

КОРПУСНОЕ ИССЛЕДОВАНИЕ КРИПТОКЛАССОВ АНГЛИЙСКОГО ЯЗЫКА

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Реконструкция скрытых лексико-грамматических именных классов (криптоклассов) английского языка опирается на критерии выявления явных именных классов языков мира. Изучение криптоклассов позволяет увеличить объем знаний для более глубокого понимания общих закономерностей в организации лексики и поиска путей формализации языковой семантики.

Ключевые слова: криптоклассы, именные классы, скрытые именные классы, английский язык, языковая семантика.

A CORPUS-BASED STUDY OF NOUN CRYPTOTYPES IN ENGLISH

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We develop a method of identifying noun cryptotypes in English, relying primarily on the Corpus of Contemporary American (COCA) and the results of typological studies. The study uses data-oriented and theory-oriented approaches to linguistic description. A cryptotype is referred to the principle of distribution of nouns among classes in accordance with a certain semantic feature and with reference to the typological principle of contrastive grammar. The class membership of a noun is evidentially revealed in syntax, particularly in collocations which bear the classifying function of the noun class. The semantic, morphologic and syntactic criteria for identification of a noun class are discussed. The study of cryptotypes concerns the issues of grounding, recognition, and reasoning. An adequately formalized description of cryptotypes can be used in computational modeling and text processing.

Key words: cryptotypes, noun classes, English, language semantics, computational modeling, text processing.

1. Introduction

The main point of this paper is to exemplify a method of exploration of covert noun classes, and to justify its applicability to applied linguistic technologies and its significance for the study of linguistic categorization, metaphor, and lexical systems in typological perspective. The method exploits the term *cryptotype* introduced by B. Lee Whorf (1956), and develops his idea of *phenotype* (overt word class) vs. *cryptotype* (covert word class) distinction.

“I call a cryptotype a linguistic classification like English gender, which has no overt mark actualized along with the words of the class but which operates through an invisible “central exchange” of linkage bonds in such a way as to determine certain other words which mark the class, in contrast to the phenotype, such as gender in Latin” (Whorf, 1956, p. 72)

Throughout this study the Whorfian understanding of a noun cryptotype (largely confined to “English gender”) has been “reincarnated” and advanced. Cryptotype is widely understood as an implicit rule of language use which can be extended to noun categorization. As V. A. Vinogradov (1991) and A. A. Kretov (2010) have argued, noun classes in world languages vary in degree of grammatical representation. One can think of grammar structure as a kind of scale. At the one end of the scale is the most grammaticalized type of a noun class that of gender in European languages. At the other end is the least grammaticalized class of so called numeratives (e.g., lexical count words in Asian languages). A variety of noun classifications in world languages is in between. This is why, a noun class (NC) is approached in this research as a class of Lexical Grammar. Such approach to noun classes evoked in different types (cryptotype vs. phenotype) allows for a more holistic view of language. The reconstruction of cryptotypes of English nouns is meant to offer the paleo-semantic interpretation of noun classes’ formation.

The main challenge of pursuing the common grounds for the classification of nouns in typological perspective is that, presumably, there should be a universal set of noun properties reflected in grammatical meanings of some languages (morphologically tagged) vs. lexical meanings of others (marked by lexical selection, e.g., in a verb stem in syntactical constructions)¹.

A cryptotype is regarded as a covert noun class of Lexical Grammar, where the class membership is marked by lexical selection in the construction rather than a morphemic tag. A cryptotype can be identified owing to the “typological principle of contrastive grammar”. The principle is as follows: if a NC is grammatically mapped (represented) in a language (L1), and is NOT represented in the Grammar of L2, it is viewed as a grammatical lacuna of L2 and studied in latent Grammar or Lexical Grammar of L2.

In this research of cryptotypes we have adopted the practice of describing noun classes in the world languages (Dixon 1968, Rosch 1973, Givon 1996, Vinogradov et al, 1996, 2000, Gillon 2005, just to name a few); the main achievements in the investigation

¹ About the universal menu of grammatical signs (cf., e. g. Chvany 1995, Itkonen 1994). The problem of discovering lexical universals is under consideration in, e. g., “Aquamotion” (2007).

of metaphoric representation of concepts (Arutjunova 1976, Uspenskij 1979, Johnson 1980, Lakoff 1986, Lakoff & Johnson 1987, Kövecses 2002, 2005) and the primary metaphors theory (Grady 1997); the implications of Covert Grammar (Katsnelson 1972); the basic assumptions of construction grammar (Fillmore 1985, Kay & Fillmore 1999), specifically, (Lakoff 1987, Goldberg 1996), Pattern Grammar (Hunston & Francis 2000) and the concept of collocation (Gries & Stefanowitsch, 2003, 2004).

