coast; submergence coast; valley side; cliffed coast; volcanic island; peninsula; seashore;

1.1.2.1.4. Natural water state

1.1.2.1.4.1. Liquid state meteoric water; combined water; free water; bound water; water in suspension; absorbed water;

1.1.2.1.4.2. Solid state glacier; ice;

1.1.2.1.4.3. Gaseous state vapor; wet vapor; water vapor; wet vapor; dry vapor;

1.1.3. Sets of inanimate objects of nature sedimentary complex; stable minerals group; series of strata; production field; ore bed; ore deposit;

1.1.4. Natural processes water abrasion; wave abrasion; gas accumulation; oil accumulation; low-temperature condensation;

2. Space (the sky): outer space and aerospace. Natura phenomena. Climate weather and types of weather conditions (meteorology). Seasons

2.1. Aerospace (atmosphere)

2.1.1. Composition of atmosphere absolute atmosphere; gas-laden atmosphere; mine atmosphere; standard air; dead air; absolutely dry air;

2.1.2. Natural phenomena

2.1.2.1. Atmospheric phenomena

2.1.2.2. Air movements offshore wind; prevailing wind; air current; air stream;

2.1.2.3. Air temperature and humidity air humidity; absolute humidity; subzero temperature; surrounding air temperature; ambient temperature;

2.1.2.4. Light phenomena daylight time; natural daylight; stray light; visible ray; light ray;

2.1.2.5. Precipitation (atmospheric moisture) source of sediments; atmospheric precipitation; rain; ice cover; ice sheet; snow cover; mist;

2.1.2.6. Thermal (temperature) conditions reservoir temperature; original temperature; freezing point; setting point; solidification temperature;

2.1.2.7. Humidity gas humidity; humidity of rocks; vapor wetness; steam moisture; mineral humidity; peat moisture;

2.2. Organic world

2.2.1. Vegetable world (flora world)

2.2.1.1. Flora resources; inferior plants fungus; brown algae; slime; sludge; abyssal ooze; deep-sea mud; diatomaceous ooze; diatomic ooze;

2.2.2. Wildlife (fauna) amylic fermentation bacterium; an(a)erobic bacterium; decomposer; putrefactive bacterium; cellulose-fermenting bacterium; invertebrate; benthonic organisms; rock-building organism; planktonic form;

A small amount of term-units were possible to single out within the cognitive sphere "Man as a biological, rational being and his needs" in the following lexical-semantic groups:

II. Man as a living biological being

1. Vital human needs

1.1. Clothing overalls; protective clothing;

1.2. Footwear safety shoes; steel-toed shoes;

1.3. Accommodation living quarter platform; hotel platform;

2. Man as a rational creature

2.1. Activities (action, the work of man)

2.2. A man and his professional activity

2.3. Professional affiliation operator; oil man; driller; weigher; weighman; driver; gas welder; drilling engineer; mechanical engineer; record-clerk; mill operator; chargeman; planisher; polisher;

2.3.1. Association of persons according to their occupation crew; drilling crew; workover crew; well stimulation crew; well-starting team;

Within the cognitive sphere "Society" we could distinguish the following lexical-semantic groups of terms:

III. Society. Man as a social infrastructure unit

1. Society relations

1.1. Attitude to work in the oil and gas business

1.1.1. Basic professional activities well drilling; well operation; oil storage; gas transporting; oil and gas refining; environmental protection;

1.1.1.1. Well drilling; boring; reduced pressure drilling; balanced drilling; erosion jet drilling; pellet impact drilling; pier drilling;

1.1.1.2. Well operation field development; water flood operation; exploration; well operation; pipeline maintenance; running the rig; gas lift production; gas lift; air pumping; artificial lift;

1.1.1.3. Petroleum & gas production gas recovery; natural gas production; condensate recovery; flush production; crude production; extraction of oil; petroleum production;

1.1.1.4. Well servicing well servicing; pipeline maintenance; maintenance; day-to-day maintenance; repair; remount; workover

1.1.1.5. Oil & gas storage stowage; bulk storage; tankage; oil storage; high-pressure storage; outdoor storage;

1.1.1.6. Oil & gas transporting transportation; oil transport; pipe conveyance; transportation of radioactive materials; floating of tank; barging;

