

A SYNTHETIC OUTLOOK ON MODERN THEORIES ON CONCEPTS

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Abstract

Scientific interest towards concepts as basic mental structures reflecting the processes of human cognition of the world and the results of various human activities, has been gaining momentum these last years. The attempts to explain the ontology, the organization and the functional peculiarities of the concepts were extremely numerous and diverse. Reviewing the main theories on the origins of the concept from a linguistic, philosophical, psychological or culturological perspectives, is a necessary stage in constructing a solid theoretical basis for further more specialized reflections on the lexical concept, its structure and the principles of its functioning. Synthetizing statements and theories of scientists belonging to the American and the Russian scientific traditions, we try to present an integrated overview of the modern pluridisciplinary vision of the concept.

Keywords: *concept, concept theory, mental representation, lexical concept, concepts network, categorization*

Rezumat

Interesul științific față de concepte ca unități mentale fundamentale, care reflectă procesele de cunoaștere a lumii și rezultatele diverselor activități umane, a luat amploare în ultimii ani. Încercările de a explica ontologia, organizarea și particularitățile funcționale ale conceptelor au fost extrem de numeroase și variate. Trecerea în revistă și revizuirea principalelor teorii asupra originii conceptului din perspectivă lingvistică, filozofică, psihologică sau culturologică reprezintă o etapă necesară în constituirea unei baze teoretice solide pentru reflecții ulterioare asupra conceptului exprimat lexical, structurii lui și a principiilor de funcționare ale acestuia. Sintetizând aserțiunile și ipotezele savanților din școlile americană și rusă, încercăm, în acest articol, să prezentăm o imagine de ansamblu a viziunii pluridisciplinare moderne asupra conceptului.

Cuvinte-cheie: *concept, teoria conceptelor, imagine mentală, concept exprimat lexical, rețea de concepte, categorizare*

Reasoning about concepts nowadays, means dealing with multiple theories and approaches situated at the confluence of linguistics, psychology, philosophy, logic, culturology. The term “concept” is crucial for the description of such processes as cognition, learning, categorization, inference, and finally communication, that is why, in order to have an integrated view of the phenomenon, recent years studies on the nature of the concept turn to history, mathematics, informatics and other sciences the contribution of which to the elucidation of the issue is less evident at the first sight. In such a way the topic becomes so rich and lively that making a synthesis of the modern scientific outlook on concepts gets to be more and more complicated.

In linguistics “concept” is a quite old term regarded as the basic semantic unit of natural languages. Its study is deciding in revealing the logical constitution of a linguistic system, as well as in explaining structural relationships existing between its elements. Etymologically the term derives from the Latin word “conceptus” which comes from the verb “concupere – concapere” meaning “to conceive”. As thus, the simplest definitions of the concept present it as “something conceived in the mind” (Merriam Webster Dictionary). The ideal nature of the concept that is identified with a structural constituent of thoughts, a unit of knowledge or a mental symbol, doesn’t leave doubts. The problem consists in explaining its ontology, trying to describe its structure and to analyze its functional mechanisms.

Scientists who chose a linguistic approach in studying the nature of the concept assert that there is a concept corresponding to each lexical meaning, and suggest the idea that the concept is a kind of algebraic expression of meaning, which a man operates relying on his previous language experience (Karasik, 2001, p. 152). These linguists (we refer here especially to Ascolodov, Lihachev, Neroznak) speak about the concept as about the total meaning potential of a word taken together with its connotative element. From this perspective the concept appears as the basic semantic unit of natural languages. Linguistics deals with lexical concepts, that are conceptual representations susceptible of being encoded in and of being externalized by units of language.

