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TO A PROBLEM OF COMPLEX DESCRIPTION OF SEMANTICS OF LEXICAL UNITS

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Abstract

The paper studies such major methodological problem of modern lexicography as the description of semantics of lexical units. The lexicographic meaning of lexical units formulated according to the principle of reductionism is presented in explanatory dictionaries (listing a minimum features of denotation sufficient to express its meaning). However, “when formulating the description of a word meaning a lexicographer often relies on the personal understanding of either feature of a word”, due to which “the lexical content of many words is differently described in explanatory dictionaries”. This phenomenon demonstrates the principle of plurality of metalanguage description of mental units causing the difference in meanings of the same lexical units. The generalization method of dictionary definitions aimed at “the maximum complete description of the meaning of the studied word in the language system on the basis of all available explanatory dictionaries” and based on the theoretical principle of complementarity of dictionary definitions is developed to solve the problem of discrepancies of descriptions of meanings of one and the same lexical units. The generalization method of dictionary definitions shall be supplemented with contextual and experimental methods since the analysis of lexical units in speech context or psycholinguistic experiments reveal new semes, which were not recorded in any explanatory dictionary. Such complex study shall be conducted within componential semasiology. Using the example of semantic analysis of a toponym *Derbent* the current study shows the possibilities of complex semantic description of lexical units.

Keywords: Lexicographic value, seme, toponym, psycholinguistic experiment.

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1. Introduction

The semantic analysis of linguistic units is one of most relevant topics in modern linguistics (Mimeau, Laroche, & Deacon, 2019; Grigoriev, 2018; Grosu, 2018; Norman & Mukhin, 2018; Babenko, 2018; Gray, 2018).

The number of different linguistic dictionaries is rapidly increasing at present.

Various works are devoted to modern problems of lexicography (Volkov, 2015; Generalova, 2015; Ivashchenko & Lyashchuk (Kazak), 2015; Kozulina, 2015).

The most important methodological problem of lexicography at the present stage of its development is the description of word semantics (Rudakova, 2015).

The present stage of linguistic science is characterized by "the strive towards complete, or even integrated, dictionary representation of system word relations, towards deeper and flexible representation of their semantics" (Goldin & Sdobnova, 2014, p. 57).

2. Problem Statement

Traditionally word meaning is formulated in explanatory dictionaries according to the principle of reductionism: as a minimum set of denotation features sufficient to express its essence.

There are two problems. First, since "when formulating the description of a word meaning a lexicographer often relies on the personal understanding of either feature of a word", due to which "the lexical content of many words is differently described in explanatory dictionaries" (Rudakova, 2015, p. 153). This phenomenon demonstrates the principle of plurality of metalanguage description of mental units causing the difference in meanings of the same lexical units (Sternin, 2012).

Second, the analysis of lexical units in speech context or psycholinguistic experiments reveal new features not recorded in any explanatory dictionary.

To solve the first problem, the Russian Voronezh Theoretical and Linguistic School developed the generalization method of dictionary definitions aimed at "the maximum complete description of the meaning of the studied word in the language system on the basis of all available explanatory dictionaries" (Rudakova, 2015, p. 154). The generalization method of dictionary definitions is based on the theoretical principle of complementarity of dictionary definitions, according to which due to various reasons the dictionary definitions of one and the same lexical units in the same dictionaries may express different denotative features, however complete lexicographic description of meanings is possible through generalization of dictionary definitions supplementing each other.

In addition to lexicographic analysis (generalization method of dictionary definitions) the solution of the second problem requires contextual and experimental methods of semantic analysis.

To achieve the accuracy of the analysis the study shall be conducted at the level of semes – meaning is described as a set of discrete semantic components – semes.

The possibility to divide the meaning of lexical units into semes was discovered in the middle of the 20th century. A seme is a microcomponent of the meaning of a lexical unit expressing certain specific feature of its denotation.

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The ordered set of different semes (integrated, differential) forms a *sememe*. The sememe expresses one of the meanings of either verbal unit (a set of sememes of multivalent words forms their *semanteme*).

The method of seme analysis (componential analysis) is used to study the meaning as an ordered set of semantic components (Vinogradova & Sternin, 2016, p. 19).

