"Russian Associative Dictionary" as a Source of Information About Metalanguage Consciousness in Verbal Memory of Speakers

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ABSTRACT

The article is devoted to the study of mental lexicon of an "average" native Russian speaker. Special attention is paid to ways of organizing (fixing, storing and reproducing) metalanguage knowledge. As a working definition, metalanguage knowledge is understood as a set of user's ideas about the system and structure of the language, its functions, development, including dynamics of the norm and its communicative expediency in different communicative situations. The subject of the research within this approach is the associative-verbal network (ABC), which records both features of `speaker's verbal memory and rules of operating with metalanguage knowledge. Introduction of digital technologies in educational and scientific process has expanded possibilities of working with large data bodies, including experimentally obtained indications of speakers ' language consciousness.

The article uses materials presented in traditional version of the "Russian associative dictionary" and in online services WordAssociation.Ru, onlineslovo.ru, thesaurus.ru, it-claim.ru, wordassociation.net.

The analysis of two types of associative fields (with metalanguage stimulus and metalanguage reactions) allowed to identify the most standardized speech-thinking actions and typical strategies for memorizing metalanguage material, which further ensure its use not only in educational situations, but also in spontaneous speech activity if necessary. Research hypothesis: the ABC of an "average user" reflects, to some extent, facts of metalanguage reflection and language (speech) automatism, which is inevitable when using various types of mnemonics in the learning process. In this case, we can assume that the ABC analysis reveals a way to" package " metalanguage knowledge, and nuclear-peripheral status of tcorresponding reactions should correlate with stereotypical (typical) or non-standard (original) strategies for cognitive processing of information.

Using digital technologies in processing associative fields opens up wide opportunities for developing new tools for teaching Russian (first and / or second), taking into account the identified cognitive parameters of mastering educational information.

Keywords: *"metalanguage knowledge", "language ability", "psycholinguistics", " association-online"*

1. INTRODUCTION

Studying the structure of language ability, including mechanisms of perception, processing and storage of information has a long history of study [see, for example: Vygotsky 1982, Leontiev 1997, Karaulov 1993, Karaulov, Ruzhitsky 2015 and others]. Particular interest in the structure of language ability is the mental lexicon, since it is impossible to fully explain features of speech-thinking processes without understanding its structure. ""An associative dictionary ... presents language in its pre-speech readiness, revealing a secret, hidden from direct observation, way of "holding "the language in memory of its native speaker" [Karaulov 2002: 751].

2. SETTING THE GOAL

The postulate that "a word refers to consciousness as a small world to a large one, as a living cell to an organism, as an atom to the cosmos is important for us. It is the small world of consciousness. A meaningful word is a microcosm of human consciousness" [Vygotsky 1982: 318]. With this approach, the analysis of the associative-verbal network can give an idea of the nature of fixing metalanguage knowledge in it, stereotyped or individualized, reflexive or automated, and in general about associative potential of a language sign. Metalanguage knowledge is considered as a set of ideas about the language, its structure, development and norms of functioning in different spheres of communication.

What does a modern native speaker of the Russian language consciousness remember from school practice of learning their native language? Turning to the problem of the correlation of language and speech, in particular, to formation of grammar competence of a speaker, P. A. Lekant noted: "Presence of a human factor in language 'is an axiom, and, in our opinion, there is no need to emphasize it, as if contrasting it with the 'inhuman' one. It would be desirable to look at the human factor from the other side – from speech" [Lekant 2012: 297]. As it is known speech activity is characterized, on the one hand, by spontaneity and significant individuality, on the other hand – by automatism and universality.

3. ISSUES OF THE RESEARCH

What and in what form is stored in the associative-verbal network, which acts as a "way of representing language", as a "substrate of the speaker's language ability" [Karaulov 1993]? Using Russian associative dictionary (RAD) the authors note that an associative-verbal network in this dictionary demonstrates "a model of consciousness, which is a set of rules for operating with knowledge ... at the same time, RAD is a reflection of the unique modeling abilities of verbal memory of an "average" Russian belonging to a certain generation. RAD is nothing but a model of a sign language system that points to images of consciousness of communicants" [RAD, vol. I: 7].

