Free Associative Experiment as a Promising Way to Research the Concept in Modern Linguistics

Irina Grigoryeva[1], Ainash Ahmetzhanova[2], Valentine Lee[3], Hafizdin Muhamadiev[4], Ainakul Tumanova[5]

Abstract

The article is devoted to the problem of concept study using the experimental method. This paper provides the brief review of such concepts as: conceptual analysis, stages of conceptual analysis, free association experiment, and association. In this article we attempt to analyze the results of free association experiment in the study of the concept "heath". The direct association of the respondents was used as factual material to illustrate the main provisions. Due to experimental data we may observe mental society stereotypes and reveal its cultural memory, modern value system, verbalized in the direct associations. The following methods are used in the research: questionnaire, descriptive method, generalization, systematization, observation, quantitative and statistic method, etc.

Keywords: free association experiment, conceptual analysis, stages of conceptual analysis, concept, association, stimulus word.

[1]Without Rank, Master's degree, PhD doctoral, Department of Russian Philology and World Literature, Al-Farabi Kazakh National University, 005040, the Republic of Kazakhstan, Almaty, Al-Farabi Ave., 71, grigorjevai@mail.ru, +77003997846, +77015718610

[2]Without Rank, Candidate of the Philology, Acting Associate Professor, Department of Russian Philology and World Literature, Al-Farabi Kazakh National University, 005040, the Republic of Kazakhstan, Almaty, Al-Farabi Ave., 71, Ahmetzhanova.aynash@mail.ru, +77013357206

[3]Associate Professor, Doctor of the Philology, Professor, Department of Russian Philology and World Literature, Al-Farabi Kazakh National University, 005040, the Republic of Kazakhstan, Almaty, Al-Farabi Ave., 71, li-vs@mail.ru, +77773876600

[4]Associate Professor, Candidate of the Philology, Department of Russian Philology and World Literature, Al-Farabi Kazakh National University, 005040, the Republic of Kazakhstan, Almaty, Al-Farabi Ave., 71, hafiz.55@mail.ru, +77775990327

[5]Associate Professor, Doctor of the Philology, Professor, Department of Russian Philology and World Literature, Al-Farabi Kazakh National University, 005040, the Republic of Kazakhstan, Almaty, Al-Farabi Ave., 71, a.tumanova@inbox.ru, +77055540808

Introduction

Currently, the association experiment is the most developed technology of psycholinguistic analysis of semantics of speech.

The procedure for the free associative experiment is as follows. Subjects were presented to a word or a set of words and say that they need to answer the first coming to mind words. Typically, each subject is given 100 words and 7-10 minutes for answers. Most of the reactions cited in associative dictionaries, received at the university and college students aged 17-25 years (the word-stimulus given in the native language of the subjects) (*Associative experiment*, 2014; Kavinkina I.V., 2012).

In the analysis of the responses of the association experiment emit primarily syntagmatic and paradigmatic associations. In the classification of associations is usually considered the relations arising in a pair of stimulus – reaction. There are several methods of classification (Deese J., 1965).

The method of associative experiment finds wide application in different areas of psycholinguistics (sociopsycholinguistics, applied psycholinguistics, etc.). Due to the fact that it is usually conducted on a large number of subjects, on the basis of the obtained data it is possible to construct a table of the frequency distribution of

word-reactions for each word-stimulus. In this case, the researcher has the opportunity to calculate the semantic closeness ("semantic distance") between different words. A peculiar measure of the semantic proximity of a pair of words is the degree of coincidence of the distribution of answers, i.e., the similarity of data on associations. This indicator appears in the works of different authors under the following names: "coefficient of intersection", "association coefficient", "measure of overlap".

Associative experiment is also used as one of the additional methods of distributive statistical analysis of texts, when researchers perform a statistical calculation of the frequency of word combinations of different types (the so-called "distribution"). The associative experiment makes it possible to find out how in the speech activity the components of the linguistic consciousness of the speakers of the given language are realized.

In addition to very active use in applied linguistics and psycholinguistics, associative experiment is widely used in the practice of psychology, sociology, psychiatry, as a method of psycho-linguistic examination and diagnosis (*Associative experiment*, 2014).

Materials and Methods

In Kazakh linguistics the FAE issues were surveyed in the papers of the following scientifists: Suleimenova E.D., Akhatova B.A., Shaimerdenova N.Zh., Gizdatova G.G., Sabitova Z.K., Ihsangalieva G.K., and others. FAE method is more and more wanted in concept researches.

Discussion and Results

Definition of the concepts "free association experiment", "conceptual analysis"

Concept – that is, information regarding the actual "or possible state of affairs in the world (i.e., what the individual knows, assumes, believes imagines the world of objects)" (Pavilenis R.I., 2001).