It has been considered for a long time that our thought is based on a word-like mental scheme. According to Fodor’s Language of Thought Hypothesis “thought and thinking take place in a mental language. This language consists of a system of representations that is physically realized in the brain of thinkers and has a combinatorial syntax (and semantics)” (Aydede, 2015, p. 1). Representatives of the cognitive approach of the problem of concept study in Russian science (Popova, Sternin etc.) define the concept as «a quantum of structured knowledge» and an operative content unit of the mental lexicon (Balmagambetova, 2016, p. 85). In other terms they assign to the concept the same role in the mental processes as Fodor did when speaking about the Language of Thought.

It is, however, obvious that concepts have a superior status to words, serving as mediators between words and extra-linguistic reality (Nemickiene, 2003, p. 3), representing a strictly necessary articulation in the process of an individual’s situation and multidimensional integration in the world. Any fragment of the reality has to get a mental icon in the human’s internal system of representation. The basic mental images or ideas compose our beliefs. Theorists who adopt the mental representation view of concepts, usually identify concepts with basic mental representations. According to the Representational Theory of the Mind, beliefs and desires and other propositional attitudes enter into mental processes as internal symbols (Margolis, 2014, p. 2). For example Mary may believe that Andy is fatter than

Sam, and also believe that Sam is fatter than Bill. If taken together, these considerations will cause Mary to believe that Andy is fatter than Bill. This conclusion results from Mary's mental representations about Andy, Sam and Bill and their relative weights. It becomes clear that mental symbols have a characteristic causal-functional role in the formation of beliefs. The mental symbols that compose Mary's beliefs are Andy, Sam, Bill and Fatter, their content and the way they are arranged determine the manner she evaluates the situation.

Admitting that concepts are entities or images of some kind inside the head (Blunden 2012, p. 14), one should consider that the world of mental objects and the one of material objects are two different worlds. It is possible for one and the same object to receive different mental representations in different individuals. It can also be true that there are concepts human beings may never acquire, because of their intellectual limitations, or because the sun will expand to eradicate human life before humans reach a stage at which they can acquire these concepts (Peacocke, 2005, p. 169). This implies that not all the objectively existing concepts are word-sized.

The objective world of material objects is seen atomistically, the mental object of the existing entities of the objective world the individual consciousness of a subject establishes, is built on some attributes or features of these real objects. Still, in order to get to the essence of the object, that sometimes transcends the contingent visible attributes or features, one should connect the processed concept with others acquired earlier through social experience and interaction. Thus, Askoldov's qualifications of the concept as "a unit of memory", "a quantum of knowledge" or "a germ of mental operations" appear more than accurate.

Speaking about the relation between the concept and the fragment of the reality it corresponds to, it is worth mentioning the Conceptual atomism theory, according to which lexical concepts have no semantic structure, a concept's content being determined by its direct relation to the world and not depending on its relation to other concepts.

It is indeed insufficient to explore the concept as just an idle image or an inert symbol. The concept also implies an ability to discriminate a concept A from non-A and to draw certain inferences about A, so that further on, the newly acquired concept could potentially become a constituent of some propositions.

According to the Classical Theory of Concepts, that dominated the concept studies till the 1970s, every concept is given by its definition. A word is taken as the sign for the concept, and the meaning of each word is explained in terms of other words (Blunden, 2012, p. 16). The definition usually involves some necessary and sufficient characteristics or features of any thing coming under the definition and being attributed to a certain class of objects. In other words, when a person uses a concept, he/she does it

according to the definition of the concept in mind (the word-sized side of the mental representation). The sum of these mental definitions, constitute a kind of dictionary, by reference to which a person's perceptual field can be interpreted. Every lexical concept is thought to be composed of some basic concepts, so that new complex concept acquisition is possible by assembling definitional constituents of the already possessed ones. Thinking and cognition, storing and transforming information are based on categorization operations in which complex concepts are matched to target items by checking to see if each and every one of the definitional constituents of the concept applies to the target.

