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The Associative Dictionary as a Model of the Linguistic Picture of the World

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Abstract

This paper presents the results of the analysis and synthesis of materials of the large-scale free associative experiments with participation of the native Russian speakers. It contains data on both direct (from stimulus to response) and inverse (from response to stimulus) links between words. The methodology of compiling the Associative Thesauri of Russian and English languages based on a psychological perception of consciousness units linked in the human psyche is described.

Keywords: Psycholinguistics; language consciousness; image of the world; associative experiment; Russian-speaking people

1. Introduction

Since its inception, Russian psycholinguistics has had its own unique character as it is based on the achievements of the Russian school of psychology - on the cultural-historical psychology of L. S. Vygotsky and activity theory of A. N. Leontiev. This is what has determined the range of problems considered by modern researchers in Russia, namely, Russian psycholinguistics, or rather Moscow psycholinguistic school that has been studying and modelling the trivial (common, ordinary) language consciousness of native Russian speakers for about forty years.

2. Methodology

2.1. The concept of “language consciousness”

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The concept of “language consciousness” (Tarasov, 1996) used for studying, or modelling the linguistic picture of the world is synonymous with the psychological concept of “the image of the world”. This for the first time has allowed us to construct a real model of the linguistic picture of the world of a naïve language speaker (member of any culture). The model corresponds to the systemic holistic principle and allows us to study the content of language consciousness of various naïve language speakers and culture members.

The theoretical basis for the research in this field is an idea substantiated in psychology that phenomena of reality perceived by a person in activity and communication are reflected in his/her consciousness in such a way that this reflection fixes conditional and spatial connections of phenomena and emotions caused by the perception of these phenomena. In other words, the associative thesaurus is a model of human consciousness. This sign model is different in the quality of presenting images of consciousness from other object representations of images. If the ideal image of an object initially exists (when considering activity from time perspective) in a form of activity and then in a form of activity product, i.e., objectified, the word does not objectify an image of consciousness but only points to it by the sign body. By such a model I mean an associative verbal network (i.e., partially connected directed graph with weighted frequency) based on the results of large-scale associative experiments with the Russian-speaking respondents.

2.2. A model of linguistic picture of the world

Why can the associative verbal network constructed in this way be regarded as a model of linguistic picture of the world of a native speaker / culture bearer?

Firstly, the model describes the experience of native speakers as creators and recipients of texts and reflects the structure of “rational human communication” (A. F. Losev). It also reflects the entire previous verbal and nonverbal experience of native speakers.

Secondly, the model has the holistic character related to the linguistic picture of the world of a native speaker because it is based on the significance/importance of one or other elements in their hierarchy. Analyzing this aspect of the model, we introduce the concept “the core of language consciousness,” where we single out the central segment of the core and indicate the rank of every element.

Thirdly, an associative verbal network can be constructed based on the material of any language if sufficient data collected through associative experiments are available.

Fourthly, an associative verbal network is not artificially constructed by a linguist. It is derived from the material where it is implicitly contained and thus it reflects the structure. The structure objectively belongs to linguistic picture of the world of a naïve (ordinary) language speaker and to the culture as a system of consciousness because the world is represented to each person through a system of meanings which determines the perception of the real world. Every culture has the elements of experience, which are not always unique and repeated in many cultures. It is the system of organizing the elements of experience that is unique.

The organizing point for such a model as a whole and for each of its individual elements is the principle of significance by Ferdinand de Saussure. Each element of an associative verbal network has meaning and significance simultaneously. It is evidenced by the fact that it is included in the system and its significance (value) is determined on the basis of the system as a whole.

In modern linguistics the importance of studying the holistic linguistic picture of the world, according to V. M. Alpatov, follows from the fact that “if comparison of languages at the stage of their development is typology, comparison of languages at the stage of perfection is primarily comparison of their world view, pictures of the world, created with the help of languages” (Alpatov, 2001: 66). It was clearly pointed out by Wilhelm von Humboldt who wrote: “Thanks to the mutual dependence of thought and expression on each other, it becomes apparent that languages are not only means to represent already revealed truth, but rather to detect hitherto hidden truth. Their difference is not the difference of sounds and signs, but the difference of the pictures of the world. The fact bears the reason and the ultimate sense of any language learning” (19-20). Humboldt W. won. Ueber das vergleichende Sprachstugium in Beziehung auf die verschiedenen Epochen de4r Sprachentwicklung (1820)//Wilhelm won Humboldt. Werke in funf Banden. Hrsg. Von Andreas Flitner und Klaus Geil. Band 3. Darmstadt: Wissenschaftliche
3. Associative experiment