The conceptual system, according to P. Pavilionis, is characterized by the following properties:

- sequence of introduction of concepts; Available in the system concepts are the basis for the introduction of new ones;
- continuity of the conceptual system construction;
- continuity of the conceptual system: the introduced concept is interpreted by all the concepts of the system, albeit with varying degrees of compatibility, which ensures its continuous communication with all other concepts.

Thus, the essence of the conceptual system, according to R.I. Pavilionis, consists in a systematic presentation of knowledge and opinions of an individual corresponding to intersubjective and subjective information (Rogozina K.V., 2014; Evseeva O.V., 2009).

Analyzing the theory of the conceptual system of R.I. Pavilionis, V. Pishchalnikova notes that the concept includes psychological meaning, and personal meaning (Pischalnikova V.A., 1992).

It is commonly known that the term "concept" is actual in modern cognitive researches. So, the term "conceptual analysis" is widely used in scientists' researches. The concept is the object of this term.

The purpose of the article is to analyze the results of the free association experiment (hereinafter referred to as – FAE) as a promising way to study the concept in modern linguistics.

At first we stop on the definition of the concepts "association" and "association experiment". Association study has an old tradition in science. It is related to the names of Aristotle and Plato. Aristotle distinguished three types of association: contiguity, similarity and contrast. The term "association" was introduced to the scientific paradigm by John Locke. Usually the term "association" is defined as follows in the spheres of psychology and psychiatry:

"Association (lat. associatio – connection) is the type of connection between two or more mental processes (feelings, perceptions, thoughts, feelings, movements, etc.), which is expressed in the fact that the occurrence of one of them motivates the occurrence of another one or more" (Bleiher V.M., Crook I.V., 1995).

In modern cognitive linguistics the term "association" is defined as: "... connection of two phenomena, two representations, and two objects, etc., commonly – the stimulus and concomitant reaction. The concept of association was elaborated in detail in classical psychology and has been widely studied in experimental methodologies" (Kubryakova E.S., 1997, p. 13).

According to Zalevskaya A.A., the concept of association approach emerged in the search for a deep connections and relations model formed by humans through speech and thinking. This approach is the basis of "cognitive organization" of the model's comprehensive experience and may be found by the analysis of word associative links. To prove his/her thoughts the researcher draws upon the main achievements of scientists Deese J. and Bousfield W.: generalization and theoretical understanding of the extensive experience of experimental research of associative as well as categorical meaning; the ground of importance of such researches to understand the nature of human cognitive structure and to practice cognitive psychology methods (Zalevskaya A.A., 2000, p. 164).

Noting the advantages of association experiment, Belyanin V.P. suggests the possibility to find out the way linguistic consciousness pieces of native speakers are set by this method. According to the scientist "[...] association experiment [...] is a valuable material to study the psychological equivalents of the concept which is called "semantic field" in linguistics. The experiment reveals the word semantic relations which actually exist in the native speaker's mind" (Belyanin V.P., 2004, pp. 132-134).

The definition of conceptual analysis. It should be noted that the procedure of conceptual analysis is not described precisely in the modern linguistics. This is due to various interpretations of the term "concept" and a range of approaches to its research. Totally, the conceptual analysis means to establish the connections between objects and phenomena of reality and represent them in language, as well as to define the concept meaningful structure to be a mental unit.

According to Kubryakova E.S. the main directions of conceptual analysis are as follows: logical-philosophical concept of Pavilenis R.I.; the approach of Stepanov Y.S.

According to this paradigm the concepts are nonverbal senses that did not find their "language binding" and only seek their naming in language and find linguistic form (in the future act of semiosis and sign formation) only there to present them. Also scientists call researches to be lexicographical direction of conceptual analysis in the context of "The school of language logical analysis". Kubryakova E.S. describes Stepanov's approach as culturally and semiotic approach which researches "not heterogeneous language means that implement the same concept but specifically individual ones" (Kubryakova E.S., 2007, p. 12).

According to Popova Z.D., Sternin I.A. one of the main stages of semantic and cognitive research are such items as: 1) cognitive interpretation of the outcomes of description of the language means semantics (revelation of cognitive features that form the researched concept as a mental unit); 2) verification of the cognitive description obtained from native speakers. This stage is called by scientists to be optional, but desirable: "[...] the experimental procedures may be directly used to analyse the content of the concept and emphasize the cognitive features which form the whole concept" (Popova E.S., Sternin I.A., 160, p. 186).