Concepts have a content which is objective, and insofar as concepts reflect the material world that is in a continuous evolution, the concepts will be inconsistent, unstable and even sometimes contradictory. Such characteristics of the concepts assure their vitality. Philosophers as Kant and Hegel explained that some complex concepts fall into contradictions with themselves (self-contradiction) because they go beyond the bounds of possible experience (Blunden, 2012, p. 180). Definitions we give to concepts are basically grounded on environmental relations and personal experience, and express our concernment to place the concept in a semantic network.

In an attempt to make order in the semantic network built of concepts, Eleanor Rosch and her colleagues suggested to distinguish «prototypes» - referential mental representations of an individual thing which is considered most typical or ideal, all other things are included or not included under the concept depending on how much they resemble the prototype. Admitting the existence of prototypes implies dealing with typicality effects. According to the number of constituents that a concept holds in common with a prototype, it is considered to be more or less typical for the generic cognitive model. In such a way, it was experimentally proved that apples are judged to be more typical than plums with respect to the category of fruit, because the concept «apple» has more constituents in common with the concept "fruit" (Margolis, 2014, 2.1). Even if the prototype theory has its limitations, and not all reflexive operations may be reduced to similarity comparison, still, prototypes constitute parts of the structure of the concept, entering the conceptual core. The conceptual core comprises all the relevant characteristics that determine the nature of the concept and underwrite compositional processes.

Reflections about the role of eventual prototypes in the formation of concepts may be also extended to an ethno-cultural perspective. The idea of the existence of some original common models on which specific concepts are patterned within a more or less uniform socio-cultural community is supported by many thinkers belonging to both the Russian and the American schools. They claim that different people see the world in a different manner, and this is related to the culture they have acquired and to

the social environment they live in. The culture is seen as a summation or a complex of concepts and connections existing between them. A concept can be understood as bunch of culture in the consciousness of people; the culture enters the mental world marking the concepts people from different cultural areas construct. The concept is also a discrete unit of the collective consciousness, which is stored in the national memory of native speakers in verbally determinate form (Nemickiene, 2003, p. 2).

Stepanov states that the "concept" is "a basic cultural cell in the mental world of a man" (Stepanov, 2007, p. 248). Any person representing a certain linguistic and social community forms a particular picture of the world in which certain values and principles are emphasized. That is to say that together with some general features, figuring in the structure of a concept for all humans, there can exist some characteristic additional traits valid and relevant for only native speakers or for people associated with a certain civilization. An example in this sense is the concept of white birch as perceived by someone of Russian origin opposed to what this same concept means for any other nation. In this sense V. Nezornak states that the "concept is a remarkable image abstracted in a word and reflecting a fragment of the national picture of the world".

Another view trying to explain the relations existing within semantic networks constituted of concepts, is the *Theory Theory*. According to this view, a concepts network is analogized with a scientific theory, and the concepts are related to one another in the same way as the terms of a scientific theory. In this context concepts are viewed as extremely complex data structures composed of some sort of theoretical principles, laws, generalizations, explanatory connections etc. (Weiskopf, p. 8). This theory might be applicable to the cognitive activity of a subject at a certain stage of intellectual development, but it is clearly inappropriate to describe infants' or young children's constructing of knowledge, as it can't be compared to what scientists do in producing, testing and revising scientific theories, even if we take into account the simplest of them.

Discussing the relevance of the different theories treating the ontology of concepts, it is also necessary to consider the problem of the concept structure. Scientists analyze the structure of the concept from various points of view, and almost always indicate to a complex composition involving several layers or levels.

The linguist Stepanov states that the concept has a multilayered structure, including a main feature, one or several additional passive features that are historical, and an inner form that is mostly unconscious being imprinted in the verbal form. These layers are the result of the cultural changes throughout different epochs. The basic layer on which all the other strata are built is the inner form, that is also called the etymological criterion and it is the less evident for simple speakers. The most clearly understood

component of a concept is its main actual feature, familiar for all the representatives of a certain linguistic and cultural community and commonly used in communication (Balmagambetova, 2016, p. 85).

