Polysemous Words Functioning And Process Of Concept Formation

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Abstract

Carrying out the research task related to the study of semantic layers of different levels, ideal object revealing regardless of material substances, definition of the most significant, essential, and general semantic and mental properties, qualities and mechanisms of consciousness and basing on the invariant theory we introduced the concept of \textit{lexical invariant}. It is interpreted by us as an aggregate of the most significant universal semantic components which are intuitively defined in the course of phenomenological reduction and are unchanged in the stream of meanings variation composing the semantic formula of a word or phrase.

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Keywords: cognitive linguistics; lexical eidos; lexical invariant; polysemous word; phenomenology; semantic core.

1. Introduction

The concept of variant and invariant nature refers to different fields of human knowledge: mathematics, logic, linguistics, etc. But in each field this general-particular and abstract-certain relationship has its own specific nature. The change of form is an objective and inevitable consequence of the language evolution and to this effect it is feasible and useful to research and analyze invariants. Invariability in the language enables coding of polymorphous semantic information.

In analytic philosophy it is conventional to widely interpret the invariant. Here it is understood as an abstract language unit possessing the aggregate of characteristics and main features of all its certain realizations construed as variants of this unit. We understand the \textit{invariant} as \textit{an abstract language essence containing a set of semantic...
component. In one of its configurations it is the basis or all or a number of the meanings making up the semantic structure of the word in accordance with the intuition of the average native speaker. The problem is that the resulting semantic core cannot be construed as an invariant in the mathematical sense, since it is not necessarily included in all meanings of the word to the full extent. Therefore, with regard to the language it is more appropriate to use the term "lexical invariant".

The idea of invariant is opposite to the variant as a certain realization of the language unit. This opposition is associated with the dichotomy “language – speech”: the invariant is the language unit, and the variant is a certain realization in the speech (Pesina, Solonchak, 2014).

1.1. Criticism of invariant theories

More studies, particularly of the recent years, indicate that detachment of the invariant meaning is considered acceptable in principle, because it is supposed to make perception of the concept easier for an individual (although the combination of two levels- mental and verbal - should be still noted). There are well-known invariant theories of the meaning organization based on the idea that every language unit has the only meaning, but it transforms depending on the context. There have been attempts to establish a link between the meanings of words (semantic bridge in the theory of "meaning-text").

The criticism of invariant theories comes down to the idea that one can very seldom link together the lexical variety of the context-dependent meanings. The only way to solve this task is to use a very abstract description, where the invariant is far from each of the certain applications of the language units. In this regard, the researchers stick to a more optimistic position, presuming that it is quite possible to bring together all the context meanings of polysemantic words, using a particular algorithm (proposed below). The resulting invariant, indeed, is of the abstract nature, but it does not prevent it from combining all existing meanings.

Another objection is due to the fact that not every word has the meaning of this abstraction level which is inherent to the invariant. It should be noted that the core is abstract, but not the meanings of the word. They can be as specific as possible and yet semantically related to the substantive core. Polysemy as a phenomenon can be explained only by the existence of the substantial core.

However there is a general skeptical attitude to the idea of invariance in the science and philosophy of language. Thus, according to some of the researches recognition of possible "extra-linguistic" meanings can result in the recognition of independently existing notions, and therefore in the idealistic concept.

The point of criticism was the following: should the out-of-context meaning of a polysemantic word be determined as its invariant meaning, realized by various contextual meanings, it have to be admitted that the word is never used in this sense in speech, and thus it cannot be treated as a language phenomenon. The invariant meaning cannot be non-language, since it is based on real attributes, though of the most general nature.

If it is impossible to list offhand all existing meanings of the polysemantic word, then why do we, without any hesitation, at lightning speed, refer these or those numerous verbal realizations to one word? The task of semantic unity of the polysemantic word should be solved by means of the out-of-context meaning. It should be determined as general, and it is formed as a result of the word functioning in the language system. Besides it should not be equated to the notion existing on an absolutely different level.

1.2. Invariant meanings formation

According to cognitive scientists, the meanings of the words are originated and formed not at the semantic level but in some conceptual formations, schemes, i.e. are relevant to the cognitive system. Relatively small set of basic concepts (conceptual structures) bind and correlate derived meanings, combining them in the common pool of human knowledge (Lakoff, 1990). Stored in consciousness, the meanings are waiting for an impulse to be realized.

The invariant meaning is formed in person’s mind gradually in the course of different actualizations of secondary meanings in various contexts. When we are talking about variation, the issue of invariant of all variants is inevitable. A child in the process of its development starts understanding why the same word means different things: for example, people use the word hand when they mean the multi-fingered extremity located at the end of an arm
(“friends shook hands”), the way of writing, calligraphy (“she had a clerky hand”), the pointer of a clock or watch (“The clock runs behind, please, advance the hands”), help from somebody (“I need a helping hand”).