1.1.1.7. Oil and gas processing oil and gas processing; oil refining; gas processing; thermal cracking; close cut fraction; narrow fraction; short-boiling-range product;

1.1.1.8. Environmental protection environmental impact; atmospheric pollution; air pollution; water body pollution; oil contamination; environment pollution; river pollution;

1.2 Technological operations aerating of drilling mud; bypassing; balancing; mud restoration; pressure build up; flow rate restoration; mud lubrication; well drainage; bottom hole plugging-back; well testing; resistivity logging; subsurface mapping; anchorage; strata bolting; gas recycling; core treatment;

1.2.1. Enhanced oil recovery stimulation of formation; thermal drive; bottom-hole zone treatment; bacterial attack; hot water drive; (of oil); back washing; pilot water flooding; hydraulic fracturing;

1.2.2. Oil & gas treatment operations degassing; oil stabilization; gas purifying; freeze-out dehydration; liquid-desiccant dehydration;

1.2.3. Production activity problems and complications accident; failure; breakdown; engine failure; fatal accident; general average; gross average; shaft wobbing; water discharge; drill string breakage; water inflow; annulus gas showing;

1.2.4. Process safety safety automatics; safety analysis; handling safety; safety in operation; explosion in tank; explosion-proof safety zone; inflammable; refractory materials; fire safety regulations;

1.3. Industrial buildings, structures and objects well; hole; well site; BH (borehole); DDH (diamond drilling hole); fraction tower; multiple-well derrick; production service shop; floorman's house; field laboratory; field shop; water station;

1.4. Implementation means

1.4.1. Drilling equipment

1.4.1.1. Rock destruction tool drill, bore(r), auger; boring cutter; boring head; plugged bit; drill bit; crown for chilled shot;

1.4.1.2. Bottom-hole motors drilling engine; high-speed engine; vertical engine; fluid drive; fluid motor; hydraulic hydroturbine downhole motor; turbodrill;

1.4.1.3. Drill column blank pipe; large-diameter pipe; circulating water pipe; sucker-rod string; flow string; casing string; drilling swivel; pipe stand; thribble; kelly-saver, sub; rotary underreamer; kelly hose;

1.5. Drilling rigs boring rig; drill unit; exploratory oil rig; packaged rig;

1.5.1. Washing equipment

1.5.2. Drilling mud preparation equipment rotary drum mixer; continuous mud mixer; weighing controller; weighing hatcher;

1.5.1.2. Drilling-mud cleaning equipment settling pit; vibratory screen; clarifying basin; clay pit; single-deck shale shaker;

1.5.1.3. Drilling mud circulation system drilling pumps block; hydrocyclone; mud cone; separator cone; drilling-mud tank; mud storage tank;

1.6. Well casing equipment protective casing; surface casing; guide base; permanent guide base;

1.7. Cementing equipment cement log equipment; cementing shoe; liquid dump bailer; cementing pump; multi stage cementing packer;

1.8. Oil and gas production equipment

1.8.1. Production well equipment casing head with tubing hanger; tee-type casing head; casing string; flush-joint casing pipe; seamless casing; hook wall pumping packer; open-hole packer;

1.9. Tripping works mechanization equipment spinning wrench; casing hanger slips; triple sheave travelling block; tubing block.

Within the cognitive sphere “Cognition” we single out such groups as:

IV. Cognition

1. Space interstitial space; pore space; diameter clearance;

1.1. Space filling oil containing area; dead area; mined-out space; open area; stripped area; waste area; worked-out area; formation water gas; gas of stratal water; intermediate; interstitial; transitional intermediate beam;

1.2. Location observation place; place of settling; place of deposition; gauge point; bending point; breakpoint;

1.3. Position in space zone; band; belt; region; shatter zone; flooding zone; lateral migration; lateral moraine; bottom discharge valve; bottom hole pressure gage; surface vibrator;

1.4. Body position in space horizontal well; vertical gasholder; diagonal truss;

1.5. Direction in space anticlinal trend; base direction; rotational direction; movement direction;

1.6. Distance interwell distance; center distance; transmission range (of signals); distant migration;

1.7. Space coordinates Cartesian ordinates; Cartesian positions; curvilinear axials; polar coordinates; space coordinates;