The paper is structured as follows: Section 2 deals with the main criteria for identifying a noun class proposed by the Russian Typological School. In Section 3 we will focus on the semantic and syntactic criteria for recognizing the English cryptotype 'Res Longa'. Section 4 will conclude the paper.

2. The main criteria for identifying a noun class

According to the Russian Typological School, there are three aspects of noun classes' exploration: semantic, morphologic and syntactic (Toporova 1996, 25). Since a cryptotype lacks morphological marking, it is meant to be identified via the syntactic and the semantic criteria.

2.1. Semantic criterion for identifying a noun cryptotype

Like many overt noun classes of African languages (see Vinogradov 1996, Toporova 1996, Koval' 1996 & others) a cryptotype is semantically heterogeneous. It means that the nouns a class incorporates bear diverse lexical meanings but they are united owing to the "prototypical categorical attribute or feature" (PCA) which underlies the noun class. While the PCA is indeed part of the core meaning of the nouns that are called class prototypes, there are nouns that are only associated with the class because the PCA is the element of their metaphorical meaning, i.e. they are conventionally attributed to this class of nouns.

To illustrate, let us take the PCA 'being liquid'. It underlies the overt noun class DAM (so called class of liquids) in the Pular-fulfulde language (Koval' 1996) and languages of Bantu family (Toporova 1996). With reference to the "typological principle of contrastive grammar" we can identify the cryptotype "Liquidus" in English which incorporates class prototypes (*water, blood, milk*) as well as class metaphor-types, i.e. metaphor-driven members of the class (*life, color, truth, information, etc.*). The latter are attributed to the class in accordance with their metaphorical meaning that bears the traces of the nouns' former occurrences, which in their turn reflect the cognitive associations of these abstract entities with the properties of liquids.

This semantic diversity of the class can be accounted for by the analogy principle of human cognition as well as the "law of metaphor", both of which would regulate the linguistic categorization of human experience at the early stages of mind and language development. Since analogical mapping is a key cognitive operation (Fauconnier 1997), it can be assumed that such concepts as 'life', 'time', 'truth', and 'color' were cognitively associated with the properties of liquids and categorized as liquid, so that the lexemes

for these concepts were attributed to the class of nouns which share such properties. The consensus view emerging from a large body of synchronic and diachronic research acknowledges abstract concepts being largely metaphorical which means that most of our nonphysical reality is conceptualized via physical reality, that is, in terms of physical domains of experience. This approach to categorization and embodiment of immaterial, incorporeal, intangible, insubstantial, impalpable concepts of abstract dimension was independently introduced in the works of Arutunova 1976, Uspenskiy 1979, Lakoff & Johnson 1980, 1987, and further refined in the framework of cognitive linguistics.

Similarly, the restoration of another four cryptotypes for English has been attempted so far:

- Round objects (prototypes: sun, egg)
- Solid, long, pointed objects (prototypes: stick, rod, spear, arrow)
- Containers (prototypes: container)
- Hand-fit objects (prototypes: stone, fruit, seed).

In return to the semantic issues of the problem, most scholars state that the semantic foundations of noun classes in African languages have been fading; so, the semantic principle of class formation is losing its validity for the study of language systems (Vinogradov et al 1996). Hence the tradition in Africanistics to code noun classes in numerals to lessen the value of vague and obscure lexical semantics of the class. Curiously enough, infants start out with semantic categorization criteria, but at some point they abandon them (Gillon 2005: 447).

By contrast, the morphological principle of class formation remains strict enough: all nouns of the class are marked in themselves by a morphemic tag. For example, the class DAM and class 6 in Bantu languages include names of liquids and names of abstract entities, the latter (e.g. *life* or *truth*) are marked by a morphemic tag. However, the loanwords that enter African languages do not necessarily receive the morphemic tag of the class but are colligated in syntax. (e.g. Lutskov, 1996). Thus, the semantic and morphemic criteria for NC identification are fairly relative while the syntactic criterion appears to be the most relevant one to NC identification.