Many Internet users have encountered surveys that reveal so-called "residual" knowledge in various subjects, including the Russian language, for example: "Do you know Russian? Write a few rules that you remember from your school course." The set of responses over the past years has been approximately the same:

Write «ZHI and SHI write with «i», CHA and SHCHA write with «a», CHU u SHCHU write with «u» //obMAKnuv ne proMOKnesh') // naden' odezhdu, oden' Nadezhdu // tsygan vstal na tsypochki i tsyknul na tsyplyonka tsyts! // Ivan Rodil devchuonku, velel Tashchit' peluonku (the order cases)», etc [https://otvet.mail.ru/question /44827552].

Such responses demonstrate stability of verbal associative connections used in the learning process in various "memorizers" - game mnemonics. As experience shows "language material, that is best remembered (automated), while studying them in school practice, game mnemonics were used" [Gridina, Konovalova 2014]. So, many people are familiar with rhyming from childhood to remember various orthoepical and spelling rules and exceptions to them:

«Posadila Fuokla v ogorode svuoklu // skol'ko ni droZHi – vsuo odno ZHu // uzh zamuzh nevterpuozh // chem koroche – nem dlinnee (noskov – chulok)» and others. All this confirms the idea that "human memory is nothing more than a kind of associative field, in which chains of associations of various types are intertwined" [Ruzhitsky 2011: 75]. According to the author's observations," ... associative series expressed verbally are most easily identified and recorded" [Ruzhitsky 2011: 75].

4. THE GOAL OF THE RESEARCH

Verbal memory, understood as "semantic memory, memory of thought in verbal form" [Rubinstein 1999: 291], plays a special role in cognitive processing and structuring metalanguage knowledge, because its conceptual components are usually not visualized, as they themselves (without special translation into another code) do not have figurative analogues. The exception is in individual representatives of the metalanguage, for example, conventional symbols of morphemic composition of a word or sentence structure schemes accepted in practice of school teaching Russian.

In the process of developing verbal-logical thinking, there is " ... intellectualization of all elementary cognitive functions. They are synthesized with the function of forming concepts: perception becomes a part of visual thinking, memorization becomes a meaningful logical process, and attention is active. Respectively, the place of nuclear components in subjective meaning is occupied by generalized concepts included in connection with other concepts" [Bubnova 2012: 69]. In this case, if we are discussing metalanguage consciousness, the analysis of ABC speakers can reveal the facts of language automatism, which was preceded by a long process of systematic teaching of the Russian language at school. This is the purpose of this study, which allows to detect manifestations of verbal memory in various types of reactions, explicating both individual mnestic strategies and mechanisms for automating language knowledge. Traditionally, automatism is associated with actions performed without active, purposeful participation of consciousness. If someone says that he writes (uses) words automatically, without knowing the rules, then, apparently, in most cases, we are talking about so-called "secondary" automatism, which is considerers to be "the result of lifetime formation of actions, their acquisition of skill properties" in pedagogical psychology. [Pedagogical ... slovar.cc/enc/ped.html].

5. METHODS OF THE RESEARCH

5.1. In our opinion, psycholinguistic experimental methods and techniques are productive for solving the set tasks: free and directed associative experiments and analysis of the associative field of the word modeled on the basis of obtained experimental data. It is known that when associated with a word-stimulus of a metalanguage nature, it is possible to appear in the associative field of the corresponding reflexive reactions that demonstrate connections created in the learning process and actualized in a specific speech act connections between elements of the language system and operational procedures for their gaining.

5.2. In order to verify the hypothesis of the study there have been processing techniques of statistical data of Russian Association dictionary (RAD) used, the authors of the research note that the ABC in this dictionary demonstrates "a model of consciousness, which is a set of

rules for operating knowledge ... at the same time, the RAD is a reflection of unique modeling abilities of verbal memory of an "average" Russian belonging to a certain generation. RAD is nothing more than a model of a sign language system that points to images of consciousness of communicants» [RAD, т. I: 7]. Digital technologies give opportunities you expand the search area for verbal associative relationships, for which the analysis involved a significant amount of data from online resources:

a) wordAssociation.Ru-online service for modeling associative fields via selecting formal and semantic associations;

b) onlineslovo.ru -a resource based on the idea of identifying inter-word relationships based on Russian literature texts. The authors-developers indicate that more than twenty million word associations were established as a result of processing 17 GB of data;

c) tesaurus.ru – a system of cognitive modeling and processing of experimental data, ABC represents more than 31,000 nodes and 122,000 associative verbal connections;

d) it-claim.ru – a project that includes a system of web services for searching and visualizing associative relationships, conducting online associative experiments, as well as a thesaurus of associative dictionaries, including RAD;

e) wordassociation.net -project of the thesaurus of word associations, created on the basis of algorithm-driven procedures for establishing formal and semantic associations, as well as their various combinations.

Using these resources significantly complements materials of traditional associative dictionaries and makes the experimental sample more representative.

5.3. The method of dichotomous classification according to the nature of stimuli and reactions in simulated associative fields was used to interpret associative fields presented in the sources mentioned above. Thus, first of all, metalanguage knowledge expressed by explicated associates was taken into account as initial grounds, i.e. only reactions of the terminological plan are analyzed.

There are two possible options: a) associates which belong to the lexicon of metalanguage sphere, b) a stimulus which is not a linguistic term, and a metalanguage. reaction. Secondly, the basis for inclusion in the sphere of interpretation was implicit (deductive) metalanguage knowledge, when both reactions and stimuli are not actually terms from the sphere of linguistics, but indirectly their appearance in the associative pair indicates the presence of systemic connections of verbal units, which makes it possible to deduce metalanguage implicatures.

6. RESULTS OF THE RESEARCH

Here are some of the most significant results of Association of the first type (metalanguage knowledge is explicit):

6.1. Syntax

Sentence → complex 5, interrogative 3, declarative 2, in the text, grammatical construction, from words, non-extended, subject, simple, extended, predicate, word, word combination, line, text, dot, member (1: 502)

Despite the ambiguity of the stimulus, we note the nuclear status of metalanguage reaction *complex*. In addition, metalanguage reactions are represented in zones of close, remote and extreme periphery, i.e. the entire associative field has a grammatical associative dominant, along with those that are modeled according to the first lexical-semantic variant: family and household (ruki I serdtsa 3, zamyzh 3, svad'ba 2, brachnoye) and socio-political (del'noye 2, vlast', o sotrudnichestve, deputata, kommercheskoye). This fact may prove the relevance of syntagmatic connections of the terminological plan complex sentence, interrogative sentence, declarative sentence, etc.

An even more striking example of this kind of sssociates is found in wordAssociation.Ru:

Exclamation - sign, intonation, sentences, period, interrogative, imperative, rhetorical, arrange, emphasize, direct speech, writing.

There are no indexes of frequency of reactions, but their very place in the network of word associations demonstrates undoubted relevance of metalanguage knowledge in the ABC of the "average user". Note that even the form of the stimulus masculine singular did not prevent from appearance of reactions-nouns singular of feminine, neuter which confirms stability of metalanguage knowledge.

6.2. Morphology

According to the data of the associative dictionaries we have studied, the ABC of a native Russian speaker presents, although with varying degrees of completeness, the entire set of parts of speech and their grammatical features, but metalanguage reactions are usually marked in the peripheral zones of associative fields. This is especially noticeable in polysemantic stimuli, when a non-terminological value is more relevant for respondents, for example: a conjunction, a particle, or a name.

However, in the latter case, a predictably high frequency index is marked in the *imya* associative bundle (and in both cases: S and R) - noun (also S and R), which can be qualified as the most stable syntagmatic connection, which manifests speech automatism formed in the learning process.

As for certain aspects of grammar semantics, we will show them on reactions that reflect knowledge about lexical and grammatical categories of adjectives:

Relative - adjective (1: 423); qualitative (wordassociation.net), adjective (onlineslovo.ru).

Possessive - adjective, pronoun (onlineslovo.ru), category, relative, quality, belonging, used, to incline, change, role, class, quality, yours (wordassociation.net).

Qualitative - adverb, adjective (wordassociation.net).