Analysis of the structure and content is considered by Boldyrev N.N. to be the conceptual analysis. According to the scientist "[...] Due to comparison of the available language means to represent the concept in the language system and in speech we may reveal the main content of concept as well as the principles of language material organization since one or another concept is the basic to create individual language unit meanings, their various classifications as well as to form language categories" (Boldyrev N.N., 2014, p. 46).

According to Wierzbicka A. concept the conceptual analysis is the method of practiced introspection. Carrying-out of conceptual analysis means: to research the languages through

introspection which the scientist speaks fluently and entirely use all the data of cultural and anthropological analysis. Semantic primitives will be the units of semantic analysis (Paducheva E.V., 1996, p. 9).

If we turn to survey the nature of the conceptual analysis according to the researchers who work in linguistic and cultural area, we may also note an integrative approach to research concepts when scientists suggest to apply the FAE method – considering words connotative meaning and direct associative reactions.

In the process of linguocultural concepts analysis Karasik V.I. suggests to include the following procedures besides various types of semantic and interpretative analysis: 1) analysis of short compositions written by informants on a topic relevant to the content of the researched concept; 2) analysis of informants' associative reactions to concept's verbal label. (Karasik V.I., 2009, p. 32)

The researches of Vorkachev S.G. also address the FAE data.

According to the scientist, "Semantic content of linguistic concepts as "meaning of worldview universals" where value dominants are fixed, due to which we may understand the world and human, varies from culture to culture, from one ethnic group to another, from one social group to another one and from one to another person" (Vorkachev S.G., 2007, p. 6).

We agree with Pimenova M.V. that more "complete picture" to define the concept's cognitive features may be provided by personal experience of an individual native speaker (Pimenova M.V., 2005, p. 16). In our opinion, the most essentially and remarkably they may be seen on the basis of the associative data of society's representatives.

Summarising the review of the research opinion to the surveyed problems we may affirm that due to semantic analysis using the FAE method in conceptual research we may find out additional meaning of words which are names of the concept, as well as reveal the value and associative potential of any concept, know its culture-bound uniqueness, define more precisely the conventionality criterion to describe the concept according to Kiklevich A. (Kiklevich A., 2010, p. 200) or solve the problem of insufficient ground to a certain extent. According to the scientist, "[...] for the extend practice of concepts explication the literature is known by so-called verbocentrism – reliance on language data and ignoring the other (sociological, psychological, ethological data)" (Kiklevich A., 2010, p. 206).

Due to association analysis for any stimulus word we may reveal the concept cognitive features and axiological understanding of the word by the specific society. Here, the opinion of Kazakhstan researcher Sabitova Z.K. is true:

"Words-responses are the words that are directly connected in the associative verbal network (as a way to represent linguistic consciousness) to a certain extent involving all the lexicon of modern "average native speaker" of the language- culture. Due to this network we may reveal the system of his/her cultural stereotypes which reflect the nationality peculiarities" (Sabitova Z.K., 2013, pp. 312-313).

Free association experiment as a promising way to research the concept "heath"

In the research, we attempted to find out what associations the concept "heath" (is the stimulus word in the experiment) provides in the minds of native speakers of Russian language in Kazakhstan. The data for testees in the questionnaires were as follows: nationality, age, gender and associations with the stimulus word "heath". The number of respondents involved in the experiment – 100 people. The table provides quantitative information about the tested:

Ethnic composition		**Age of respondents**	
Nationality of respondents	**Percentage ratio**	**Age of respondents**	**Percentage ratio**
The Russians	59%	31	12%

The Ukrainians	15%	29	9%
The Bulgarians	15%	33	9%
The Chuvash	3%	34	9%
The Mordvins	6.2 %	41	9%
Nationality of respondents	**Percentage ratio**	32	6%
The Russians	59%	57	6%
The Ukrainians	15%	35	3%
The Bulgarians	15%	36	3%
Gender composition		38	3%
Age of respondents	**Percentage ratio**	39	3%
women	75%	30	3%
men	25%	44	3%
		55	3%
		27	3%
		60	3%
		63	3%
		68	3%
		70	3%

The tested were respondents of Slavic nationalities: the Russians, the Ukrainians, the Bulgarians, the Chuvash, and the Mordvins who live in Central Kazakhstan. They have grown, brought up and live in Russian culture habitat and are native people of Russian mentality. Russian is their native language.

Due to FAE data we revealed some typical mental stereotypes for native speakers of Russian regarding the concept "heath" and their modern value system.

We note that the associative field of the concept "heath" is very variable by syntagmatic and paradigmatic features.