3.1. Method

Why was it free associative experiment that was chosen as a method of obtaining material to construct a model of linguistic picture of the world of a native speaker (Russian or any other)? The fact is that traditional linguistic dictionaries, which also, in a sense, can be seen as a reflection of linguistic picture of the world of a native speaker, are usually the result of a linguist’s reflection on his/her language consciousness. As a result, the linguist, according to R. M. Frumkina, “(not without reason) speculates that the inner worlds of speakers are similar to his own. On the basis of it the linguist < ... > produces the act of introjection, absolutely fundamental for further generalizations: he endows other speakers with the “language consciousness” not too different from his own” (Frumkina, 1983:65). However, the “naïve” linguistic picture of the world is often different very much from the results obtained by linguists. We find an interesting confirmation of the fact in the field of legal linguistics, in particular, in the work of A. Ya. Dudareva (Dudareva, electronic resource) devoted to the examination of similarities of trademarks whose similarity results in their confusion (e.g., trademarks “Nivea” and “Livia”). Linguistic examination based on the comparison of the trademarks in phonetic, graphic and semantic parameters has revealed that they are different trademarks. But the results of associative experiments with participation of naïve (ordinary) native speakers allow for . . . “establishing whether there is a similarity between them to the point of confusion and if the case of similarity is determined, the experiments allow revealing which is the prototype of the trademark, and which is the secondary trademark” (Ibid).

3.2. Subjects

For the Russian language, the graph has 103,000 thousand various points, i.e., various words belonging to the network. The number of experiment participants, i.e., respondents who provided us with the data on the fragments of their language consciousness equals to 6, 600 people. They are Russian-speaking students of different specialties aged from 17 to 25, living in different regions of the Russian Federation. The experimental part of the research was conducted at the end of the 20th century. (See the link http://www.tesaurus.ru/dict/dict.php. Here you can find the electronic version of the Russian associative dictionary (Karaulov at al., 2002] and learn the ways of its analysis). In 2008, we began to collect experimental data for another Russian associative dictionary. The number of respondents equals to 15,000. They are also Russian-speaking people of the same age and social background.

3.3. Data collection for creation of the Russian Associative Dictionary (RAD)

The ability to create an associative dictionary of any language is based on a psychological perception of consciousness units linked in the human psyche. The units of consciousness may appear as images of perception, ideas, concepts, emotions, feelings. It is essential for compiling an associative dictionary that associative responses obtained in the experiment are denoted with a word.

From the perspective of psycholinguistic technology, an associative dictionary is the result of the analysis and synthesis of materials of free associative experiments. It contains data on both direct (from stimulus to response) and inverse (from response to stimulus) links between words. They are in both cases accompanied by quantitative indicators that allow estimating the strength of these bonds. The use of special programs for computer analysis of materials from an associative dictionary reveals the most probable direct and inverse relationship between words, as
well as the strength of the links. They also allow estimating the proximity of words meaning, regarded as close as possible if they are connected with one and the same set of words and the strength of these bonds are equal.

The main tool for collecting material to construct an associative dictionary is a widely used in psychology and psycholinguistics method of free associative experiment with the registration of the first response. The materials collected with the help of the method provide the insight into functioning of language consciousness and constructing the speech utterance usually not perceived by native speakers and not detected by other methods of investigation. Free associative experiments provide us with the information concerning the psychological equivalents of "semantic fields" and reveal semantic links between words, which objectively exist in the mind of a native speaker. It allows considering the associative experiment meaningful and interesting not only for a psychologist or a psycholinguist, but also for the linguist engaged in semantics.

The associative thesaurus of the modern Russian language better known as Russian Associative Dictionary (RAD 1) is compiled on the results of the large-scale associative experiments with participation of the native Russian speakers, conducted from 1986 to 1996. The responses obtained at the first stage of the survey (1986-1991) were used as stimuli at the following stage (1992-1994), and the new words among the responses at the second stage were included in the list of stimuli for the third phase of the experiment (1994-1996). It should be noted that beginning with the third stage the associative thesaurus network "tends" to the circuit: the respondents more often respond with words that were stimuli at the previous stages of the experiment. The thesaurus network closes and allows describing the average lexicon of native speakers and their image of the world. The associative thesaurus of the type is fundamentally different from other materials of associative experiments. As has been said, it includes data on both direct (from stimulus to response) and inverse (from response to stimulus) links between words. They are in both cases accompanied by quantitative indicators that allow estimating the strength of these bonds.