However people sum up the previous experience of using those meanings in context and come to the conclusion through abstraction that the word “hand” is something connected somehow with a hand, items hold or taken by the hand. And when people deal with this word afterwards in a particular speech situation in another capacity as a neologism or occasionalism, they can easily define a new meaning on the basis of experience. It is the invariant meaningful core of the word that will be of help in such situation. Then, probably, an abstract semantic core is formed in the mind on the basis of semantic components of a general nature, which is a consequence of numerous actualizations of figurative meanings of this polysemous word.

On the other hand when a two-year-old child says “kaboom” it might mean a “stroke”, “it hurts”, a “whop”, as well as a “ball” or any bob in a broad sense. This example proves that from the ontological point of view the polysemy develops from "abstract" to "certain" and vice versa. The researchers have not reached a consensus yet on development of polysemy in ontogenesis.

The theory of invariants is of great importance for epistemology (theory of knowledge); it deepens and concretizes the theory of reflection. Segregation of the lexical invariant of a large group of objects results in abstraction, i.e. a collective concept encompassing the entire group of objects as a whole. Thus, the objects (meanings) making up the class (the polysemous word) and being variants relative to the invariant (the concept of the polysemous word in general), have features of both general and specific, that is unique for this object only. In other words, the objects are combined into a class due to their common features and differ from each other because of their differential components.

Since the meaningful core of a monosemous word is equal to its only meaning (since there are no other lexico-semantic variants), it is definitely irrelevant to carry out research in this field. It is typical for terms and other individual names (such as endoscope, polygamy, Collider, etc.). Such scientific terms with their single, sufficiently specified meaning, are introduced in order to overcome difficulties caused by the word polysemy of natural human language.

To derive the systematic meaning of the polysemous word covering all other possible meanings, it is important to take into account the role of the first nominative underived meaning, since the native speakers usually use the first meanings when it comes to the relevant speech forms. The next stage of generalization is an extension of the first meaning with the help of comparison component.

Thus the word “head” has a very developed semantic structure containing more than one hundred meanings. In accordance with nationally biased units of the native English speakers, the lexical invariant of this word may be formed as follows: the head is first of all the upper part of the human body that contains the eyes, nose, mouth, ears and brain or something resembling it (the top, round and/or the most important part of a larger object; the beginning or end of it). The selected part of the definition is the abstract scheme formed in the native speaker’s consciousness as a result of various actualization of more than a hundred meanings.

For instance, similar to the human head, the beginning of the human body, the “head” of a ship is the beginning of the ship. Similar to the human head, the most important part of the body; the head of fire is the top of the flame, the hottest and most active part of it. The head of a stick, roll paper, violin bow, cigar, arrow, spear, axe, etc. are all oriented in space the way the head versus the rest of the body. It means it can be located on the top position and be the beginning of the object depending on its vertical or horizontal position in space.

The “head” of a table, grave, bed is not just a beginning; it is the most important part. The head of a stream/river, i.e. the source, is compared with the human head in the sense of the origin (comparison in terms of space orientation). It means that actualization of one or another meaning of the word “head” is based on one or several components of abstract nature or the whole lexical invariant.

Each separate meaning refers to some regulative structure and points to a general rule governing the processes of categorizations and conceptualization of a social realm which are possible within the frames of some preliminary defined tunica. The lexical invariant, meeting the principle of economy, enables actualization of all existing word meanings with least possible cognitive efforts. It ensures semantic ties between the meanings of the word, keeping the polysemous word from splitting into homonyms (Pesina, Solonchak, 2014).

The discovered abstract semantic core helps with comprehension of the most complicated lexical semantic
invariants “remote” from the original meaning: head of beer, head of milk, head of the bridge, etc. If the basis is the same invariant – something on the top, something important and the beginning of something – these meanings can be easily understood and explained: they are the foam, cream and start of the bridge, respectively.

1.3. Semantic attributes of the lexical invariant

Searching of the lexical invariant (LI) is connected with determination of the basic cognitive mechanisms underlying the formation of figurative meanings, and is based on detachment of significant semantic components or attributes. The attribute is the result (anchored in the individual’s linguistic consciousness) of numerous direct references, performed or observed by the individual. The nature of attributes varies depending on the relation to the ontologically involved objects or to the sphere of “reflected” linguistic formations. Attributes can be stable and variable, differential, integral, general and specific, explicit and implicit, constant, temporary and so on. Each word has its own individuality detectable through absolutely accurate and attentive examination of the whole existing usage of this word in the language.

