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Metaphor as a device for understanding cognitive concepts

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ABSTRACT

The paper addresses metaphor as a cognitive-semantic device which is able to reveal intuitive mechanisms of the thinking process, thus filling the gaps in the sphere of logically objective human knowledge and opening the possibility to describe abstract concepts of the human mind in terms. This paper substantiates the principal possibility of conceptual modeling of the metaphorization process and describes its baseline algorithm, identifies complex metaphors and establishes the cognitive-semantic features of their functioning. The main conclusion of the reasoning confirms the hypothesis that different image schemes have different strength of heuristic potential, which determines the fullness of metaphorical descriptions of concepts.

Keywords: metaphor, metaphorization process, image schemes, heuristic potential, conceptual sphere, meaning representation, cognitive model, military conceptual sphere

1. Introduction

The perception of metaphor has changed significantly since the end of the 20th century. Metaphor is no longer considered to be a purely literary trope, and the boundaries of its usage have shifted greatly. Lakoff and Johnson (1980) were the

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pioneers in ascribing completely new characteristics to metaphor and changing its overall perception. Lakoff (2008) provides a new vision of metaphor coming through a complicated path from the source domain to the target domain.

This paper introduces a new cognitive approach to the understanding of metaphor, which observes the process of metaphorization widely as "development of image schemas" or cognitive images being nearly identical with the primary meaning of the word. This approach is intended to replace the classical study of metaphor by the study of thinking, learning and conceptual modeling of the metaphorization process. It provides a new perspective on metaphor as a key element of knowledge and systematization of human reality.

One of the aims of the paper are "non-isolated" metaphors, which are based on the categorical attachment of sub-images or additional images grouped around basic metaphors and united by associative thinking into a single metaphoric chain. The main and subordinate metaphors belonging to the same field of discourse and reinforcing the same system of implications form a complete and heuristically rich image schema.

We claim that in each individual case different semantic spheres with a unique set of features offer their own special arsenal to develop image schemes, which vary in the level of meaningfulness. Specifically, we demonstrate that each sphere has a distinct inherent heuristic (structural, dynamic, qualitative) potential and possibilities to predict the metaphoric choice among conceptual metaphors and to discover their new, unusual sides of the processes.

In compliance with the research, Section 2 in the paper outlines the key concepts of the cognitive theory relevant to the project, Section 3 defines the most important terms of metaphorization, Section 4 reveals the main stages of metaphorization, and Section 5 presents the heuristic potential of the military conceptual sphere.

2. The theory of Metaphor

Nowadays it is impossible to answer the basic questions of linguistics without consideration of the principles underlying human cognitive activity. Scientists in cognitive linguistics have no doubt that language should be viewed as a system connected with other systems of knowledge, rather than as an isolated autonomous entity. The basis of the cognitive attitude to language is to understand it "as a means to form and express ideas, storing and organizing knowledge in the human mind, knowledge sharing" (Kubryakova, 2004, p. 9). This is the basic vision we have adopted in our approach to metaphor.

The modern concept of metaphor began with the transition from the perception of metaphor as a purely linguistic phenomenon to the consideration of its essence as a universal cognitive mechanism. It was initially put forward by the interactionist theory of Richards (1990), in which a metaphorical meaning is seen as the result of two thoughts at the same time, and expressed with a single utterance. Black (1990) has developed the theory of interaction and the concept of "filtering" ideas about a single entity using the associative complex which belongs to the other one. The interactionist concept focuses on the implicative possibilities of metaphor and its ability to bring to life a host of associated opinions, values and beliefs. However, the authors of the interactionist concept lack an adequate theory of imagination and fail to explain how to achieve cognitive interpretation and clarification of the main subject of the metaphor (Boys-Stones, 2003).

To solve this problem, cognitive researchers over the recent decades have suggested the idea that there are deep structures of the human mind. The theory of image schemas developed by Lakoff and Johnson recognizes metaphor as a tool to understand deep conceptual spheres that give structural coherence to the human experience. They believe that "metaphors as linguistic expressions become possible because there are metaphors in the conceptual system" (Lakoff & Johnson, 1990, p. 112).

Lakoff's thesis about metaphors, which allows us to understand a fairly abstract or inherently unstructured entity in terms of more concrete or at least more structured entities (2008, pp. 18-19), reflects one of the most important functions of metaphor – the cognitive function, i.e. the function of obtaining new knowledge. Following this, the theory of conceptual integration of Turner & Fauconnier (1995) considers metaphor as a kind of common mechanism of mental projection (i.e. mapping), which is involved in many fields of thinking. The authors argue that not only structural projection of the area of source on the target area has taken place in metaphorization. While the process of metaphorization in the human mind creates an intermediate conceptual area (i.e. blends) and is stored in the short-term memory, it forms a new structure "embedded" in the system of knowledge and it serves as a significant component of the cognitive process (Turner & Fauconnier, 1995).