Conceived in 1986 following the model of the Associative Thesaurus of English (Kiss G., Armstrong C., & Milroy R. The Associative Thesaurus of English. Edinburg, 1972; The Edinburg Associative Thesaurus (http://www.eat.rl.ac.uk/), the Russian dictionary already in the process of preliminary discussions tended to become different.

In the Associative Thesaurus by G. Kiss 8400 words were used. They belong to different parts of speech and their grammatical forms are also different. In total, according to A.A. Zalevskaya, “the Associative Thesaurus contains 55837 entries” (Zalevskaja, 1983:31).

To conduct the first stage of the associative experiment Kiss selected 1,000 stimuli including 200 words from Palermo and Jenkins’s list [Palermo & Jenkins, 1964] and 800 words from the first thousand of the most frequent words in Thordike and Lorge’s dictionary (1944) and Ogden’s basic English (Ogden, 1954).

The original list of stimuli for the Associative Thesaurus of Modern Russian was divided into the basic list and the additional list. The basic list contained 700 words from the first thousand of the most frequent words in Russian, namely 298 nouns, 212 verbs, 114 adjectives, 31 pronouns, 16 numerals, 24 adverbs, 7 particles, 6 conjunctions, 10 prepositions. The additional list included 1) nouns and verbs from the basic list in their paradigm forms and 2) several rows of ideographic (e.g., обыденный, повседневный, будничный) and stylistic synonyms (e.g., имущество, добро, пожитки, вещи, скарб, манатки).

Each dictionary entry in the direct associative dictionary (from stimulus to response) comprises all the responses to a given word in descending order of frequency. The “black name”, or the name of a dictionary entry is a stimulus, responses to the stimulus go in descending order of frequency pointed out after a response if only it has such frequency in respondents’ answers (ЧЕЛОВЕК – животное 23; умный 21; хороший 20; обезьяна 19, etc.) or at the end of a group of responses with the same frequency, responses within the group are placed in alphabetical order (ЧЕЛОВЕК – большой, гордый, машина 5; враг, высокий, глупый, дурак, индивид, собаке друг 4, etc.). A dictionary entry ends with figures: ЧЕЛОВЕК… 569+244+30+163. The first figure points out the count of all responses to the stimulus, the second – the number of different answers, the third – the number of blank responses, the fourth – the number of single responses, i.e., the number of responses with a frequency of 1.

Besides the informative significance of each figure, their correlation characterizes an entry as a whole, namely as a natural-linguistic field which has not only a structurally lexicographic but also an ontological status: the associative field is not only a fragment of human verbal memory (knowledge), a fragment of semantic and grammatical relations but a fragment of the ethnic worldview.
The reverse dictionary (from response to stimulus) is compiled in a different way. Here the entry is a response. The “black word” or the name of a dictionary entry is a response, a respondent’s answer to a stimulus. On the right side of the entry there are stimuli which generate this response. Figures after the stimulus on the right side point out the frequency of this response, i.e., the number of respondents who answered to this stimulus by this word. For example, ЧЕЛОВЕК – молодой 157; свободный 137; умный 108 … means that in the associative entry of the stimulus МОЛОДОЙ the form человек as a response occurs 157 times, in the entry СВОБОДНЫЙ – 137 times, and in the entry УМНЫЙ – 108 times. Final figures at the end of an entry provide the following information: the first figure points out the total occurrence of a given word form or a word combination as a response to all the stimuli, the second – the count of stimuli which produced this response or, in other words, the number of dictionary entries (in the direct dictionary) where this reaction is found.

Thus, the content of an entry in the reverse dictionary (e.g. ВЫБОР – свободный 8; маленький, начало, путь, умный 1; 12+5) can be understood in the following way: the word ВЫБОР as a response to the stimulus СВОБОДНЫЙ is provided by eight respondents and to the stimulus МАЛЕНЬКИЙ, НАЧАЛО, ПУТЬ, УМНЫЙ by one respondent. Consequently, the total frequency of the response ВЫБОР is 12 (8+1+1+1+1=12), and the response is found in associative fields of 5 stimuli.