It can be noted that only in the field "Possessive" reactions represent an entire set of lexical and grammatical categories of adjectives, in other cases associative paradigm is lacunary and can be collected from reactions scattered across several associative fields. This is fully explained by the fact that the *relative* and *qualitative* stimuli are multi-valued, in contrast to *possessive* stimulus. However, it is impossible to deny existence of explicit metalanguage connections in this group of associates, which generally confirms the idea of Yu. N. Karaulov on the dissipative representation of grammar paradigms in associative network morphology [Karaulov 1993].

To study "the psychological reality of the meaning of items that make up close (adjacent) semantic spaces, we can use methods of indirect research of semantics, the method of establishing semantic distance, etc." [Petrenko 1997: 94], that can be a subject of a separate description.

Analysis of associative-verbal network can give an idea of the nature of fixing metalanguage knowledge in it, stereotyped or individualized, reflexive or automated, and in general about the associative potential of the language sign. Compare definition of the associative potential of a word as "the totality of formal and semantic reactions that a word can cause in the minds of native speakers-taking into account the dynamics of their actualization in the discursive practices of society and specific individuals … In this sense, the structure of the associative potential of a word congruent with the structure of associative fields, in which core and periphery are not hard-coded, reflecting not only a relatively constant associative stereotypes of verbal signs, but its multi-variable projection" [Gridina 2015: 149].

7. RESULTS OF THE RESEACH

Let's present the results of the representation of metalanguage reactions of the second type (implicit metalanguage knowledge) in the ABC.

7.1. Reactions that reflect ideas about spelling rules and their exceptions.

Compare: in the root of the word after TS is written "I" (tsifra, tsirk, tsirkul). Exceptions are the following: tsygan, na tsypochkakh, tsyknut', tsupluonok and all derivatives of them. It is in this sequence, played out in mnemonics as a complete joke expression, that these exceptions are offered to children at lessons of Russian for memorization, for example: Tsygan, na tsypochkakh tsyknul tsyplyonku, "Tsyts!"Associative fields with this stimuli are presented in the table.

Table 1 Associative fields of words that are exceptions to the spelling rule for writing vowels I-Y after TS

Stimulus	Metalanguage reactioms	Explanatory notes
Tsygan	*Tsykat', tsypochki*	Associative fields are modeled based on all the above mentioned data from associative dictionaries and online sources. The latter stimulus is represented in different sources by different types of correlates. *The word form na tsypochkakh does not occur as a stimulus, but the original non-complex word form of tsypochki is far from the most frequent, besides in this version it is a polysemant.
Tsypluonok	*Tsykat'*	
Na tsypochkakh*	---	
Tsyts	*Tsypa, tsyk*	
Tsykat' // tsyknut'	*Tsygan, tsyk, tsuts, tsypluonok, Tsypochki, tsypochka, na tsypochkakh*	

Almost all of metalinguistic reactions are in the area of close, distant and extreme periphery, except the pair of tsukat' (tsyknut) – tsygan. The nuclear status of a metalanguage response is probably due to the lower frequency of the stimulus compared to previous members of the spelling complex. This assumption is also confirmed by the fact that it is the associative field of a given stimulus that "collects" all metalanguage responses expected as a reflexive response to a once-studied rule and exceptions to it. There is also a predominance of paradigmatic reactions: tsyk / / tsyts, tsypluonok / / tsypochka / tsypochki, which can be considered as a manifestation of relationship of synonymy (including psychological, in case of similars), although very conditionally. We can agree with B. Yu. Norman, who notes that "language does not like absolute synonyms, and if we consider some forms of expression of thought to be equal options, then most often this indicates only that some subtleties of word-usage fall out of our field of view" [Norman 1994: 6-7].

In general, these examples demonstrate different power of verbal connections in a composition of associative fields, which is confirmed by their corresponding status in the nuclear-peripheral organization of the field, therefore, the relevance of metalanguage knowledge is different.

7.2. According to our observations, spelling reflexes of consciousness show greater automatism than grammatical ones. The psycholinguistic approach to the study of verbal memory, which supposes experimental verification of relevance of metalanguage knowledge, draws researchers' attaention to such aspects of the phenomenon as automatism vs reflection, universal speech-thinking actions vs individual strategies for cognitive processing of language material, algorithmization of mnesis procedures vs creative mnemonics, etc.