A fresh look at the purely linguistic problem became at first possible in line with the integrative, cognitive-semantic approach to the study of mental processes. The integration of semiotic sciences (e.g. philosophy, rhetoric, logic and linguistics) and the physical cycle (e.g. psychology, neurophysiology and information theory) have opened new prospects to explain processes of thought, including mechanisms of metaphorization (Carroll, 1994). Within this approach, metaphorization is understood more clearly as a simple associative retrieval and cognitive processing.

Additionally, it covers standard spheres and terms such as motivation, conceptual association of the target area and the area of source and lexico-grammatical design, as well as the conscious "stage" of metaphor creation such as image schemas.

The term "developing image schemas" is treated as a special heuristic power and information capacity to transfer existing knowledge to new, little-known fragments of reality. It involves the inclusion of the new signs in the scope of its meaning belonging to the same sphere of discourse and reinforcing the same system of implications, which allows humans to achieve a deep understanding of the problem situation.

Summarizing, we should admit that linguistics made a "cognitive turn", moving from the methods to detect the presence of conceptual connections to the new approaches to interpret the process informatively in the frame of cognition and semantics, and to identify the underlying semantic grounds of formation and actualization.

The current task to explore the basis of metaphorization with the application of an integrative method requires answering a number of questions: Is it possible to study the mechanisms of metaphorization? What is the purpose of metaphorization? What are the parties involved in metaphorization? What are their roles? What are the reasons of different types of metaphorization? These issues are the main focus of the following sections.

3. Terms and notions of metaphorization

One of the objectives of current linguistic research is to explore the linguistic embodiment of the processes of consciousness which is linked to the notion of conceptual metaphor reflected in the word, the phrase and the sentence, in which both participants are mentioned "in one bundle", and which can also be referred to as the absolute, basic, underlying, key or prototype.

A conceptual metaphor is sustainable, strong, automatic, omnipresent, and intersubjective (Rosenblatt, 1994, pp. 22-23; Semino & Culpeper, 2002, p. 108). As stated above, the modern study of metaphorization is based on an integrated approach which takes into account a holistic system of relationships between the volume of conceptual sphere. In cognitive science, voluminous conceptual spheres of knowledge representation are named differently. They are referred to as clusters, categories, and figurative schemas, scenarios, scripts, frames, information packets, gestalts, prototypes, domains and idealized cognitive models. The understanding of these cognitive structures came from several sources: Frame Semantics (Fillmore, 1982), the Theory of Schemas (Minsky, 1980), the Theory of Scripts (Schank, 1982),

the Cognitive Theory of Metaphor (Lakoff & Johnson, 1980), the Theory of Structural Overlaying (Gentner & Gentner, 1982), Prototypical Semantics (Rosch & Mervis, 1975; Arkhipov, 1997) and the Theory of Mental Spaces (Johnson-Laird, 1983, 2004; Turner & Fauconnier, 1995).

These identifying structures (e.g. frames, gestalts, prototypes or image schemas) are the basis to create synthetic mental space, and to combine at least two elementary structures. Let us dwell on the three important ones: models, frames and image schemas.

Firstly, our knowledge is organized by means of special structures called idealized cognitive models (hereafter ICM). Concepts related with the cognitive model are developed in the theories of Cognitive Domains (Scott, Osgood & Peterson, 1979), Mental Spaces (Turner & Fauconnier, 1995) and Mental Models (Holland, Holyoak, Nisbett, & Thagard, 1986). Each ICM is a "complex structured whole" and it forms the mental space (i.e. it imposes its system of schemas on the scope of the conceptualization) on the basis of four types of structures: propositional, image-schematic, metaphoric or metonymic structures. Lakoff (2008, p. 368) highlights those as container, part-whole, connection, center-periphery, source-path-goal, top-bottom, front, and linear order.

Cognitive models reflect some but not all properties of reality:

> People make mental footnotes about what is not true in their model of interpretation of reality, and will eventually lose access to them. This is useful because it reduces the load on the working memory volume, but leads to systematic inferential illusions (Johnson-Laird, 2004, p. 201).

A cognitive model created by a human is largely subjective. People obey traditions and tend to fixate on one common as-formed model. Therefore, in virtue of their inherent properties (i.e. incompleteness and subjectivity), the objects of a linguistic study cannot be considered as cognitive models but as the linguistic embodiment of conscious processes.