If the response to all the stimuli is provided once, the figure “1” and final figures “1+1” are omitted (e.g. ВЯЛОСТЬ – утро). If the response is generated by only one stimulus with a frequency more than 1, only the total frequency is pointed out after the stimulus (e.g. ГЕНИЮ – памятник 2; ГЕРОИНЯ – мать 5).

Experimental data presented in the form of an associative dictionary (the direct and the reverse dictionaries) not only allows studying differences and similarities between the contents of images in a bearer of a certain culture’s consciousness but also reveals the systemic character of the linguistic picture of the world in this culture, i.e., the value (in F. Saussure’s terms) of each element in this picture.

First of all, the data from the associative dictionary are useful because they are the result of a large-scale experiment, not a selective one, which makes them a viable source of linguistic and psycholinguistic information.

Secondly, it is important that these data can be considered as the “associative profile” of images of consciousness (lexical units) specific to a certain language and culture. If we need to find an objective method which could reveal culture-specific characteristics of vocabulary units, secondary semantic links which the word possesses and which are not relevant to generalization (but not to communication), semantic “overtones”, undoubtedly, this method is an associative experiment, and the source of the data is an associative dictionary.

Thirdly, associative norms should be seen as markers of the underlying mechanisms of verbal and non-verbal behavior (speech production).

Of special significance is one essential difference between associative and traditional dictionaries: while dictionaries compiled by linguists are to a great extent a description of “individual language consciousness”, the associative dictionaries are one of the possible ways of describing native speakers’ “collective average” language consciousness. Therefore, the associative dictionary reflects the real average language consciousness more adequately.

4. Discussion

The associative thesaurus is a model of consciousness which represents a set of rules for operating cultural knowledge (verbal and non-verbal meanings). As a result, the dictionary user develops an idea of the worldview in a certain culture. At the same time, the associative thesaurus displays unique modeling capabilities of the verbal memory in an average native speaker who belongs to a certain generation. The associative thesaurus is a model of language sign system which points to communicants’ images of consciousness, images that are sufficient for mutual understanding.

The organizing point for such a model as a whole and for each of its individual elements is the principle of importance (value) by Ferdinand de Saussure. Each element of the associative verbal network has both the meaning and importance (value) simultaneously. It is evidenced by the fact that it is included in the system and its importance (value) is determined on the basis of the system as a whole. For the first time it becomes possible for a linguist to observe the interaction and interdependence of meaning and importance (value) both within the entire associative
verbal network and in a separate associative field and to see their changes that reflect the changes taking place in the society. Large arrays of associative data allow the linguist to “see” both the meaning by which we express the whole totality of associative responses to the stimulus, and the importance (value) of the stimulus as its position in the verbal associative network according to the reverse dictionary. It is determined according to Saussure by “the social life” or by the system of values typical of the given culture.

Here are several examples of changes we have observed as a result of the longitudinal comparison between the two large-scale associative experiments.

The associative field of the stimulus I in the Russian Associative Dictionary (RAD, 2002; the data were collected in 1988-1998) includes the following associative responses (all of them are given except those with a frequency of only 1 associative response):

You 77; human 62; student 21; I 18; we 17; personality, he 16; myself 13; love, student-girl, it’s me 11; and you, learn 8; I go, good 7; woman 6; girl, fool, live, who, not me, no one, write, myself, swine, tired, good, want 4; know, clever cookie, teacher 3; big, question, the universe, the genius, think, wait, engineer, and she is a cadet, Luda, May, can, well done, do not like, something, one, they, optimist, came, the most, Sveta, family, sit, look, this, went, a good man, selfish 2.

The associative field of the same stimulus I (Electronic Database for the European part of the Russian Federation, RAD 2; the data were collected in 2008-2011):

Human 59; personality 33; girl, you 13; student 10; student-girl, I 7; like, he, good 6; good 5; the best, we, the most 4; the best, well done, clever 3; God, letter, paratrooper, kind, friend, am, live, life, and that’s all, individuality, king, beauty, cool, I, who, cadet, best of all, favourite, Mammy, have come, myself, juice, such, clever 2.

As we can see, the associative meaning of the word I has changed, and it is first of all the change in the significance of some of its elements, for example, human, personality and you and others. You has moved from the first position to the fourth one losing in the frequency (from 77 in the RAD to 13 in the RAD 2), but the response personality raised its rank moving up from the sixth to the second position and doubled its frequency (from 16 to 33).