2.2. Syntactic criterion for identifying a noun cryptotype

V. A. Vinogradov (1996, 9) shows that when the semantic criterion is ambiguous, and the morphemic tag of the class has been obliterated, the syntactic agreement, even though implicit, becomes the only reliable warrant of a noun classification. Schematically, the cryptotype recognition procedure is as follows: class prototypes \Leftrightarrow classifiers \rightarrow class metaphor-types. Identification of noun cryptotypes in English starts from the contextual analysis of the class prototypes in corpora. The detailed investigation of the prototype occurrences in corpora allows recognizing the constructions, or rather collostructions, which can be further used for the purposes of classification recognition. Collostruction is understood as the pattern of co-occurrence between the collocating items (collexemes) which occur preferably in certain constructions (cf. Gries and Stefanowitsch 2003, 2004). The prototypical nouns of a cryptotype

and the words which assign the meaning to the construction, are called collexemes. It should be noted, that this research is not concerned with measuring collostructional strengths between collexemes; collostructions are treated as classifiers of noun classes, or a means of lexico-syntactic recognition of the class. The main focus of the study is collostructional patterning observable within the argument structures associated with predicating words. Additionally, N of N constructions are taken into account. Then we undertake a corpus analysis of abstract nouns' aptitude for filling the syntactical slots of classifiers. The class membership of a noun is diagnosed when it occurs in the collostruction(s) associated with a particular cryptotype.

All things considered, a cryptotype can be defined as the principle of distribution of nouns among classes in accordance with a certain semantic feature (PCA) and with reference to the typological principle of contrastive grammar, evidentially revealed in syntax, particularly in classifying collostructions of the noun class.

Let us consider an example of cryptotype identification.

3. Case study

A corpus-based study of the English cryptotype "Res Longa" relied primarily on Corpus of Contemporary American (COCA²). The work started with corpora data retrieval and manual sorting out relevant results from the accidental ones, received from *List* display of collexemes (e.g. <stick> + <prick>) as well as *KWIC* concordances for "Res Longa" prototypes. A series of informal experiments (in the shape of questionnaires for native speakers of American English) have been designed in order to gather data unavailable in the corpus that might have tested the hypotheses of the research.

3.1. Classifiers of the cryptotype RES LONGA

The cryptotype "Res Longa" is a lacuna in the Grammar of English, which we attempted to approach with the help of the principles described in Section 2.

Most languages of Bantu family, Fula family and languages of South-eastern Asia (Vietnamese, Japanese, dialects of Chinese, Burmese) have an overt grammatical NC with the PCA 'inanimate, hand-fit, long object of fixed pointed shape'. Furthermore, Burmese differentiates 'long objects' and 'pointed instruments' (cf. Hla Pe 1965). Clearly, the shape and size of inanimate objects as features, deeply entrenched in the human bodily experience and cognition, tend to emerge in language systems in either way: phenotype or cryptotype. According to the contrastive principle this fact can be regarded as a basis for the identification of the cryptotype "Res Longa" in English.

Among the class prototypes are such nouns as *stick*, *rod*, *prickle*, *arrow*, etc. All of them are polysemantic with all their meanings related to the solid long pointed shape (SLPSh) that fits the hand. Noun *stick* (OE **sticca*) is derived from the verb

² Davies, Mark. (2008-) The Corpus of Contemporary American English (COCA): 410+ million words, 1990-present. Available online at <http://www.americancorpus.org>.

(OE *stician* ← Teut. Root **stik* — ‘pierce, be sharp’). Apparently, the entities that the prototypes named were strongly associated with the main functions of the pointed shape: its penetrating capacity. Hence the cultural value of (SLPSh) that of weapon, tools, symbols of power including religious ones.

Let us consider the classifiers of the cryptotype “Res Longa”.

- Subject transitive classifiers [a pointed object pierces smth.], [a pointed object penetrates smth.], [a pointed object punctures smth.], [a pointed object pricks smth.], [a pointed object punches smth.], [a pointed object spears smth./smb.], [a pointed object sticks smb.].

The collocation [smth./smb stings smb.] requires special attention. The question arises if it is apt to diagnose the class membership of a noun? The argumentation for its status as a classifier of the cryptotype Res Longa is as follows. The OED defines *to sting* as ‘to stick, stab, pierce with a sharp-pointed weapon, to prick with a small point’; in O.E. *stingan* “to prick with a small point” (of weapons, insects, plants, etc.). This verb is used in different senses in Contemporary American, but the primary (or the core) meaning, which contributed to metaphorization of abstract entities, remains and regulates the abstract nouns usage. Most native speakers would agree that this verb is associated not only with insects and jellyfish, but also with the long-pointed form as in Example 1.