Secondly, there is a more specific nature of frames by Fillmore (1982, pp. 110-111), that is, a "specific lexical and grammatical provision, which the very language has been given to name and describe the categories and relations found in schemas". The role of the frame is to create a frame image, unifying communicants.

Thirdly, there are image schemas having the configuration of a structured whole, and not just an aggregate of parts (Ortony, 1990, p. 224). As Lakoff (2004, pp. 353-369) states, "image schemas structure not only our bodily and spatial experience, on the basis of which they are formed, but also concepts, including abstract entities". To form meanings, human attention focuses on certain structural elements of the

image schema, where one element within the schema stands out relative to another, i.e. it is profiled. For example, the concepts "part" and "whole" profile the relationship of metonymy in language.

The image as an essential element of cognitive analysis of the lexeme is of great interest for this study. The question of the place of the image attracts special attention when thinking about lexical meaning in the relationship of imagery and metaphor. Kiseleva claims that metaphorical formations appear at the cognitive level, and the category of the image contributes to the competent interpretation of the results of this process at the lexical-semantic level. As the human mind is an indivisible unity of logical and creative perception and reflection of reality, we can say that one part of the concept of information is tied to the language, and the other part consists of mental representations (e.g. images, diagrams, gestalt or pictures) (Kiseleva, 2009, p. 49).

Image is an inherent property of language that provides an understanding of the referent as a necessary condition for communication. Figurative representations are simultaneously individual and national, because they are inseparable from the personal life experience of a human and convey the national picture of the world, customs and stereotypes of thinking. The images are influenced by the linguistic activities of a human and the different degree of his or her awareness in a particular sphere; hence, the embodiment of the images in language units varies.

According to Nikitin (2006), images are only reflections of genetic things. In our mind they are not just passive copies of things, they are products of human creativity as well. Consequently, for some cases it is true to say that the image is a perfect likeness of things, while for other cases a thing is the material likeness of the image. The embodiment terminates the process of creativity formation. It is its subsequent phase where the image again base stats. Thus, the overall process consists of two mutually complementary, but relatively independent, parts: "things of internalization and formation of an image in the mind, on the one hand, and exteriorization of the image and its embodiment in the thing, on the other hand" (Nikitin, 2006, p. 183). The ratio of the concrete and abstract way is not the equivalent from the point of view of substantive content. Therefore, Miller (1990, p. 239) believes that "by their nature, images are particular (they do not go beyond the limits of the sensuously perceived reality, they can be visual, auditory, and even olfactory) and specific (they actualize similar but not identical cognitive structures of the authors and recipients of metaphors)".

Indeed, a distinctive feature of the images of a single piece of reality is specificity; they can be created in minds by comprehending and thinking about them. The image of a single real object can always be variable in the minds of different people,

but it can always be isolated and specific in the mind of one person in a specific period of time. The images of the classes possess both specificity and generality. Specificity appears due to the fact that this type of images occurs on the basis of ideas about one particular subject or the type is generated on the ground of indefinite variety of items. Generalization lies in the fact that the image of a class has a more flexible range of the distinguishing characteristics of the class to be included.

Images are immersed in consciousness to a different network of relationships in comparison with that which determines the place of the originals (i.e. prototypes) in the real world. The image is formed by perception, memory, imagination and accumulated impressions. Intuition appears on the basis of the processes and it is itself transformed in the human mind: "It can be seen only with the inner eye, as in our life we deal with real objects – things and people, but not with their images" (Arutyunova, 1998, pp. 320-321). Metaphors and images are closely related. It is known that the classic metaphor is the invasion of the submission (i.e. image) to the area of concepts, imagination in the area of intelligence. The metaphor uses the image generated with respect to one feature class to another class or a particular representative of another class (for instance, the image of the wolf to a man).

In a broad sense, the image is a reflection of the external world in consciousness. As a form of reflection of reality, it bears cognitive, communicative, aesthetic and educational functions. The truth and faithfulness of reflection is guaranteed by the feedback principle, as it emerges as a reflection of life, and the way it develops (i.e. it is materialized and deployed in the text) in accordance with its actual properties. Since the image does not have a separate form from the content, then, if it does not fit the facts of life, it is immediately evident (Arnold, 2002, p. 114).