Studying the same problem, Slyshkin and Karasik, for example, propose to differentiate a notional, a figurative and a value side in the structure of a concept. The notional part is represented by the means that assure the linguistic fixation of a concept – its name, description, feature structure, definition and comparative characteristics that reflect the relation existing between a concrete concept and other groups of concepts. The figurative side of a concept comprises the totality of visual, auditory, tactile, taste characteristics of objects or events, that are reflected in human consciousness. It is also called the imagery side of the concept. Finally, there is the value side, that specifies the importance of the object, event, action etc., reflected in the concept in the educational process for an individual as well as for the society in general (Nemickiene, 2003, p. 4).

Kuznetsov speaks about a triplet model of the concept that is susceptible to express three kinds of information. The first unit of the triplet described by the Ukrainian scholar is the base that is constituted of all the entities subsumed under a concept, as well as of all their properties and relations. For example the base of the concept Mammals is constituted of all the existing or ever existed warm-blooded vertebrate animals that nourish the young with milk produced by females. The second unit is the representative part of the concept and it is about means and ways of representing the base in intelligent systems. This second part is mainly constituted of the visual images and of the linguistic descriptions of the base of the concept. These elements can exist in the consciousness of an individual as encoded iconic or sound messages (Kuznetsov, 1997, p. 101). The representative part of the concept Mammals includes a list of names of various species of animals as well as more or less detailed descriptions of the features characteristic for creatures attributed to the base of the concept. The third element of the triplet model is about linkage between the first and the second units, and methods of its construction. This element is very important as it allows to call things by their proper names and assures an adequate use and interpretation of concepts.

Another largely discussed scheme of the concept structure is the circular model, according to which there can be identified a core or a central element in the composition of a concept, from which several associative multidirectional vectors diverge. As thus, the most relevant associations with a concept name that arise in the consciousness of native speakers of a language, form the nucleus or the core of the concept, whereas the less significant or less common associations circumscribe its periphery. All this being said, it is important to mention that the concept has no clear or stable

boundaries, as it has been previously mentioned. Concepts can manifest themselves in the mind with the help of language units of different degree of complexity: one and the same concept may be expressed by lexemes, idioms, collocations or sentences.

According to another approach to the analysis of the circular model of the concept structure, the basic notion underlying the concept has the role of the kernel or core, while everything that is added by culture, traditions and people's personal experience stays at the periphery (Nemickiene, 2003, p. 5). Popova and Sternin consider that the internal structure of the concept includes a sensual image, informational content and an interpretative field. The sensual image may be perceptual (formed with the help of sensory organs) or cognitive, when it's formed by metaphorization of objects or of phenomena. The informational content of the concept consists of certain cognitive features that determine the most important and distinguishing features of an object or phenomenon. The cognitive features, which interpret the informational content of the concept, influence the formation of the interpretative field. The interpretative field is not homogeneous and can be divided into several zones: the evaluative zone (expressing the general assessment), the encyclopedic zone (it characterizes the features of the concept that need to be learnt, experienced etc.), the utilitarian zone (it expresses people's utilitarian, pragmatic attitude towards the denotatum of the concept, their knowledge concerning the possibility and the peculiarities of its use for some practical purposes), the regulatory zone (it prescribes what is to be done and what is not to be done in the sphere "covered" by the concept), the socio-cultural zone (it results from the relation existing between the concept and the people's culture and way of life: customs and traditions, certain artistic works and texts), the paroemiological zone (it is reflected in proverbs, sayings, aphorisms etc., representing the totality of affirmations and of representations about the phenomenon corresponding to the concept that can be found in national paroemias) (Popova & Sternin, 2007, p. 82).

We have to admit that all these hypothesis or structure models may be of great help in describing the concept and trying to apprehend its complex nature from various perspectives and having definite objectives. But whatever the chosen perspective is, it is always true that in order to fully manifest itself in the cognitive-communicational processes, a concept has to be couched linguistically, and the crucial concepts have a verbal expression. Thinking and language are tightly related and one has to think in his/her natural language to be able to solve tasks that are superior to contrastive discrimination specific for animals (Margolis, 2014, 4.2).