The core of the associative field is the associates related to respondents' perceptions about the territorial expanse of heath. The largest number of associates is *space, spacious* – 4.4% and associates related to it by the meaning - *endless* – 2%, *large* - 0.6%; *expanse, expanded* – 1.3%, *wide* - 1.6%, *distance* – 0.6%, *infinity* – 0.3%, *long* – 0.3%. The native speakers of Russian perceive heath as an endless space without any borders. A horizon line may be the borders of a visible space for it. So, the associate *horizon* is in the average periphery of the associative field and represented in the respondents' answers by quantitative index – 1.25%.

Heath has a great valuable meaning for a modern native speaker of Russian as materialized space and the environment with flora and fauna. The following associates meaningfully related to the flora and fauna are involved in close periphery of the associative field: grass and herbs species, colors and their varieties; animals – horses, hackneys or their herd. *Grass* – 3.4%, *feather grass*, *feather grass heath* – 3.4%, *tumbleweed* – 2.2%, *greenth, green* – 1.6%, *flowers* – 1.6%, *blooming* – 0.6%, *wormwood* – 0.9%, *maqui* – 0.6%, *spiniferous* – 0.6%, *snowdrops* – 0.3%, *tulips* – 0.3%, *bluettes* – 0.3%, *button mushrooms* – 0.3%, *pea shrub* – 0.3%, *willow tree* – 0.3%, *trees* – 0.3%, *separate trees* – 0.3%. *Herbs* – 0.6%, *grasses* – 0.3%. *Horses, hackneys* – 1.9%; *herd of horses* – 1.3%; *cows* – 0.3%, *saigas* – 0.6%. Also the birds living in the Kazakh heath are marked by the respondents: *birds* – 0.6%, *golden eagle* – 0.6%, *eagle* – 0.3%. Poultry and insects in heath: *ground squirrels* – 1.25%, *jerboas* – 0.6%, *lizards* – 0.6%, *hamster* – 0.3%, *mouse* – 0.3%, *badgers* – 0.3%, *grasshopper* – 0.6%, *bees* – 0.3%, *tarantula* – 0.3%. The associates related to the very natural landscape of heath are beyond the average periphery: *the nature* – 0.6%, *rivers* – 0.3%, *bald mountains* – 0.6%, *mountains* – 0.3%.

First of all the native speakers of Russian relates *heath* to flora and fauna. So according to him/her

heath is associated with the place and the ground where cattle can graze. Thus, the associates are average periphery: *grazing lands* – 0.9%, *jailow* – 0.3%. The respondent's answers "ground" and "fertility" (and associates related to their meaning) are equal quantitative indexes: *ground* – 0.6%, *vegetable soil* – 0.3%, *fertility* – 0.6%, *hay* – 0.6%, *haystack* – 0.3%, *haymaking* – 0.3%, *bread* – 0.3%, *yield* – 0.3%, *irrigating ditch* – 0.3%, *wagon* – 0.3%, *tractor* – 0.3%. The following associates are further from average periphery: *sand* – 0.9%, *limestone* – 0.3%, *salt-marsh* – 0 .3%, *bold* – 0.3%. Their small quantitative indexes are due to the fact that such soil is not typical for central regions of Kazakhstan. For native speakers of Russian in Kazakhstan heath is associated more with the thoughts about fertility. It is not a dead, dull, dreary space but very fruitful. It is associated with life. Here the prominent results are as follows: associates *freedom* and *wind* which are close periphery have the same quantitative ratio by respondents – 3.4%. *Wind* or *clean air* – 0.9% runs free with no obstacles through the endless heath. This is natural human aspiration for freedom. It is very valuable for him/her: in movements, thoughts, freedom of choice, etc. According to the experiment the associates *sun* – 2.5% and *sunset* – 0.3%, *sunrise* – 0.3% and *sky* – 1.9% that are related to it also appear to be close periphery.

Importantly the associates *homeland* – 1.25%, *Kazakhstan* – 0.9%, *native* - 0.3% are average periphery including the associates related to the concepts "population", "daily routine", "culture": *people* – 0.3%, *the Kazakhs* – 0.3%, *the nomads* – 0 .3%, *hospitality* – 0.3%, *home* – 0.3%, *aul* – 0.3%, *yurt* – 0.6%, *aqyn* – 0.6%. In the minds of native speakers of Russian a heath is associated with the concepts of homeland along with awareness of its natural and climatic peculiarities.

