

## **Current Scientific Methods in European Linguistic Researches: Theoretical Justification**

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**Abstract:** The purpose of the article is to clarify peculiarities of general and specific scientific methods applied to linguistic research and to distinguish between induction, deduction, analysis and synthesis as well as descriptive, comparative, structural, sociolinguistic, psycholinguistic and mathematic methods. Theoretical justification of understanding, measuring and keeping distinctive features of the presented methods used in European linguistic researches is the finding of investigation. The practical value of the theoretical justification of methods is to use its results for fundamental studies of all lexico-semantic sub-systems of value paradigms of the Ukrainian, English and French language societies.

**Keywords:** general scientific methods; specific scientific methods linguistic research

### **1. Problem Statement**

In specific scientific meaning methods are ways of finding, collecting, describing new language facts. Methods, in its turn, is a system of approaches used to study phenomena and regularities of nature, society and thinking, to reach the any definite results in practice, to organize and systemize theoretical and practical results obtained in the investigation.

### **2. Critical Overview**

Method is closely connected with methodology. The latter means the correlation of the facts obtained in the research with the data of other fundamental sciences, first of all with philosophy. The importance of method in language investigations is backed by the view on the development of a science about language.

There are two points of view as to when it appeared. The first one states that linguistics was born when a language became an object of interest in ancient Rome, in ancient Greece and India. The second one insists the science about language appeared only when a special method of language facts analysis (historical method) was applied to language research i.e. in the first quarter of the 19<sup>th</sup> century. Thus the introduction of a method provokes the appearance of a new branch are flexible

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enough. For instance, structuralism as a branch of linguistics emerged when a structural method came into being. In the course of time, however, structuralism has lost its significance, but its methods are still of vital importance in the language facts analysis.

### **3. Purpose of Investigation**

The purpose of the article is to clarify peculiarities general and specific scientific methods applied to linguistic research and to distinguish between induction, deduction, analysis and synthesis as well as descriptive, comparative, structural, sociolinguistic, psycholinguistic and mathematic methods.

### **4. Research Course**

There exist 2 groups of methods usually applied to linguistic research. These are general scientific methods and specific ones. The former are used in any sphere of human knowledge. The latter play an extraordinary important role in the development of a certain branch of science.

Among general scientific methods we distinguish between induction, deduction, analysis and synthesis are used.

Induction is a means of investigation with the help of which a general conclusion about the whole class of phenomena is made on the basis of conclusions about separate phenomena of the class. It is the generalization of results of a separate investigation. The majority of the European language researches are based on the inductive approach to the study of the language factors. Linguistics begins to investigate the characteristics of the language starting with the isolated objects and then going from the concrete situations to the general conclusions. The scientific search goes from the facts to generalization.

Deduction is a means of investigation when a general idea makes it possible to give conclusions about separate members of the class. It is based on the following axiom: everything which is true about the whole class is true about the separate phenomena of the class. In linguistics deductive approach is very important, and sometimes the only one possible, when we need to investigate the phenomena we cannot observe, for example, the mechanism of speech perception.

With deduction the notion of hypothesis is connected. Hypothesis is the method of investigation, when one of the possible answers to the question is formed before the research is carried out. In this case a scientist makes an assumption about the inner structure of the object, the links of its elements *a priori* before starting an experimental research. The investigation either proves or denies the hypothesis. The

one proved by the facts, becomes a scientific theory. With the help of hypothesis we can foresee the facts before their discovery.

Analysis is a theoretical or practical division of the whole entity into parts and the research of each element separately. The reverse process is called synthesis. It is a process of joining the parts together and the investigation of the whole entity. Understanding of a dialectic nature of these oppositions gives a possibility to find the real place of these methods in linguistics. Only the unity of analysis and synthesis provides objective and adequate reflection of reality.

In the componental analysis, for example, linguists proceed from the assumption that the smallest units of meaning are sememes (or semes) and that sememes and lexemes (or lexical items) are usually not in one-to-one but in one-to-many correspondence. For example, in the lexical item *woman* several components of meaning or sememes may be singled out and namely “human”, “female”, “adult”. The analysis of the word *girl* would also yield the sememes “human” and “female”, but instead of the sememe “adult” we’ll find the sememe “young” distinguishing the meaning of the word *woman* from that of *girl*. The comparison of the results of the componental analysis of the words *boy* and *girl* would also show the difference just in one component, i.e. the sememe denoting “male” and “female” respectively.