(1) A sharp object stung me as I passed through the meadow.

A pointed object stung me as I backed into a cactus.

A tip from the broken glass shards stung me.

The needle stung me. A prickle stung me.

- Subject intransitive classifiers [a pointed object stabs (in/into/through smth.)], [a pointed object thrust through /toward smth.], [a pointed object jabs at smth./smb.], [a pointed object penetrates into smth.], [a pointed object sticks (in/into/from smth.)], [a pointed object points at smth.].
- Object transitive classifiers [smb. pricks a pointed object into smth.], [smb. punches a pointed object into smth.], [smb. stabs a pointed object in/into/somewhere], [smb. thrusts a pointed object in/inside/into/at smb./smth.]. [smb. jabs a pointed object at/into smth./smb.]. [a pointed object is thrust in/inside/into/at smb./smth.].
- Instrumental classifiers [to pierce smth / to be pierced with/by a pointed object], [to puncture smth. with a pointed object], [to prick/be pricked with/by a pointed object], [to punch smth. with a pointed object], [to stab smb. with a pointed object], [to thrust with a pointed object], [to stick smth./smb. with a pointed object], [spear/be speared with/by a pointed object], [to jab/be jabbed with a pointed object].
- Predicative classifiers [a pointed object is sharp], [a pointed object is poignant].
- Attributive classifiers [a sharp object], [a poignant object], [a pungent object].

The attributive collocation [a pungent object] merits its own discussion, as neither the corpus data nor the native speakers associate its meaning with SLPSh

of an entity. According to the OED *pungent* in the meaning ‘pricking, piercing, sharp-pointed’ substituted *poignant* in many of its senses in the 17th century (Example 2). This meaning of the adjective has been specified in the course of time as ‘the effect on the organs of smell or taste resembling that produced by pricking’ or ‘of the penetrating nature of smell, taste and sensation’. The direction of the broadening of its core meaning³ can be presented as follows: from SLPSh entities (Example 2) to substances with ‘smell or taste resembling that produced by pricking’ (Example 3) and then further to abstract entities such as speech acts (word, advice, language), emotions (shock, grief) and memories (Example 4). Apparently, both senses of the word are metaphorical extensions of the core meaning. This argument could be in favor of the classifying status of the collocation [pungent smth.].

- (2) Between three thornes pungent (1601) (OED);
was whilome used for a pungent spear (1606) (OED);
<...> cutting or pungent instruments (1750) (OED).
- (3) A strong, sharp taste of pepper greets my tongue, along with something creamy.
Risotto, I guess.
The mild flavor of the beans plays off the pesto’s pungent taste and adds a delicious creaminess.
it had <...> sharp bitter flavour;
You can also coat wiring with a spray that deters biters with its pungent flavor, such as Grannick’s Bitter Apple;
The flower gave off a sharp scent at night;
<...> a small creeping plant of a pungent scent;
The sharp smell of her perfume made me dizzy;
Beau recognized the sweet, pungent smell of something stronger than tobacco.
- (4) <...> perform oral sex. But U. S. District Judge Susan Webber Wright, in unusually sharp language, ruled Jones, “ has filed to demonstrate that she has a case; <...> little they know or have guessed about sex. Ma doesn’t use such pungent language with her daughters. They might remember her by those words alone; Removed from the transcript, these sources say, were Ambassador Glaspie’s sharp advice to Saddam not to use force in his dispute with Kuwait <...>; Congressman James Traficant of Ohio offered some of the most pungent advice imaginable, and believe me you don’t want to imagine it; I lost two very close friends of mine, and that was a real sharp shock because I realized if I carried on, I’d be next; and we followed, holding our noses. The bathroom was a pungent shock of Lysol; That was four years ago, but the memory was as sharp as ever; treated and painted their curved inner walls until the gas stink was just a pungent memory. In an instant, memory pierced him.

³ I thank an anonymous review for pointing out this issue.

- Substantive classifiers [the prick of a pointed object], [the punch of a pointed object], [a stab of/from/by a pointed object], [the thrust of a pointed object].