Summing up, we note that metaphorization is considered not as a juxtaposition of isolated properties of conceptual metaphor, but as a complex one – a mental operation with holistic mental structures. The environment of metaphorization is a conceptual sphere of representation of knowledge, as voluminous as cognitive models, frames and pattern schemas. The image serves as the basis for operations that facilitate understanding metaphors and images by activating the corresponding relationship with the sensory experience, regulating the deployment of imaginative schemas.

4. The main stages of metaphorization

Undoubtedly, the choice of certain lexical means in the mental process is subjective and hidden, and the opportunity for "precise algorithmic descriptions of the creative cognitive process by which a metaphor is generated, is relatively small" (McCormack,

1990, p. 362). However, we believe that the set of operations between the source and the end point of the thinking process can still be studied. In the arsenal of cognitive linguistics the main tool is language.

Besides, to describe the basis of metaphorization, we have to present a reasonable reconsideration of those schemas that underpin our ability to form and understand metaphors, rather than a sequence of conscious actions. This requires to "define a set of policies/principles of calculation of possible meanings; the set of structures/principles that allow to restrict the set of values" (Searle, 1990, p. 330). It is significant that the reference to it in two cognitive structures is a mandatory element of almost every definition of metaphorization:

> The mechanism of metaphor is quite a common creative cognitive process (cognitive device), which takes into account two or more referents, usually are not connected, for deeper penetration into the matter, which leads to semantic conceptual anomaly. (McCormack, 1990, p. 362)

> The mechanism of metaphor is that the system of "associated implications" adjoins the main subject, in turn, these implications are associated with the subsidiary subject. Thanks to this, the metaphor selects, emphasizes and organizes some characteristics of an object and eliminates others. (Black, 1990, p. 167)

> The mechanism of metaphor is the movement variously conceived and variously perceived representations and concepts, which leads to turning one into another and replacing one another in terms of expression. (Arutyunova, 1990, p. 35)

> The mechanism of metaphor is that two thoughts about two different things interact with each other inside a single word whose meaning is the result of the interaction. Types of interaction between coexisting thoughts infinitely vary. (Richards, 1990, p. 46)

Based on the definitions above, it is evident that mental mechanisms lend themselves to gradation, showing a possible transition from an ideal image of the idea, through a sense of kinship, to its symbolic representation and possible linguistic embodiment in terms of the conceptual sphere (Pepper, 1979). Metaphorization is a process occurring between two main parties: the sender and the receiver; consequently, it is possible (with minimal losses) only if the parties have the joint sphere of vocabulary and the background knowledge. On this basis, the process can be considered as the selection of language personal cognitive structures of the source domain, target domain and their combinations.

The main stages of metaphor formation are also presented in a linguistic-semiotic

model by Lebedeva & Zubkova (2011). The authors note that in the metaphorization process concepts interact in the mental space within the model, using the metalanguage. This language is represented in the language-genotype, i.e. the language of mental representations aimed at "embedding" basic invariants of mental representations in the semiotic structure of language and speech, as well as in the language-phenotype, and then it is manifested in terms of natural language. Metaphor is a cognitive-semiotic model of human consciousness; it is based on the content of the sign and creates a new vision. The authors also note that their model of metaphorization is "parametrically neutral and of a descriptive nature, i.e. it describes the ongoing development of the mental action as a whole, and the filling of the model occurs in the speech-thinking activity of the individual" (Lebedeva & Zubkova, 2011, p. 115).

At the beginning of any level of mental representation, there is a concentration that allows us to draw attention to the features of some object that stands out from the totality of objects because it has been perceived as a "live" image. Human attention is first focused on what is more easily parsable, and only then on the objects that are more diffused. After the concentration of attention, the embedding of networks is in the overall architecture of the mental-semiotic space, where a metaphor is formed by compiling the schema invariant. Next, the same procedure starts: forming the invariant of a metaphor, forming the schema and building the architecture of the mental space of a metaphor, which is issued in the language of the phenotype and verbalized in written or oral speech (Lebedeva & Zubkova, 2011, pp. 115-116).

The cognitive image schema of a metaphor has a meaning that is closer to what the addresser wants to express, but sometimes it is too specific and may not always be supported by a linguistic correlate. Each cognitive schema is a meaning in a polysemantic unity. Thanks to the activated schema, the speaker focuses on some significant aspect of the metaphor. The cognitive prototype that organizes the core concepts of the metaphor correlates with the class of objects that have synonymous meanings, but they differ at the level of definitions. When conceptualizing has mapped the concepts (united by associations of similarity or adjacency), the receiver needs to identify or to give them a rule of mutual connections since then; the activity for the request (updating linguistic and encyclopedic knowledge in the memory) is replaced by the activity on the mounting.