1.8. Placement of an object in space rope reeling; bucking the tool joint; oil-and-gas field distribution; equipment placement;

2. Form

2.1. External parameters form; mode; state; configuration; shelled form; disk-like form; cone form; domed shape;

2.2. Physical form square nut; square well pattern; grief stem; kelly joint; kelly bar; gas bubble; measuring cylinder;

3. Time

3.1. Relationless time

3.1.1. Frequency daily inspection; day-to-day control; annual inspection; annual test; readsorption; repeated load;

3.1.2. Duration round-the-clock process; continuous feed; nonstop feed; production time; oil-accumulation period; recent epoch; the Neogene Period

3.2. Relative time commencement date; completion date; completion of well; closing-up; final set (of cement slurry);

4. Changing

4.1. Qualitative changes upward relief development; productivity impairment; recovery improvement; time change

4.2. Quantitative changes azimuth change; depth change; pressure change; pressure variation; voltage variation; zero shift; production draw-down; revolution drop;

4.3. Replacement refit; restringing; rewiring; bit change; change of tools; chamfer of tool; repacking (of glands);

5. Motion

5.1. Quality of movement advance rate; penetrating speed; air speed; air-stream velocity; air velocity; rate of airflow;

5.2. Interconnected motion oscillating motion; vibration; fluctuation of water table; engine speed fluctuation; fluctuation of level; sea level variations; annular circulation

5.3. Displacement cuttings lifting; core recovery; evacuation of material; gravity flow; swirling motion;

6. Quantity

6.1. Quantitative relations number; quantity; amount of substance; quantity of motion; number of lowered tubes; absolute age;

6.3. Number (numerical system)

6.3.1 Distinctness of quantity monatomic; single-disk; single-groove; double-column;

6.3.2. Quantity estimation fossil abundance; kilocalorie; multi-hole drilling; multicomponent mixture; repeated strain;

7. Size size; dimension; rate; amount; scale; time; extent; length and width size; filler grain size; extension of field; bore size; hole dimension; hole size; pore size;

7.1. Size estimation major disaster; coarse fraction; coarse gravel; leading defect; macroscopic defect; coarse-fibered;

8. Parameters pipeline laying depth; pipeline trench depth; wave length; tooth height, tooth depth, trap height;

8.1. Measurement

8.1.1. Units of measurement barrel; American barrel; English barrel; oil barrel; barrel-bulk; cement barrel

9. Quality

9.1. Overall quality assessment quality; service quality; line transmission quality; performance quality

4. Indirect nomination

Terms formed basing on the principle of indirect nomination was also studied within the above mentioned cognitive spheres. T.G. Panina (2012, 22) explains the mechanism of indirect nomination as follows: “In the process of reality studying and reflecting in the mind a person opens new relationships between the elements of this reality and their new properties. The need of naming them faces not only a language “economy” principle, requiring to avoid quantitative increase of linguistic units, , but also the desire to express new meanings and understanding of familiar already known objects of the world, which is possible only on the basis of the creative world acquisition. In this case the speaker applies the known feature expressed in the language unit’s internal form or contents to the object under study, giving it the name of the interpreted language unit. In this process we can see the birth of a new meaning, rather than a new named in a certain way object”.

As Russian researchers A.V. Superanskaya, N.V. Podolskya, N.V. Vasilieva (2009, 93) state, “the term is fundamentally deprived of emotional aspect. Therefore, the figurality can be used in terminological nominating process with the aim to present term’s particular motivation, to show its relationship with other terms and named objects’ relations with each other. Consequently, things that under normal conditions serve to create stylistic figures, in special nomination is used for terms generation”.

The process of term-formation on the principles of secondary nomination is most apparently presented by metaphoric term creation. There are still a lot of disputes concerning the admissibility of metaphor in scientific discourse in the scientific community nowadays. Initially any association between metaphor and scientific discourse was completely rejected, which was explained by traditionally relating the metaphor with literary language exclusively. Moreover, the very concept of this linguistic phenomenon is contrary to the classical requirements of the stylistically neutral term.