There are different methods of seme "extraction": logical analysis of dictionary definitions, context analysis of the use of lexemes in texts, semantic interpretation of associative verbal reactions received during psycholinguistic association experiments.

The given study shows the possibility of componential analysis on the example of the semantics of a toponym *Derbent* via the generalization method of dictionary definitions and experimental methods.

The analysis of dictionary definitions of a toponym *Derbent* and the associative verbal reactions received to the word stimulus *Derbent* during psycholinguistic association experiments is carried out to receive the relevant language material for its further seme description. Dictionary definitions and associative verbal reactions were subjected to seme interpretation.

According to the principle of plurality of the metalanguage description of mental units a set of semantic components, the number of sememes of the same lexical units and definitions of the same meanings in dictionaries cannot coincide. There is a need to select authoritative dictionaries and to carry out the seme analysis of dictionary definitions.

In terms of the experimental part we shall apply a complex of experimental methods (for example, a combination of free and directed association experiments) to ensure high degree of reliability of conclusions.

3. Research Questions

The subject of the study is the toponym *Derbent*.

4. Purpose of the Study

The purpose of the study is to demonstrate the opportunities of the seme analysis for the description of meanings of lexical units developed within the Russian Voronezh Theoretical and Linguistic School.

5. Research Methods

Seven dictionaries were used to study the semantics of a toponym *Derbent*: Dictionary of modern geographical names (DMGN, 2006), Geographical names of the world: Toponymical dictionary – GNW (Pospelov, 2002), Big encyclopedic electronic dictionary (BEES, 2010), Toponymical dictionary of the Caucasus (TDC, 2011), Encyclopedia "Fatherland" (EF, 2000), Historical and toponymical DICTIONARY OF RUSSIA - HTDR (Pospelov, 1999), Concise toponymical dictionary - CTD (Nikonov, 1966).

Besides the analysis of dictionary definitions, the study covered experimental methods allowing "describing the semantics of a word, compensating insufficiency of dictionary description of meanings currently recognized by many linguists and psycholinguists" (Vinogradova & Sternin, 2016, p. 43).

Psycholinguistic experiments were carried out during 2018 (Makhaev, Polekhin, & Sternin, 2018a, 2018b).

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6. Findings

Results of the analysis are presented in Table 1. The table contains 8 columns (a column with semes and columns with dictionaries) and 16 lines (every line reflects the name of a seme). The paper shows the reduced version of the table in view of volume restrictions (full version of the table consists of 34 lines according to the total number of dictionary definitions revealed as a result of seme analysis).

The structure of the seme column: seme name; seme frequency equal to the number of its occurrence in dictionaries; index of seme intensity (IIs) revealed in the analysis of dictionary definitions and calculated according to the following formula:

$$\text{IIs} = \frac{\text{Sem}}{\text{DIC}}$$

where,

Sem – number of semes in definitions of analyzed dictionaries

DIC – total number of analyzed dictionaries

Thus, the hyperseme “city” is specified in all analyzed dictionaries, therefore, its IIs equals 1 (7:7=1). IIs of the seme “in the Russian Federation” is equal to 0.14 (1:7=0.14).

Simes are shown in the table from the most to the least frequent (by IIs). The sign “+” in corresponding columns means that the seme is updated in this dictionary (the sema “On the bank of the Caspian Sea” is updated in DMGN, BEED, TDC, EF and CTD and respectively is not updated in GNW and HTDR). Table 01 shows semes with IIs of not less than 0.28.

Table 01. Semes revealed in the analysis of dictionary definitions

Seme	DMGN	GNW	BEED	TDC	EF	HTDR	CTD
City 7 IIs=1	+	+	+	+	+	+	+
In the Republic of Dagestan 7 IIs=1	+	+	+	+	+	+	+
On the bank of the Caspian Sea 5 IIs=0.71	+		+	+	+		+
The name is derived from Iran “derbent” and means “outpost, fortress, gate, center” 4 IIs=0.57		+		+		+	+
Founded in 438 A.D. 4 IIs=0.57	+	+	+			+	
There are factories 3 IIs=0.42	+		+		+		
Industry 3 IIs=0.42	+		+		+		
There are museums 3 IIs=0.42	+		+		+		