As shown above, the starting point of the speech and thought generation is a very folded, reduced, interiorizing intent (motive), which is deployed at the level of the monolithic phases of sense formation and formulation. The linguistic expression of the motive of metaphorization is a concept which requires clarification. Concepts are lax and fuzzy signs. The mental worlds of concepts are homogeneous and they exist without clearly defined structures. What motivates the formation of a meaning is

metaphorization as a language device crystallizing the meaning, imparting it with subjective individual parameters and simultaneously systematizing it according to the anthropometric paradigm.

The study of metaphorization requires a detailed review of operations outlined in the psychological functional diagram of the formation and formulation of thought through language. Within the frame of cognitive research, an important issue is the consideration of extensive psycholinguistic data, which are the basis of the metaphorization process of association and "attachment" of the mechanism of thinking to a particular subject of the conceptual sphere.

5. Military conceptual sphere

We propose a new typology of metaphors according to their cognitive semantics, which observes the process of metaphorization from a completely different perspective, in order to distinguish metaphors according to their degree of heuristics to determine what options of metaphorization (i.e. epiphora and diaphora, as we have established) increasingly contribute to the conceptualization of something new in the process of secondary nomination.

It was found that the number of metaphorical units in a developing image schema can be minimal (i.e. a single metaphor) and maximal (i.e. a number of metaphors of related thematic areas, numbering 7±2 lexical units). This number corresponds to well-known trends in the cognitive study of the phenomena of memory, postulating that its volume is constant, and if the amount of information exceeds the memory ability to memorize the meanings of a word, then the "extra" information is lost.

For example, with the help of the conceptual metaphor "SUCCESS > LADDER", which attracts the language of the house-building concept sphere, we show the developing image schema (e.g. *He always had to do more, better, REACH the NEXT RUNG on THE LADDER. Now he was forty four years old and nothing had changed inside him – the ladder had always had AN EXTRA RUNG, and he couldn't afford TO STOP for fear he would FALL*) and measure its heuristic potential, which contains six units (i.e. to reach + the next rung + ladder + extra rung + to stop + to fall).

The heuristic potential of the research has allowed us to conclude that each conceptual sphere has exactly its specific inherent heuristic potential and usage possibilities in a new field. For instance, if in the road transport sector the underlying logic is intended to achieve the goal (e.g. *to go a long way, to reach a point*), the nautical concept sphere has a somewhat different underlying logic: it is *a skillful "maneuver*" or "*navigation*" among the difficulties and problems (e.g. *to launch, to navigate, to collide*); and for the housing sphere there is a characteristic order,

coherence of the parts of the whole etc. Hence, we may conclude that the knowledge of heuristic potential makes it possible to take into account the unrealized conceptual possibility. This confirms the common perception of a metaphorical nomination of the 'glass ceiling' – *a lack of opportunities for women to get promoted above certain posts*. Given this, such image schema through metaphorical 'doubling' or apposition of denotations plays an important role in saving cognitive efforts to facilitate understanding and to transmit cultural values from individual to individual.

In Lakoff and Johnson's theory of image schemes, the emphasis is on the consideration of metaphorical conceptualization, the formation of ideas about the unknown object. We discovered such examples as well – the basis of the metaphor 'flower fidelity' (i.e. each bee gathers nectar and pollen from only one species of flower) is a cognitive process that creates a new concept of 'loyalty' to one sort of flowers that deepens our understanding of the world of bees.

However, the system's side of metaphorization remains insufficiently developed in the theory of image schemas, namely, the question of how metaphors influence the method and the style of thinking about an object, and what cognitive structures of knowledge representation are used. To solve the problems of the systematic study of metaphorization, a unique complex methodology of conceptual modeling is developed, which has helped to reconstruct fragments of reality in some conceptual metaphors. Dictionaries and associative thesauri (e.g. CDQ, DSUE, EGM, LDCE, MED and OED) were used in the original selection of metaphors.

We have found that in modern English there are a number of semantically comprehensive and rich conceptual spheres. They contain "not single" metaphors initially grouped in generalized frames, which include slots of their verbal, noun and adjectival metaphors. They allow us to visualize the whole complex of knowledge about the referent. Thanks to a frame-based knowledge representation, we have managed to show how, for example, the content of the central slot "War"– the name of the military conceptual sphere – reveals:

- structural slots: the actant (I, a man, a commander), the object (an/the aim one wants to achieve, a peace of mind, a strategy or tactics of achieving sth.); the tools (the arsenal of information, ammunition of facts);
- dynamic slots: the predicates of the beginning of the action (to arm at sb. with information, to attack a task, to invade minds), the predicates of the content of the action (to defend a view, to parade one's skills, to misfire a proposition, to explode a theory) and the predicates of the end and the result of the action (to capture sb.'s interest, to surrender to arguments, to win out support);
- high-quality slots: (entrenched attitude, invincible prejudice).