Let us see whether these changes in the structure of the associative meaning of the stimulus I are connected with its position in the core of language consciousness of the Russian-speaking people. Let us consider the part of the core we call “Personalities”. In Table 1 below, the figure before the word shows its rank in the core of the language consciousness, while the figure after the word shows the amount of various words it is connected to in the entire associative verbal network.

<table>
<thead>
<tr>
<th>Russian (RAD)</th>
<th>Russian (RAD 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>man 1404</td>
</tr>
<tr>
<td>9.5</td>
<td>friend 565</td>
</tr>
<tr>
<td>9.5</td>
<td>fool 565</td>
</tr>
<tr>
<td>12.5</td>
<td>man 438</td>
</tr>
<tr>
<td>19</td>
<td>child 413</td>
</tr>
<tr>
<td>27</td>
<td>fellow 368</td>
</tr>
<tr>
<td>36</td>
<td>I 347</td>
</tr>
<tr>
<td>42</td>
<td>woman 321</td>
</tr>
<tr>
<td>46.6</td>
<td>boy 308</td>
</tr>
<tr>
<td>49</td>
<td>girl 302</td>
</tr>
<tr>
<td>50</td>
<td>guy 301</td>
</tr>
<tr>
<td>62</td>
<td>husband 272</td>
</tr>
<tr>
<td>71.5</td>
<td>he 258</td>
</tr>
</tbody>
</table>
The changes in the structure of the associative field of the stimulus I are not sporadic. They are the reflection of the changes in the structure of the core of language consciousness of Russian-speaking people over the past 10-12 years. The rank of I has changed from 36th in the RAD to 10th in the RAD 2; therefore, its significance has increased and this is likely to be due to the increase of the value of the personality in the linguistic picture of the world of the modern Russian. These changes do not depend on the language; they are just registered with the help of the language.

Let us see another example. The associative field of the stimulus DOCTOR is represented in the graph in Figure 1. As we can see, two large fragments can be singled out in the associative field. They correspond to the two specific meanings: 1) doctor of medicine, associating with words like белый халат (belyi khalat “white coat”), больница (bol’nitsa “hospital”), 2) a person engaged in science and scientific research, its specific branches and its specific attributes, associating with words like наука (nauka “science”, “study”). Taking into consideration the frequency of responses, we can determine the significance of a particular meaning within the associative field for a native speaker.

These examples demonstrate that it is the systemic holistic principle that is operational for the analysis of a linguistic picture of the world, because the actual significance and importance (value) can be detected only in relation to the system as a whole.

The studies demonstrate (Ufimtseva, 2002) that such concepts as person, home, life, well, friend, no are central to the Russian language consciousness, at least, since the 1960s.

Data of early ontogenesis also show that person, home, well, big, talk and the negator not (in RAD it is labeled as no) are the semantic dominants of the Russian language personality... these dominants are in a child’s semantic system since three years of age” (Sokolova, 1998:17). In six years old friend is added to them.
5. Conclusion

Thus, the data from large-scale associative experiments allow to reveal:

- common and specific characteristics which are present in a bearer of a certain culture’s consciousness and subconsciously determine his/her behavior, estimations and attitude to the world;
- the role of the first (native) language in forming the worldview of the native culture;
- the influence of culture on its bearer’s language consciousness.

Moreover, explorations of language consciousness based on the data of the associative experiment make it possible to reveal both the systemic character of the content in a consciousness image designated by a word in a certain culture and the systemic character of the language consciousness of culture bearers as a whole, and demonstrate the originality and uniqueness of the worldview in each culture.

Investigations carried out in the Moscow Psycholinguistic School in recent years based on the Russian Associative Dictionary (Karaulov et al., 2002) have demonstrated that the associative thesaurus constitutes a model of human consciousness which represents a set of rules for operating knowledge of a certain culture (verbal and non-verbal meanings) and this knowledge reflects the language worldview of the culture.

Presented as a multidimensional associative network, the Associative Thesaurus of Modern Russian provides a conclusive picture of the organization and functioning of the language consciousness of an average Russian speaker of a certain generation and thus of his/her language worldview. The Associative Thesaurus of Modern Russian introduces a new object of linguistic, psychological, ethno- and socio-psychological analysis that allows taking a fresh look at the relationship between language and culture and the role of language in the formation of ethnic mentality.

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References