The collocation [a point of smth.] doesn't look reliable for diagnosing purposes as it has dubious acceptability. The noun *point* refers to the end of a pointed object as well as to a trace (a wound or a sign or a series of signs) a pointed object leaves on/in another object. Such signs tend to be used for measuring something that is viewed as a continuum (emotions, conditions, progress in studies, efficiency, etc.). However, it can be a feasible classifier in a wider context. In example 5, *point* being the collxeme of the noun *pain*, is described as thin, capable of sliding, and penetrating. Hence, pain is categorized as a pointed object. Conversely, in Example 6, the N slot of the construction [be frustrated to N] is associated with the limit or a level of a continuum. Thus, depression is categorized as a (relatively high) level of an unpleasant state of being, rather than a pointed entity. Example 7 demonstrates constructions in which the noun *point* is assigned the meaning 'the sense of smth.'. Neither (6) nor (7) can be treated as classifiers of the cryptotype.

- (5) the thin point of pain slid around her throat. It <pain> penetrated.
A sudden sharp point of pain at the back of her head <...>.
- (6) Last year, frustrated to the point of depression, he secretly recorded a pop album.
- (7) <...> this was the point of the dream;
What was the point of the reputation economy?

3.2. Core-periphery structure of RES LONGA

In languages with scarce morphology and lack of overt noun classes, nouns of abstract semantics in order to be communicated are likely to be attributed to one of the covert noun classes. Thus, cryptotype categorization is of non-taxonomic nature, which means that a noun tends to belong to more than one cryptotype but its proximity to the core of different classes is different. The cryptotype is structured on core-periphery basis in accordance with the *CRI* of nouns⁴.

The cryptotype "Res Longa" incorporates nouns of abstract semantics, whose class membership is evidentially revealed in communication when these nouns "choose" the classifying collocation(s) of the class.

⁴ *Cryptotype Radius Index (CRI)* indicates the proximity of a noun to the Core of Cryptotype in terms of core-periphery proximity. In a model a cryptotype on core-periphery basis, the formula to calculate the CRI is the following: $CRI = \frac{V^{cor}}{\sum_{cl-s}}$. V^{cor} is the number of cryptotype classifiers the noun has co-occurred with in the corpus, and \sum_{cl-s} stands for all classifiers of a certain cryptotype. The algorithm calculating the proximity of a noun to the core of cryptotype is described in (Boriskina 2010).

The restoration of “Res Longa” in English shows that out of 500 nouns of abstract dimension 124 nouns are attributed to this cryptotype. Below is the wordlist of some class members in decreasing sequence⁵:

- *light*
- *memory pain*
- *word question fear*
- *guilt image music reality*
- *anger attack force hope image reality relief sense sight song advice answer case change criticism disappointment evidence experience influence loss opposition problem voice work*
- *act awareness belief challenge comment condition contrast defense description desire dream equipment idea industry issue joy language love method mind pleasure pride quality recession style terror thought truth view etc.*

These nouns demonstrate different degree of linkage with the classifying collocations. According to the COCA data there are nouns with strong ties (Example 8), such as *pain* (433 occurrences), *evidence* (413), *contrast* (622), *voice* (182), *light* (277), *criticism* (122), *relief* (116), *mind* (107). The nouns which occur in the cryptotype collocations less than three times are those of with weak ties (Example 9).

- (8) A piercing stab of bright yellow pain;
after the murder of his sister, pain punched him in the gut;
The figure's deep voice pierces the darkness;
He wants you, said Tony, his voice piercing Pat's thoughts like a spear;
“Jerry” she said, her voice sticking in her throat <...>;
Whose voice and judgment penetrates to the depths of a person's soul;
“Step away from the dead” said Maggot, his voice as sharp as his weapon;
As light pierced the dust he found himself inside the fort;
the ferocious light stabbed her eyes;
this exaggeration was deliberate, but <...> evidence points in that direction;
Hard evidence that sticks out like rock, evidence that can break bones;
Frequently good arguments and good evidence will puncture them, <...>;
as if those extra few inches of elevation could help his sight pierce the fog;
more he believed it, until it seemed to him like a sharp point of truth;
And I was left alone with truth too poignant to deny;
In Alice's case the truth had penetrated farther and revealed to her that;
A sharp thought scratched his cheek;
I experienced a stab of doubt and thought;
Since pure thought can penetrate the universe's mysteries;

⁵ The decreasing sequence shows the proximity of a noun to the core of cryptotype. The whole wordlist is not included due to the limits on the paper format.

- (9) She remembered the stab of terror she had felt when Chase came <...>;
I only remember the sudden and sharp terror of that moment;
With its mixture of idealism and limited but sharp violence, this latest uprising
was more like the Ukrainian Orange Revolution than the Castro-style putsch.