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Theatres 3 IIs=0.42	+		+		+		
Jumah-mosque 3 IIs=0.42	+		+		+		
There is citadel Naryn-Kala 3 IIs=0.42	+		+		+		
With the population of N thousand people 3 IIs=0.42	+[1]		+[2]		+[3]		
Railroad and rail station 2 IIs=0.42	+		+				
There are factories 2 IIs=0.28			+		+		
Well known 2 IIs=0.28	+				+		
As part of Russia 2 IIs=0.28	+				+		
Regional center 2 IIs=0.28		+				+	

Following the analysis of dictionary definitions 34 semes were defined, from which 2 semes are updated in all 7 analyzed dictionaries, 1 seme – in 5 dictionaries, 2 semes – in 4 dictionaries, 7 semes – in 3 dictionaries, 5 semes – in 2 dictionaries, 17 semes – only in 1 dictionary (Figure 01).

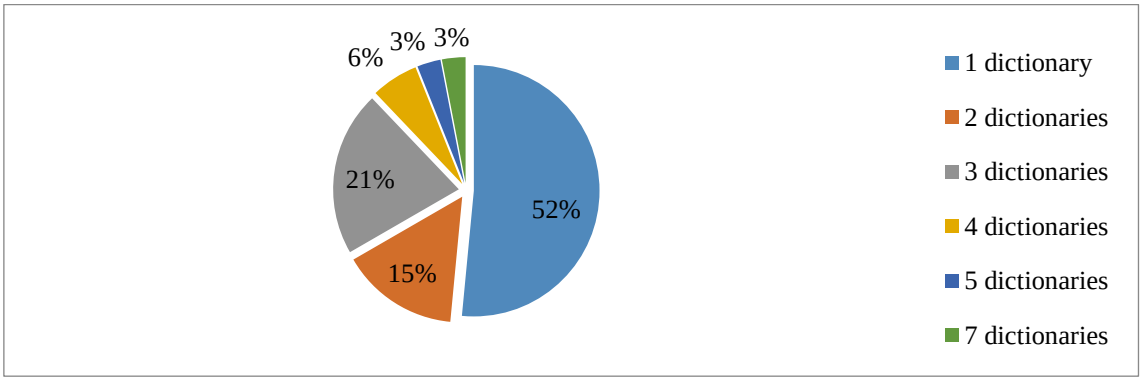

Figure 01. Number of semes in analyzed dictionaries

In this case the theoretical principle of complementarity of dictionary definitions is confirmed.

Further the study shows the results of semantic interpretation of verbal associative reactions received during psycholinguistic experiments (Table 02). The table consists of 4 columns (a column with semes and columns with types of psycholinguistic experiments) and 40 lines (every line refers to the name of a seme). The paper shows the reduced version of the table in view of volume restrictions (full version of the table consists of 40 lines according to the total number of semes revealed as a result of experiments). The table shows semes with IIs of not less than 0.04.

[1] 101 thousand people (2002)
[2] 82 thousand people (1992)
[3] 91.1 thousand people (1998)

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The structure of the seme column: seme name; seme frequency equal to the number of its occurrence in experiments; index of seme intensity (IIs) revealed through experiments and calculated according to the following formula:

$$IIs = \frac{n}{N}$$

where,

n – number of examinees updating a seme in experiments

N – total number of examinees

Simes are shown in the table from the most to the least frequent (by IIs).

Table 02. The results of semantic interpretation of verbal associative reactions

Seme	**nSAE**	**tsNAE-1**	**tsNAE-2**
There is citadel Naryn-Kala 112 IIs=1.12	+	+	+
In the Republic of Dagestan 50 IIs=0.5			+
The oldest city in Russia 16 IIs=0.16	+	+	
In the south of the Russian Federation 15 IIs=0.15			+
In the Russian Federation 13 IIs=0.13			+
On the bank of the Caspian Sea 12 IIs=0.12	+	+	+
In the south of the Republic of Dagestan 8 IIs=0.08			+
City 6 IIs=0.06	+		
Dirty city 5 IIs=0.05	+	+	
There are museums 4 IIs=0.04		+	
Imbankment 4 IIs=0.04	+	+	
Alcoholic drinks 4 IIs=0.04	+	+	
The city is 2000 years old 4 IIs=0.04		+	
Historical 4 IIs=0.04	+	+	
Disorder in the city 4 IIs=0.04	+	+	

Following the results of experiments 40 semes were defined, from which only 2 semes were updated in all three experiments (“On the bank of the Caspian Sea” and “There is a citadel Naryn-Kala”); 30 semes are updated in one out of three experiments, and 8 – in two (Figure 02).