The words-associates related to the concepts "hot weather", "heat", "drought" are the average periphery: *hot weather* – 0.3%, *sultry* – 0 .6%, *drought* – 0.9%, *dry* – 0.9% , *sun scorch* – 0.3%, *solar* – 0.3%, *heat* – 0.3%, *warmth* – 0.3%. Contrary to this concept the associate *freshness* is expressed in ratio – 0.6%. So, yellow, corn color of heath affected by the sun (dry heath or with wheat ears to be grown on the contrary) provides special valuable sense for native speakers of Russian in Kazakhstan. The following associates are average peripheral: *yellow* – 1.25%, *golden* – 0.6%, *gold* – 0.3%. In our opinion, curiously that the number of words-associates is equal: *yellow, golden* and *greenth, green*. Here, the green also has valuable meaning for the Russian mentality representative as a color associated with herbs. Meanwhile evaluation of the variety and colors of heath is expressed by the associates of distant periphery: *beautiful* – 0.3%, *beauty* – 0.3%. Yellow color is also the outcome of the impact of the hot sun on the heath.

Thus, we find the following associates in distant periphery in respondents's answers: *fires* – 0.6%, *black soot* – 0.6%. The only hazard related to the concept "heath" is marked by these associates on the part of respondents in Central Kazakhstan. They do not mentally perceive the heath to be associated with savagery and lack of life conditions. The associates designating wild animals are in distant periphery: *wolf* – 0.3%, *hare* – 0.3% *animals* – 0.3%. In our opinion, such perceptions are due to the fact that respondents of the experiment are the citizens who rarely visit heath and poorly know its natural and climatic conditions. Usually heath is observed on the road through it. So, the respondents' answers are the following associates: *road* – 1.25%, *railway* – 0.6%. Heath may be associated with a city and its infrastructure. The associate of *power lines* in distant periphery is 0.3%. They are mostly located in heath or see it in the summer time (the associates meaning "heat, hot weather" inform us about it). A single associate *a lot of snow* is expressed by small percentage – 0.3%. Heath is sometimes associated with rest, reflection or even entertainment. The following associates are distant periphery: *rest* – 0.3%, *cottage* – 0.3%, *fishing* – 0.3%, *camping trip* – 0.3%, *binoculars* – 0.3%; *solitude* – 0.3%, *loneliness* – 0.3%, *conciliation* – 0.3%, *calm* – 0.6%, *silent* – 0.3%, *silence* – 0.3%, *joy* – 0.3%, *joy life* – 0 .3%. The associates related to feelings, human qualities, people are distant periphery:

purity – 0 .3%, *sincerity* – 0 .3%, *nobleness* – 0 .3%. The following associates are provided separately: *illusion, childhood, Taras Bulba.*

It is exciting to trace the correlation of associates related to visual, auditory and olfactory perception of heath. The most words-associates is provided in this experiment based on visual perception. The visual perception is followed by olfactory one (*smell* – 0.6%, *herbal smells* – 0.6%, *fragrant* – 0.3%, *smelling* – 0.3%). Auditory abilities are in the last place. So, the sound is perceived to be a kind of background (*ringing* – 0.3%) or a sound uttered by insects (in one of the questionnaires a respondent wrote: "grasshoppers or whoever chatters").

Thus, for native speakers of Russian in Kazakhstan (representatives of the Slavic nationalities) *heath* is first of all an endless space filled with life and colors, various natural environments where they may be present or observe and evaluate which is the system of their axiological perceptions.

Research of the papers of Kazakh researchers where the concept "heath" is surveyed, particularly the papers of Tumanova A.B. related to correlation of the concept "homeland" with the concept "heath" in the research of artistic discourse of Kazakhs writers-bilinguals: "[...] the concepts of *homeland* and "*heath*" as well as the ways to represent them in the artistic discourse show the specifics of cognitive method of Russian-speaking writer in Kazakhstan, national mentality due to which we may speak about national linguistic view of the world and define its features" (Tumanova A.B., 2010, p. 78), contribute to the design of the certain prospects to survey the problems of the article: the research of the concept "heath" by FAE in the linguistic view of the world of ethnic Kazakhs who are the native speakers of Russian language comparing to the Slavic nationalities who are the native speakers of Russian.

Conclusion

Thus, due to accomplished research we may draw the following conclusions:

1) When the concept "heath" is researched due to FAE method we may analyze the system of mental perceptions of the surrounding world by direct respondents' reactions. The research of these reactions allows us to establish the cognitive features of provided stimulus word.

2) The system of axiological perceptions of native speakers of Russian (representatives of Slavic nationalities) is about endless space, will and freedom. Color perception of heath is very similar to axiological dominants in perception and worldview of the Kazakhs. This is rather consistent with the current realities, historical living conditions and lifestyle of Kazakhs.

3) FAE is a promising way to research concepts. Due to the data (subject to precise mathematical processing methods) we may observe the mental stereotypes of society, reveal its cultural memory and its modern value system which are verbalized in the direct associations.

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