4. Conclusion

The corpus-based study of cryptotypes of English nouns is aimed at systematization and formalization of separate ancient relicts of the naïve mapping of the world in language. RES LONGA is one of five cryptotypes reconstructed in English so far. The method demonstrated in the paper has several advantages. First, it can be applied to the study of covert noun classes in other languages and thus contribute to pursuing common grounds for the classification of nouns in typological perspective. Second, the results of the exploration of noun cryptotypes of English can have some implications for the theory of metaphor and Lexical Grammar of English. The data base of English cryptotypes (<http://ling.dentry.ru>) can be used in lexicography, for educational purposes, and in formulating and testing the hypotheses, related to a noun's potential collocability. Finally, studying cryptotypes can advance our understanding of the criteria necessary to computational representation of lexicon. We believe, that the adequately formalized description of cryptotypes can find application in computational modeling and text processing issues.

References

1. *Arutiunova N. D.* 1976. Sentence and its Sense.
2. *Boriskina O., Marchenko T.* 2010. An Algorithm for Analysis of Distribution of Abstract Nouns in Cryptotypes. Proceedings of the 2010 International Conference on Artificial Intelligence (ICAI 2010). July 12–15, 2010, II : 907–913.
3. *Dixon R. M. W.* 1968. Noun Classes. *Lingua*, 21 : 64–95.
4. *Fauconnier G.* 1997. Mappings in Thought and Language.
5. *Fillmore C. J.* 1985. Syntactic Intrusions and the Notion of Grammatical Construction. Proceedings of the Eleventh Annual Meeting of the Berkeley Linguistic Society : 35–55.
6. *Foundations of African Linguistics: Noun classes.* 1996.
7. *Gillon B.* 2005. Semantic Categorization. Handbook of Categorization in Cognitive Science.
8. *Givon T.* 1986. Prototypes: between Plato and Wittgenstein. Noun classes and categorization.
9. *Goldberg E.* 1996. Construction Grammar. Concise Encyclopedia of Syntactic Theories : 68–71.
10. *Grady J.* 1997. Foundations of Meaning: Primary Metaphors and Primary Scenes.
11. *Gries St., Stefanowitsch A.* 2004. Extending Collostructional Analysis: a Corpus-based Perspectives on Alternations. *International Journal of Corpus Linguistics*, 9(1) : 97–129.

12. *Hla Pe*. 1965. A Re-examination of Burmese Classifiers. *Lingua*, 15.
13. *Hunston S., Francis G.* 2000. Pattern Grammar: a Corpus-driven Approach to the Lexical Grammar of English.
14. *Johnson M.* 1987. The Body in the Mind: The Bodily Basis of Meaning Imagination and Reason.
15. *Katsnelson S. D.* 1972. Language Topology and Thinking.
16. *Kay P., Fillmore C. J.* 1999. Grammatical Constructions and Linguistic Generalizations: the 'What's X doing Y' Construction. *Language*, 75 (1) : 1–33.
17. *Koval' A. I.* 1996. Noun Classes in Pular-fulfulde. *Foundations of African Linguistics: Noun classes* : 92–220.
18. *Kövecses, Z.* 2002. Metaphor. A Practical Introduction.
19. *Kövecses, Z.* 2005. Metaphor in Culture. Universality and Variation.
20. *Kretov A. A., Titov V. T.* 2010. The Role of Covert Categories in Typological Study of Grammar of Roman Languages. *Proceedings of VSU. Series: Linguistics and Intercultural Communication*, 1 : 7–12.
21. *Lakoff G.* 1986. Classifiers as a Reflection of Mind. *Noun classes and categorization*.
22. *Lakoff G., Johnson, M.* 1980. Metaphors We Live By.
23. *Lakoff G.* 1987. Women, Fire and Dangerous Things: What Categories Reveal about the Mind.
24. *Lutskov A. D.* 1996. Noun Classes in Bantu and Loanwords. *Foundations of African Linguistics: Noun Classes* : 75–91.
25. *OED: Oxford English Dictionary on CD. Version 3.1.* 2009.
26. *Stefanovich A., Gries St.* 2003. Collocations: Investigating the Interaction of Words and Constructions. *International Journal of Corpus Linguistics*, 8(2): 209–243.
27. *Toporova I. N.* 1996. Noun Classes in Bantu Family. *Foundations of African Linguistics: Noun Classes* : 24–74.
28. *Uspenskii V. A.* 1997. Material Connotations of Abstract Nouns. *Semiotics and Informatics*, 35 : 146–152.
29. *Whorf B. L.* 1956. Language, Thought and Reality. *Selected Writings of Benjamin Lee*.