In its more elaborate form componental analysis also proceeds from the assumption that word-meaning is not an unanalysable whole but can be decomposed into elementary semantic components (semantic features) which may be classified into semantic *markers* presented also in the lexical meaning of other words and *distinguishers* – semantic features which are individual, i.e. which do not recur in the lexical meaning of other words. Thus, the distinction between markers and distinguishers is that markers refer to features which the item has in common with other items, distinguishers refer to what differentiates an item from other items. The componental analysis of the word, e.g., *spinster* runs: noun, count-noun, human, adult, female, who has never married. *Noun* of course is the part of speech, meaning the most inclusive category; *count-noun* is a marker, it represents a subclass within nouns and refers to the semantic feature which the word *spinster* has in common with all other countable nouns (*boy, table, flower, idea*, etc.) but which distinguishes it from all uncountable nouns, e.g. *salt, bread, water*, etc; *human* is also a marker which refers the word *spinster* to a subcategory of countable nouns, i.e. to nouns denoting human beings; *adult* is another marker pointing at a specific subdivision of human beings into adults & young or not grown up. The word *spinster* possesses still another marker – *female* – which it shares with such words as *woman, widow, mother*, etc., and which represents a subclass of adult females.

At last comes the distinguisher *who has never married* which differentiates the meaning of the word from other words which have all other common semantic features. Thus, the componental analysis may be represented as a hierarchical

structure with several subcategories each of which stands in relation of subordination to the preceding subclass of semantic features.

Componental analysis is currently combined with other linguistic procedures used for the investigation of meaning. For example, contrastive analysis supplemented by componental analysis yields very good results as one can clearly see the lack of one-to-one correspondence not only between the semantic structure of correlated words (the number and types of meaning) but also the difference in the seemingly identical and correlated meanings of contrasted words. For example, the correlated meanings of the Ukrainian word *товстий* and the English words *thick*, *stout*, *buxom* though they all denote broadly speaking the same property (of great or specified depth between opposite surfaces) are not semantically identical because the word *товстий* is used to describe both humans and objects indiscriminately (cf., *товста жінка*, (*книга*)), the English adjective *thick* does not contain the semantic component *human*. Conversely *stout* in this meaning does not contain the component *object* (cf. *a thick book* but *a stout man*). The English adjective *buxom* possesses in addition to *human* the sex component, and namely, *female* which is not to be found in either the English *stout* or in the Ukrainian *товстий*. It can be inferred from the above that this analysis into the components *animate / inanimate*, *human male/female* reveals the difference in the comparable meanings of correlated words of two different languages – Ukrainian and English – and also the difference in the meaning of synonyms within the English language<sup>1</sup> (p. 257).

Specifically linguistic methods of language investigation comprise descriptive, comparative, structural, etc.

Descriptive method is the inventarization of the language units and the explanation of their building and function on the definite stage of language development that is synchronically.

This method has the following stages:

1. Separation of the units of the analysis (phonemes, morphemes, lexemes, etc.).
2. Division of the units: the division of the sentence into the word-combinations; word-combinations into the word-forms; word-forms into morphemes; morphemes into phonemes; phonemes into different variants.
3. The classification and interpretation of the units.

Descriptive method uses inner and outer interpretation. Outer interpretation can be: a) according to the connection of language and extra lingual phenomena (social, logical-psychological, articulatory-acoustical); b) according to the connection of language elements with the other language units.

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<sup>1</sup> Р. З. Гинзбург, С.С. Хидекель, Г. Ю. Князева, А.А. Санкин (1979) Лексикология английского языка. М.: Высш. школа. 269 с.

The methods of the inner interpretation are different methods of the language phenomena studying, based on their paradigmatic and symptomatic relations.

Historical-comparative method presents the combination of methods and procedures of the historical-genetic investigation of language groups and families, and the separate languages for the installation of the regularities of their development. The limiting case of linguistic study, one might imagine, is when no data are available at all as in the case of the historical study of language where written records are lacking. But historical-comparative method makes it possible to break through even this apparent barrier, by using the “reconstruction” techniques of comparative philology. The forms of Proto-Indo-European and other reconstructed languages may be totally hypothetical in status, but they have nonetheless become a major field or linguistic enquiry.