Today the attitude of scientists to metaphor has changed, especially with the emergence of the theory advanced by G. Lakoff and T. Johnson in their book "Metaphors we live by" (1990). According to them the metaphor is not just a linguistic technique but a conceptual means able to construct mental models and elaborate cultural prototypes. It develops into a ubiquitous feature set to manage even the most minor details of our lives, a tool that we unknowingly use every day. Researchers have come to the conclusion that in view of the fact that metaphors are present in all the aspects of daily life, they must necessarily be present in scientific speech, as the latter is an integral part of it. Metaphor plays an important role in the development of human thought and at the same time it contributes to the deepening of scientific theories. We believe that specific to metaphors contradiction between the tendency to figurativeness and expressiveness and the requirement of a term's being absolutely unemotional is eliminated in terminologization process.

Among the many functions performed by the metaphor in a scientific text, the most important is the communicative one – the function of transferring scientific information and ensuring professionals' communication in more capacious and figurative manner. Equally important is the cognitive function. Figurative representations contribute to enhanced research activity of experts, as a metaphor contributes to information obtaining and processing. In the term formed by metaphorical transfer the main features of the denoted concept are presented, therefore metaphor's nominative function seems no less important. Some authors believe that the pragmatic function of a metaphor is realized when replacing unmotivated borrowed term units by a metaphoric term or a term with a big number of term-elements. Modeling (schematizing) function of a metaphor allows preserving links with the culture of the country and its people, as a metaphor makes it possible not only to create a certain world model but also to present the relationship between its elements (Suleimanova 2006, 209).

Other researchers believe that the purpose of scientific metaphor is "updating the results of deep thought processes not specifically to create nominative unit but rather to present the individual vision of the phenomenon under investigation, using a variety of associative mechanisms for the generation of new knowledge in the minds of communication partners" (Alekseeva, 1998, 47).

Indeed, in the recipient's mind a metaphor evokes a number of subjective images and associations. Transfer of a concept's name to another one on the basis of the similarity of their characteristics and the associative nature of human thought are the basis of metaphorical term formation.

One of the main ways of names creation in oil and gas terminology is a re-thought of common words, or their metaphorization or metonimization. Thanks to metaphorical or metonymic names transfer commonly used words become motivated. It should be noted that due to the fact that language as one of the main constituent parts of separate culture nations is inherent in certain national characteristics, such concepts as a national culture and national mentality undoubtedly have an impact on metaphorical models formation in human mind. And as metaphorical transfer occurs as a result of depending on national and cultural characteristics individual thinking, terminological nomination is largely determined by specific national motivation. The fact that it is impossible to identify the absolute equivalence in the ways of expressing the same concepts in different national languages is also obvious. These processes are particularly pronounced when generating the terms in the bowels of the native language. For professional terminological most peculiar is the process of secondary nomination – the use of already existing in the language naming resources in their new function of naming professional phenomena.

In the term-system under study it was possible to two kinds of metaphorical meaning:
a) the new meanings formed because of the need for new phenomena nomination (nominative-cognitive metaphor);
b) the new meanings formed to meet the needs of emotionally expressive vocabulary renewal (expressive metaphor).

In the material under study we observe the nominative-cognitive metaphor predominance. Anthropomorphic nature of metaphorical term formation allows us to study the terms formed by metaphorical transfer mechanism through the prism of man – nature – surrounding world relations.

Secondary nomination methods of oil and gas business realities were also classified as part of the cognitive spheres: I. "Nature" II. "Man" III. "Society" IV. "Cognition a priori". Basing on the proposed classification it was possible to identify the following lexical-semantic categories of terms:

Within the cognitive sphere "Nature":
I. The material world (inorganic and organic world)
1. Inorganic world metaphors based on geology notions water-bearing horizon; cyclone
2. The organic world
2.1. The plant world (flora) fault branch; Christmas tree; well bore
2.2. Wildlife (fauna) wildcat; monkey; bore hole; crow's nest; graphite flake

Within the cognitive sphere "Man (as a living biological, rational being)" the following lexical-semantic groups of terms were identified:

I. Man as a living biological creature:

1. Phases (periods) of human life: rock age; juvenile oil age; artificial aging; ageing coefficient; juvenile water;

2. Physical human life: breather (valve); alternating current (ac) feeding; gas saturation; tank breathing; names formed by association with the reality objects and events perception by human senses: acid-cut mud; odorant; black diamond; rigid tank;