Complex interpretation of the reflexive component of language consciousness based on the data of associative dictionaries and academic digital online resources can provide tools for developing methods of teaching Russian (both native and non-native), taking into account the mechanisms of perception and production of information.

REFERENCES

[1] Bubnova, I. A. (2012), "Individual "image of the world" as an object of psycholinguistic analysis", *Language, consciousness, communication* ["Individual'nyy «obraz mira» kak ob"yekt psikholingvisticheskogo analiza" YAzyk, soznaniye, kommunikatsiya: Sb. Statey], MAKS Press, Moscow, Russia, Vol. 45, pp. 57 – 69.

[2] Vygotskij, L. S. (1982), Thinking and speech [*Myshlenie i rech'*]. Collected works in 8 vols, T 2, Moscow, Russia.

[3] Gridina, T. A. (2015), "The associative potential of words as the basis of linguistic and creative activity: experimental data", Questions of psycholinguistics [Assotsiativnyy potentsial slov kak osnova yazykovoy i tvorcheskoy deyatel'nosti: eksperimental'nyye dannyye, Voprosy psikholingvistiki], v. 25, pp. 148-157.

[4] Karaulov, Yu.N. (1993), Associative grammar of the Russian language [*Associativnaya grammatika russkogo yazyka*], Nauka, Moscow, Russia.

[5] Karaulov, Yu.N., Cherkasova, G. A., Ufimceva, N. V., Sorokin, Yu. A., Tarasov, E. F. (2002), "Russian associative dictionary as a new linguistic source and tool for analyzing language ability" ["Russkij associativnyj slovar' kak novyj lingvisticheskij istochnik i instrument analiza yazykovoj sposobnosti" *Russkij associativnyj slovar'. v. 1, Ot stimula k reakcii,*], Moscow, Russia, pp. 750-782.

[6] Karaulov, Yu.N., Ruzhitskii, I.V. (2015), "From the dictionary of the writer's language to the knowledge of his world: some basic concepts in the work of F. M. Dostoevsky" , Cognitive linguistics ["Ot slovarya yazyka pisatelya k poznaniyu ego mira: o nekotorykh bazovykh kontseptakh v tvorchestve F.M. Dostoevskogo", *Voprosy kognitivnoi lingvistiki*], No 4 (45), pp. 16-22.

[7] Lekant, P.A. (2012), "The rational and emotional potential of the Russian grammar system", *[Ratsional'nyy i emotsional'nyy potentsial russkoy grammaticheskoy sistemy],* MSRU, Moscow, Russia.

[8] Leont'ev, A. A. (1997), Basics of psycholinguistics [*Osnovy psiholingvistiki*], Smysl, Moscow, Russia.

[9] Norman, B. Yu. (1994), Speaker grammar [*Grammatika govoryashchego*], SpbSU, SPb, Russia.

[10] Norman B.Yu. (2002), "The Russian Pronoun *My*: its Internal Dramatics" Russian Linguistics, v. 26, No 2, pp. 217-234.

[11] Petrenko, V. F. (1997), The Basics of Psychosemantics [*Osnovy psihosemantiki*], Smolensk, Russia.

[12] Karaulov, Yu. N., Cherkasova, G. A., Ufimceva, N. V., Sorokin, Yu. A., Tarasov, E. F. (ed.), (2002), Russian associative dictionary. In 2 t. T. 1. From stimulus to reaction [*Russkij associativnyj slovar'. V 2 t. T. 1. Ot stimula k reakcii*], AST: Astrel, Moscow, Russia.

[13] Rubinshtejn, S. L. (1999), Fundamentals of General Psychology [*Osnovy obshchej psihologii*], SpbSU, SPb, Russia.

[14] Ruzhickij, I. V. (2011), "The chain of associations as a unit of perception (Russia and Russians in the linguistic consciousness of speakers of other cultures)" [транслитерация названия статьи в кавычках], *Vestnik CMO MGU*, *Kul'turologiya,* Vo l, No 3, pp.75-82.