Language and words are especially important in the process of learning and formation of new concepts. Citing Vygotsky, Andy Blunden in his book

«Concepts. A critical approach» points to the fact that concepts may be divided into pseudoconcepts, that are acquired by habit, spontaneously and without conscious awareness, and true concepts that can only be acquired with conscious effort and awareness (Blunden, 2012, p. 275). In this logic, pseudoconcepts are forms of activity that not only higher animals but even machines can attain, whilst the whole process of the development of true concepts hinges around words and word meanings. Thus true concepts refer to the highest intellectual activity, mental consciousness and independent thinking.

According to Vygotsky thought can be exteriorized and communicated only indirectly, in a mediated way. The internal mediation of thought is realized first by meanings and then by words. This means that thought is never the direct equivalent of the word meanings. Meaning is only an intermediary stage of thought in its path to verbal expression. So thought is always individual and subjective, depending on one's inclinations and needs, interests and impulses, affect and emotions (Blunden, 2012, p. 276).

Thought can be only partitioned into words, as thought is something of clearly greater extent and volume than a separate word. Very often to express one and the same thought, an orator may need a considerable time and a whole text in order to make others understand what he means and wants to transmit. At the same time, Blunden claims that in order to understand other's thoughts, and therefore concepts, we have to go behind speaking and thinking, to the sphere of thought motivation, its «affective-volitional basis». That is to say the concepts have a volitional and affective content as well as a cognitive one, and both these sides come from the outside world, as individuals draw them from the outside through collaboration within different activities in which they produce and reproduce their life and that of others. The volitional tasks that motivate our activity have their origin in the institutions of the wider society in which we participate (*idem*, p. 277). The most important concepts originated in ancient times and were refined through collective experience. Their circulation and continuity were assured by different forms of tuition. In such a way concepts are grounded in collective consciousness, in social experience, they merge with the general culture of a community and basically, the linguistic community determines the correct use of concepts.

Making a conclusion to all the cited standpoints, we should start from the inevitable interdisciplinary nature of the contemporary research on concepts. It is impossible to give a unipolar and strictly specific definition to the concept. Representing crucial structural and functional units of human intellectual activity, concepts embody human theoretical and practical understanding of the things and phenomena from both the external and internal worlds. Concepts are relevant for learning, recognizing new objects and events and for harmonious integration and adequate interaction with the environment. Analyzing and describing concepts one should keep in

mind that these are ideal units of knowledge, elaborated as mental representations of existing objects and phenomena, susceptible of being externalized by language units and underlying human thoughts and beliefs. Concepts are clusters of meaning that are of primary importance for the categorization of the kinds of things there are in the world.

Any signal coming from one's perceptual field can be interpreted with reference to the conceptual dictionary everyone of us possesses, having acquired it as the result of learning, observation, social experience and interaction. Any new concept is configured with reliance on some referential prototypes that involve an inventory of typical characteristics that allow to classify a new thing as belonging or not to a certain concept. Because of the tight connection between concepts and real elements of the objective world that is in a permanent evolution, it becomes evident that concepts have to be also flexible and changing. The complex semantico-functional network in which all our concepts are organized, is an individually marked structure with some specific configurations that have their origins in our daily praxis, intellectual background and cultural medium.

The multi aspectual nature of the concept leads to a variety of structural models researchers work on, trying to explain and to reproduce exhaustively the composition and the internal organization of the concept. The triplet model, the circular scheme and the zonal pattern are among the most discussed attempts to circumscribe the limits of something as extended as human thoughts. Analyzing and synthesizing all these statements is essential for taking a multipolar and aware position among the variety of hypotheses on a phenomenon as complex as the concept is.

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