The integrating identifiable attributes of the lexical invariant are the following: 1) LI is a bunch of communication meaningful abstract usual meanings; 2) LI is a minimal bunch of integral and differential attributes vital for identification of an item (notion); 3) attributes of LI cannot be derived from each other; 4) LI is a meaningful invariant of all meanings of the polysemantic word; 5) the content of LI is defined at the everyday consciousness level.

The findings of later studies resulted in additional identifications of LI: 6) LI contains the program for all (or almost all) particular lexical semantic variants of the word and, vice versa each variant contains a hint on the model, its peculiar features; 7) LI controls the actualization process of metaphorical meanings; 8) a signal indicator of functioning as the basis of meanings in the bunch of abstract attributes (LI) is the meaning of general nature, «something resembling …», in the polysemantic word structure; 9) the conceptual basis for LI formation is the nominative primitive meaning oriented to the average native speaker; 10) LI is not of declarative, but of dynamic and rather procedural nature: the actualization process of meanings by the speaker is a gradual “assembly” of more complicated structures based on integral and differential components of the meaning.

LI can be interpreted as an invariant associative notional set assigned to the word in the consciousness of communicants, formed not only on the basis of the semantic structure of the word, its grammatical form, word-formation structure, motivational ties, but also on the basis of traditional usage in the society.

Lexical invariant has a communicative function is based on the following hypothesis: an individual is able to understand a statement only when he has some conceptual representation, at least a generalized one, of the reference situation described by this statement. If the listener does not see and does not know this particular situation, he has to reconstruct it on the basis of his knowledge and invariant meanings of the words contained in the statement. Thus the lexical invariant is a kind of a type reference situation which helps understand the perceived statement (Solonchak, Pesina, 2014).

Consistent with the logic and spirit of modern research in cognitive linguistics, this theory continues the trend of searching study of “ordinary” consciousness, construed as not everyday, routine consciousness, but rather as average, mass consciousness. LI’s, being a sort of stereotypes within the frames of ordinary consciousness, are created by the members of a language community as a result of uniform division of reality. Stereotypes make the communication process easier: an individual cannot process all situations alone by himself, it is enough to point to objects in general in everyday speech for the purpose of identification. The use of the proposed prototype approach to the study of lexical meaning appears appropriate for examination of formation mechanisms of the word semantic structure.

2. Conclusion

Denial of the meaning representation in the polysemous word structure implying that the word is present in the consciousness in the whole meaning system was the ground to look at a hypothesis of existing of the meaningful core of the polysemous word, i.e. the lexical invariant. We proceed from the assumption that, no matter how many
meanings are associated with a particular form, it is always the system meaning that is connected with it. It is identified as the meaning of this form at linguistic level, and it is the basis for making the actual meaning of the word at the speech level given the speech context on “one meaning – one form” principle.

Lexical eidos content is revealed at the level of scientific and logical consciousness. LI’s have identifiable attributes (with differential among them) and being a sort of stereotypes within the frames of ordinary consciousness, are created by the members of a language community as a result of uniform division of reality.

Determination of such meaningful core of polysemous words enables to reveal cognitive structures underlying semantic alterations and simulate processes causing polysemy with relative precision. Examination and research of a cognitive paradigm of problems of generation, assimilation and storage of polysemic units in mental spaces and their functioning in mental lexicon enable the researcher find a key to the mystery of organization, development dynamics and functioning of the cognitive system as a whole.

References

Lakoff G. Metaphors we live by / G. Lakoff, M. Johnson. – Chicago: The University of Chicago Press, 1990. – P. 2–247.

Pesina S., Solonchak T. (2014) The Image as an Initial Element of the Cognitive Understanding of Words // International Science Conference: International Conference on Language and Technology (June 19-20). World Academy of Science, Engineering and Technology. International Science Index Vol: 8, No:6, Part XI, Venice, Italy, 2014. – P. 994-999.

Pesina S., Solonchak T. (2014) The Sign in the Communication Process // International Science Conference: International Conference on Language and Technology (June 19-20). World Academy of Science, Engineering and Technology. International Science Index Vol: 8, No:6, Part XI, Venice, Italy, 2014. – P. 1021-1029.

Pesina S., Solonchak T. (2014) New Ways of Vocabulary Enlargement // International Science Conference: International Conference on Language and Technology (June 19-20). World Academy of Science, Engineering and Technology. International Science Index Vol: 8, No:6, Part XI, Venice, Italy, 2014. – P. 1000-1007.

Pesina S., Solonchak T. (2014) The Lexical Eidos as an Invariant of a Polysemous Word // International Science Conference: International Conference on Language and Technology (June 19-20). World Academy of Science, Engineering and Technology. International Science Index Vol: 8, No:6, Part XI, Venice, Italy, 2014. – P. 1008-1016.