3. Human appearance: nose of fold; blind vein; crank shaft; deflecting cam; guide finger; shoulder of lever; bit teeth;

4. Human physical abilities: heavy flow; metal fatigue;

5. Physiological needs of a man as a living being (personal hygiene, cosmetics): pure oil; contaminated air; oil bath

6. Vital human needs:

6.1. garments and their parts: girt of derrick; reception pocket;

6.2. footwear and their parts chisel shoe; anchor shoe;

6.3. headgear: gas cap; cap screw;

6.4. toilet articles, decorations: rope thimble; break ribbon; mounting pin; bead;

6.5. household items: petal basket; pipe-racking board; drill string; cone of depression; yoke end of arm; spoon bit; bucket; cap anemometer;

6.6. bed and bedding: stream bed; water cushion;

II. Man as a rational being:

1. Feelings and types of perception:

1.1. emotional feelings and conditions and behavior: water-sensitive sand; damping winding; chemical attack; reservoir behavior;

1.2. Will and its manifestation types: rigidity of rock; concrete curing; disturbance in the pressure field; stimulated formation; structural discordance;

1.3. Human temper, mentality; psychology: independent regulation; dummy piston; noble gas; free water; drilling mud activity;

Within the cognitive sphere "Society (a person as a social being)" it became possible to identify the following lexical-semantic groups of terms:

I. Man as a unit of the state structure and ideological system (social community):

1. Country (state, motherland): 1) settlements, settlements (buildings, structures, premises, parts of buildings): salt dome; charging door; roof of formation; side of hole; wellbore wall; drain sump;

2. Social and political activity: disturbance in the pressure field; drilling mud resistivity; coal beneficiation;

3. Armed forces and armaments: drainage front; water encroachment; shooting;

4. Transport bit run; gas transit;

5. Metaphoric terms based on associations with the marine issues drilling mast; tubing anchor;

Within the cognitive sphere "Cognition (a priori)" the following lexical-semantic groups of terms were identified:

I. Abstract relations and the forms of substance existence: bracing member; intermolecular bond; grain structure; excited atom;

II. Space: dead space;

III. Movement: oil mobility; fishing for casing; wave arrival;

These are definitely not all the lexical-semantic groups of term units representing oil and gas terminology conceptual field, whose all the variety could not be reflected in the scope of this paper.

5. Results

The methodology of the lexical material cognitive-ideographic conceptualization and synoptic description within the four lexical-thematic groups (I. Nature: inanimate and animated; II. Man as a biophysical unit; III. Man and society: a man as a social unit; IV. Cognition (a priori) have established that the term units of the

system under investigation have peculiar characteristics such as monosemy and preciseness of concepts expressed by them; special or specialized type of semantics; consistency and internal bonds between terms, presence of thematic (ideographic)groups; commonality of use. Thus, the systematic character of terminology is considered by us as a conceptual (ideographic) systemacity representation which in addition to the linguistic phenomena also takes into account extralinguistic factors reflecting the national world perception characteristics and the main features of the professional language picture.

6. Conclusion

In this paper we proposed our attempt and experience of systematic analysis and description of professional oil and gas business terminology. The term system under study can be estimated as a complex systematic structure. Methodology Lexical material's ideographic understanding and synoptic description within four cognitive groups (I. Nature: inanimate and living; II. Man as a biophysical unit; III. Society: man as a social unit; IV. Cognition (a priori) revealed that investigated term system involve peculiar characteristics such as semantic unambiguity and precision of concepts expressing (expression?); special or specialized type of semantics; systematic organization and internal inter-term bonds, the presence of thematic groups; commonality of use. Thus, terminology consistency can be considered as ideographic concepts' representation, which in addition to the linguistic and extralinguistic factors takes into account national world perception characteristics and the main features of the professional language picture.

Oil and gas business term system appears as an internally organized set of interrelated and interdependent units possessing their specific characteristics and semantic organization. Terminological units creation goes along the direct and indirect nomination principles. The proposed methodology was successfully applied when compiling a multilingual Oil and Gas Business Terms Thesaurus whose organization gives the user ability to apply to the section of the dictionary, the subject of which coincides with the scope of his professional interests, that is the most appropriate and convenient in the case of a multilingual dictionary compared to its alphabetic counterparts. We also hope that the methodology can also be applied to other term systems investigation and description.

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