The method of linguistics geography is the combination of the methods, which presuppose the cartography of the language elements, especially those belonging to dialects. With its help the space localization of the language phenomena takes place.

There are four types of lingual-geographic research:

- a) work with the informants;
- b) preparation of the material (field or test);
- c) cartography of the material;
- d) interpretation of the dialect material.

Experimental techniques are widely used in linguistics, especially in those fields that have been influenced by the methods of sciences where experimentation is routine. Phonetics is the subject most involved in this approach, but experimental testing is also common in several other areas, such as child language acquisition and language pathology. In grammar and semantics, experimental studies usually take the form of controlled methods for eliciting judgments about sentences or the elements they contain. Informants can be asked to identify errors, to rate the acceptability of sentences, to make judgments or perception or comprehension, and to carry out a variety of analytical procedures.

Comparative method is the number of the methods of language research and description through its systematic comparison with other languages with the aim to reveal its specificities. It deals with modern languages. This method researches the structure of the languages on the plane of their similarity or difference, independently of their genetic nature.

Structural method analyses the language phenomena taking into consideration only relations and connections between the language elements. This method appeared in the 20s of the 20<sup>th</sup> century. The main principles of structural method are:

- a) not a particular fact (sound, phoneme, word, etc.) is real but a language as a system;
- b) relations dominate the elements;
- c) when the relations are basic in language, then language may be studied by mathematic methods.

Structural method is aimed to study language as the whole structure, the elements and parts of which are interrelated and are connected with the system of linguistic relations.

Structural method is very important. It studies the inner organization of the language. This method realizes itself in 4 methodologies. The first one is the distributive analysis. It was created in the 20s of the 20<sup>th</sup> century by L. Bloomfield, and was developed in the 30-50s by Z. Harris.

Distributive analysis is the methodology of investigating language by studying the surrounding of a particular unit in the text. The second one is the methodology of direct elements. It deals with word-formation and sentences and represents them as the hierarchy of the elements. The third one is the transformational analysis. It is the experimental technique of determining semantic and syntactic similarities and differences among language units through similarities and differences in the sets of their transformations. And the last methodology is the componental analysis. It is the system of techniques of linguistic study of the meaning of the words. It is aimed at dividing the meaning into elementary components, which are called semes or markers.

Among sociolinguistic methods we can point out the method of data collecting and the method of information processing. Questionnaire is a widely used technique of material collection. It contains three parts. In the first part the topic and the aim of the questionnaire are stated. The second one contains questions concerning sex, age, nationality, profession, education, etc. The third one is linguistic and it contains questions of investigation. Another way of material collecting is observation. It helps us to compare real facts and facts given by a person. Interview is one of the forms of observation.

The psycholinguistic method presupposes processing and analysis of those language facts, which may be taken from people. In modern linguistics two kinds of methods are used. The first one is used to investigate the physiological reaction of a person in the process of speaking. The second one is the analysis of speech reaction to the language phenomena. It analyses person's association. So, the psycholinguistic methods help us to study peoples' actions according to their thinking and other psychological processes.

The usage of mathematic methods in the linguistics has been known for a long period of time. Such linguistic notions as phonetic law, morpheme production, the criteria

of language relationship, etc. were based on the quantitative characteristics. The active usage of the mathematic methods began in the middle of the 20<sup>th</sup> century. The prospect of machine translation was a stimulus for it. They differentiate quantitative and statistic methods. The quantitative methods sum up usage frequency of the language units. Statistic methods presuppose the usage of different formulae in studying the rules of the language unit division.

### **5. Concluding Remarks**

The article has clarified peculiarities of general and specific scientific methods applied to linguistic research. Methodological conception of presenting induction, deduction, analysis and synthesis as well as descriptive, comparative, structural, sociolinguistic, psycholinguistic and mathematic methods has been aimed at using them in European linguistic researches.

### **6. Further Research**

The prospect of research is to use the results for fundamental studies of all lexico-semantic sub-systems of value paradigms of the Ukrainian, English and French language societies.

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