The heuristic potential of the military conceptual sphere (38 units) is presented below (according to modern dictionaries [MED and LDCE]):

Slot 1 (the name of the frame): War

Slot 2 *(*the predicates of the beginning of the action):

(1) to arm sb. (to provide with information) (MED: 67),
(2) to attack (to begin working on sth. with enthusiasm) (MED: 81),
(3) to aim (to try to achieve sth.) (LDCE: 28),
(4) to bombard (to give sb. too much information) (MED: 155),
(5) to fortify (to make more likely) (MED: 591),
(6) to invade minds (to affect sb.) (MED: 748),
(7) to intrude (to become involved in sth. in a way that is not welcome) (MED: 748)

Slot 3 (the key predicates of the content of the action):

(8) to betray a feeling or quality (MED: 127),
(9) to camouflage (to hide the truth) (MED: 207),
(10) to smokescreen real feelings/intentions (LDCE: 1358),
(11) to command (to get attention or respect) (LDCE: 263),
(12) to defend (to support sth. that is being criticized) (MED: 387),
(13) to fight a losing battle (trying to achieve sth. that you will probably not be able to achieve) (MED: 551),
(14) to hit the mark (to achieve the result) (MED: 921),
(15) to parade one's knowledge/skills (LDCE: 1025),
(16) to shoot sth. down in flames (to refuse to consider an idea) (MED: 1374),
(17) to misfire (to go wrong) (MED: 958),
(18) to explode (to prove that a theory that many people believe is false) (MED: 516),
(19) to trigger (make you feel or remember sth.) (LDCE: 1544)

Slot 4 (the key predicates of the end and the result of the action):

(20) to capture sb.'s interest/imagination (MED: 213),
(21) to be defeated (you cannot understand it) (LDCE: 365),
(22) to conquer (to gain control of a situation/emotion) (MED: 311),
(23) to disarm (to make sb. feel less angry) (MED: 416),
(24) to surrender (to allow yourself to be influenced by something) (MED: 1454),
(25) to capitulate (to accept sth.) (LDCE: 187),
(26) to win out (to succeed) (MED: 1709)

Slot 5 (characteristics):

(27) entrenched (attitude that exists for a long time and is difficult to change) (MED: 492),

invincible prejudice (too strong to be changed) (MED: 798)

Slot 6 (actant):

(28) I, a man, a commander

Slot 7 (place):

(29) battlefield (a situation in which people disagree) (MED: 110)

Slot 8 (instruments):

(30) arsenal (collection used to achieve a particular purpose) (MED: 70),
(31) ammunition (facts that can be used against sb. in an argument) (MED: 46),
(32) weapon (knowledge of a particular subject in a difficult situation) (LDCE: 1620)

Slot 9 (object):

(33) aim (thing you want to achieve) (MED: 33),
(34) a battle of wits (a situation in which people compete trying to be more clever) (MED: 110),
(35) peace of mind (a state when you are calm and have no worries) (MED: 1100),
(36) strategy (a plan or method of achieving sth.) (MED: 1478),
(37) tactic (a particular plan) (MED: 1528),
(38) target (an idea that can be criticized) (MED: 1530)

Let us consider the changes in the direct and indirect meanings of 'to fight' (MED 2007, p. 550):

- If people fight, they use guns or other weapons against each other.
- To disagree or argue about something: Look, I don't want to fight over this.

The basis of the metaphorical transfer is the combination of characteristics of hypothema (i.e. type, sort or species) and the implicational of the original meaning, which, being modeled in accordance with the new scope, form the hypothema and the implicational of the derived meanings. The implementation of verbal metaphors is accompanied with a change of the semantic class of the original meanings: for example, fighting with the problem and using different tactics for this can be rethought as a mental action of a solution of the problem. The verb 'to fight' includes

a reference to the entire situation described by the military frame. The concept 'war' acts as a main basis, which helps to create and develop different variants of the action.

The cognitive-semantic analysis has allowed to formulate the conceptual metaphor "COGNITION > WAR" and a number of subordinate conceptual metaphors which are in hypo-hyperonymic (i.e. specific-generic) relations with the central one. These are metaphors like "ARGUMENT > WAR", "SOLUTION > VICTORY", "MISUNDERSTANDING > DEFEAT", "FEAR > ENEMY", "FACTS > AMMUNITION", "MARRIAGE > WAR", etc. Here a person is an actant or a cognitive subject. He or she makes mental actions: "aims" to win, "arms" with facts, applies the tactics and strategies, "attacks" false opinions, "gains" sympathy and wins.