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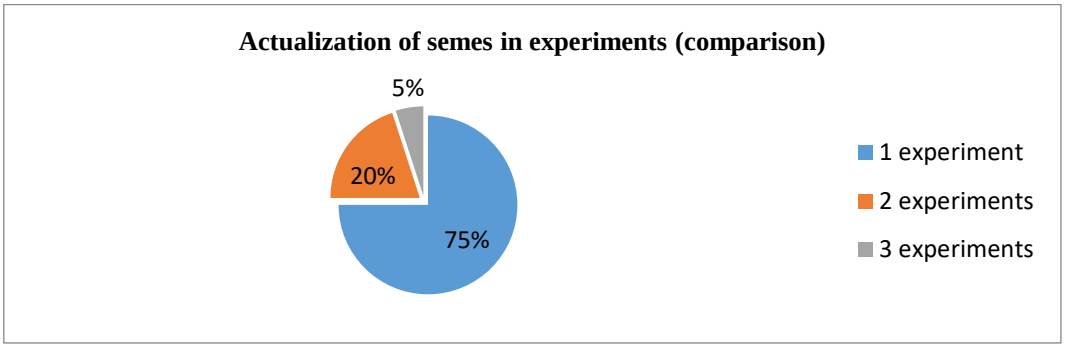

Figure 02. The results of experiments 40 semes

It shall also be noted that 40% of semes (21 semes) are updated through tsNAE, 39% (20 semes) – through tsNAE -1, and 21% (11 semes) – through tsNAE -2 (Figure 03).

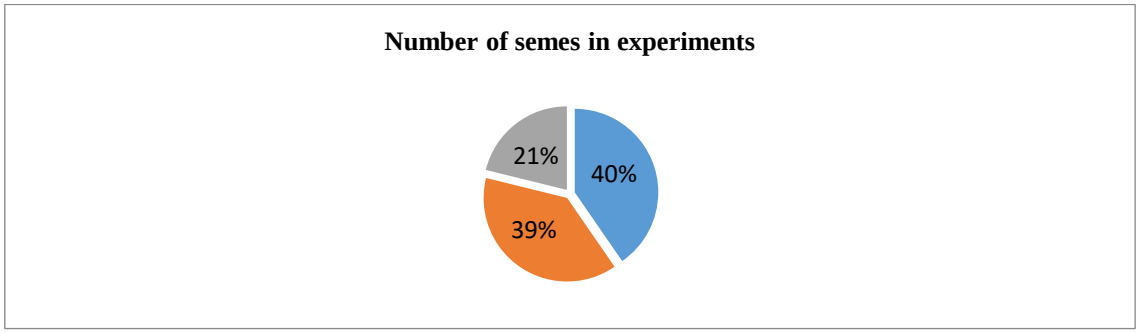

Figure 03. The results of experiments 40 semes

In this case the thesis on the need to use several types of experiments is confirmed by psycholinguistic study. Some experimental methods allow identifying semes, which are not identified when the others are used. For example, in the given the study the semes “In the Russian Federation” (IIs=0.13), “In the Republic of Dagestan” (IIs=0.5) were updated only through tsNAE -2; semes “There are museums” (IIs=0.04), “The city is 2000 years old” (IIs=0.04) – only through tsNAE -1.

7. Conclusion

The study allowed revealing different quantity of semes regarding a toponym *Derbent*. Sema present in some explanatory dictionaries and not present in others were defined. Besides, semes not recorded in any explanatory dictionary were revealed during psycholinguistic experiments.

This makes it possible to conclude that the explanatory dictionaries illustrate meanings in a certain (limited) volume.

The study of lexical units by experimental methods allow receiving thorough descriptions of their meanings.

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