Considering all the above, we have built the following cognitive model, which orders the relevant language facts and combines them into a single, logically connected scenario and predicts the fundamentally possible additions to it.

Military cognitive model

My problem reminds me of a war. I aim to win. One tactic is to defend my idea. I camouflage and smokescreen its weak points. My comments betray a lack of understanding. My great ideas are shot down in flames. My plan misfires. I face a serious defeat. With this tactic, I fight a losing battle. I finally capitulate. I surrender for my own peace of mind. Another strategy is to attack the problem with determination. I conquer my fears. I arm myself with the ammunition of facts. I fortify myself with the arsenal of evidence. It is the most powerful weapon in the battle of wits. Ideas intrude minds and trigger memories. I command people's attention. I capture people's imagination. I parade my knowledge and skills. I bombard my opponents with questions. I make an invincible prejudice the target of severe criticism. My comments hit the mark. I explore and explode deeply entrenched myths. I disarm even my sternest critics. It is a great struggle, but the truth wins out in the end.

This cognitive model can be illustrated by many metaphorical uses in literature. Thus, the concepts 'to defend', 'to trigger', 'to struggle', 'to shield', 'to invade', 'to fight', 'to misfire' and 'to ricochet' illustrate the idea of a variety of activities: e.g. "protection" from a point of view or the inner world of an individual, the "struggle" for the creation of a theory, and the "attack" on the area of perception.

(1) Psychologists **defend** a view that not all primitive concepts are available for a use at birth. They must often be triggered (Prinz, 2002, p. 229);
(2) Fantasy served Gilman well as a way **to shield** the already injured ego (Harris, 2003, p. 60);
(3) Philosophers have **struggled** to come up with a theory of intentionality that

explains how we can refer to unique and coherent classes of objects rather that distinctive bundles of things that happen to look alike (Prinz, 2002, p. 260);

(4) Great Eras of culture occur when a large area of oral experience is **invaded** by a visual medium, or vice versa (Cavell, 2007, p. 133);

(5) He would try to imagine the people he would meet and rehearse his jokes in the terror that one of them might **misfire** (Brook, 1998, p. 69);

The military conceptual sphere with its abundance of dynamic metaphors is close to the "scenario of representation of knowledge with such elements as:

1) the initial state (source area),

2) the sequence of events,

3) the outcome, the resulting state" (target area). (Lakoff, 2004, p. 127)

The military cognitive model structures the mental space and affects human judgment about the probable development of the events. Some lexicographic examples illustrate a cognitive model, e.g. "ARGUMENT >WAR", which is about the protection of its own ideas: *It's a long shot but it might work. She tried to defend herself against his attacks on her ideas. That is an indefensible point of view. It was a real battle of wits* (MED: 34, 66, 1397). The basis of the military conceptual sphere is a substantial basis for a metaphorical 'war', which includes such concepts as 'strategy', 'peace', 'target', and 'entrenched' that serve as a necessary basis to understand different mental activities.

(6) Sound's continuity, its ability to merge with other sounds and its lack of etration, unimpededness and non-obstruction, active processes that ensure that indeterminacy and hence freedom of performance when adopted as creative **strategy**. (Cavell, 2007, p. 195)

(7) My **peace** of mind, happiness and health will in the long run depend on applying old, obvious and eternal truths. (Carnegie, 1998, p. 36)

(8) She is also well acquainted with being **the target** of aggression. (Crowley, 1999, p.16)

(9) Of all the ill-lit, murky reasons for antipathy to Darwinism, this one has always struck me as the deepest but only in the sense of being most **entrenched**, least accessible to criticism. (De Risio, 2004, p. 12)

Thus, the analysis of examples of metaphorization in the military field has shown that the actualization of a conceptual metaphor occurs as the communication between the target area and the source area. Well-known properties of the subsidiary entity or subject of the military sphere are projected, by analogy, on the less studied properties of the principal entity. Projection properties are

implemented as predication.

Despite the fact that the military sector contains twenty-nine metaphors, the image schema development based on the conceptual metaphor "MARRIAGE > WAR" involves only two points (i.e. battle + war).

(10) Now the times when I want you to remember that are the times when you'll be at cross purposes – and nobody who remains married for thirty-two, or fifty-two or even two years can avoid them. But disagreements can become arguments, then **battles**, then **wars**, unless you learn to compromise. (Spencer, 1990, p. 145)

War as continuation of politics by violent means to enslave and seizure a territory has been known to mankind since ancient times (e.g. "Stratagems" of the Roman General Frontina and "Tactics" of Aeneas). It is known that in court, the parties are "fighting" and gaining "enemies", "attack' and "protection" alternate, but the 'victory' of one is based on the humiliation of others. In our time, a psychological "war" is called the orderly conduct and propaganda in order to influence the attitudes and behavior of the enemy.

By filling the semantic gaps in the subject area, the thirty metaphorical pieces of the military sphere reveal the situation of the dispute in the conceptual metaphor "ARGUMENT>WAR", so that the dispute gets maximum coverage. We have emphasized that the analogy between dispute and war, which is disclosed by the military frame, highlights not superficial but structural associative links, i.e. it informs us about the situation of the dispute, its methods and techniques, and the possible options and outcomes.

In the next stage, the metaphors were merged into a holistic cognitive model, that is, findings and generalizations presented in the form of the original compact texts, integrating many separate metaphors. In our opinion, Lakoff's understanding of the idealized cognitive model is not sufficient. An idealized cognitive model is a complex structured whole that the person "has in mind", sees with the "inner eye" and then "reads" the principle of solving problems.

This presentation of the metaphorical models of the text shows more clearly and exactly how the cognitive model structures our mental space, and how it imposes its system of schemas on the area of conceptualization. A cognitive model represents a conceptual metaphorical view of each subject area, reflecting its volume and internal semantic content.

We do not simply enumerate (as it was done by Lakoff) some conceptual metaphors in the military sphere, e.g. "ARGUMENT > WAR", "SOLUTION > VICTORY",

"MISUNDERSTANDING > DEFEAT", "FEAR > ENEMY" or "FACTS > AMMUNITION". Here, a cognitive model describes the probable sequence of those mental activities that a man could do, using military conceptual metaphors. He is "aiming" to win, 'armed' with facts (e.g. *I arm myself with the ammunition of facts*), applies tactics and strategy (e.g. *another strategy is to attack the problem with determination*), "attacks" false opinions, "gains" sympathy (e.g. *I disarm even my sternest* critics) and triumphs (e.g. *the truth wins out in the end*).

Thanks to the cognitive model presented in the text above, the internal logic of particular conceptual metaphors is vividly illustrated. We have proposed a unique method to analyze metaphorization, illustrated with the cognitive model of 30 military metaphors. The contents were compared with the current development image schemas from works of fiction (e.g. *Now the times when I want you to remember that are the times when you'll be at cross purposes – and nobody who remains married for thirty-two, or fifty-two or even two years can avoid them. But disagreements can become arguments, then BATTLES, then WARS, unless you learn to compromise*). On the basis of the calculation of the heuristic potential of the image schema (i.e. two units – battles and wars) and on the basis of compressing it with the common heuristic potential of the military conceptual sphere (i.e. thirty units), we conclude that the pattern schemas are far from the detail, as not all the slots are engaged by native speakers for the metaphorical descriptions of the concepts.

We believe that the explanation for this is the natural human desire to economize effort. The associative correlation of the items with each other creates a model and keeps it in mind. It requires effort of consciousness, so even if it is possible to associate two objects of thought (e.g. marital dispute and war) and a countless number of ways, a person refuses the systematic analysis of information and uses a more simplified way/path, for example, the conceptual metaphor "ARGUMENT > WAR".

6. Conclusion

This study has shown the advantage of the cognitive approach for the comprehension of polysemantic words. In particular, it takes a leading role in the metaphorization of knowing a person with common sense and naïve (ordinary) logic.

Metaphorization as a way of forming meanings is implemented as a semantically-conditioned cognitive system. The systematic character is ensured due to the different cognitive models and figurative schemas, the heuristic potential, and the describable in terms of frame semantics. The base of metaphorization has been differently implemented in various types of metaphors. This suggests that the

metaphorical description of the world by means of conceptual systems is not necessarily monolithic and internally consistent, but it contains numerous different ways to understand reality, which is a natural reflection of the variability and the nonlinearity of human cognition.

We emphasize that, as classical semantic and cognitive approaches are based on fundamentally similar concepts of meaning, the use of the semantic transformations of the original meaning complements the understanding of the processes of metaphorization. This streamlines the look of a particular concept, characterizes it from different points of view, highlights a particular aspect of it, considers it as the cause of events and takes into account its role in our actions, what is necessary for "the rational treatment of the data of our experience" (Lakoff, 1990, p. 408).

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