

## **VARIOUS THEORETICAL APPROACHES TO THE STUDY OF BILINGUALISM AND NEUROFUNCTIONAL THEORY**

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Psycholinguistic problems of bilingualism/multilingualism have long been of concern to researchers in different countries. The purpose of the proposed review is to focus attention on the topical problems of today, therefore, publications of the beginning of the new millennium are mainly considered, while earlier works are touched upon only as needed (in connection with the discussion of certain issues).

Research in this area is carried out in a number of directions and in line with various theoretical approaches, a detailed analysis of which would require writing a number of monographs, so here it is only possible to identify certain problems and name primary sources, the appeal to which will help the interested reader to undertake an in-depth study. and diversified study of the theory and practice of domestic and/or foreign scientific research. It should be clarified that further studies are mainly considered, one way or another related to the acquisition and use of a second / foreign language.

First of all, let us dwell on some sources of information about the current problems of bilingualism, taking into account both foreign and domestic research.

“First language” – “second language”; “mother tongue” – “foreign language”

With regard to the neurological basis of language acquisition and use, one can trace, firstly, the transition from the opinion based on the study of brain disorders about the rigid localization of language functions in the human brain to the recognition of brain plasticity and the involvement of a number of brain areas in speech and thought processes (see Fig., for example, [Chernigovskaya 2004]); secondly, the presence of attempts to model the “architecture” of the neurological base of the language / languages, including – to solve the issues of quantity and quality, separate and / or joint storage and functioning of the image of the world and language knowledge / skills in bilingualism (see details below). ); thirdly, attempts to explain the problems associated with the acquisition and use of language from the point of view of the connectionist approach are becoming more and more popular.

A heated discussion on the relationship between cognitive and social factors in bilingualism causes some bewilderment, since this issue seems to have been resolved long ago in favor of an undeniable interaction of both; any bias in one direction or another is unacceptable, although in fact, researchers of the cognitive direction most often go so deep into the narrow issues under consideration that they cease to consistently take into account the broader – social – context of the functioning of the language, although they imply such a context as a matter of course. – an existing condition for both mastery and use of the language. Because supporters “social turn” in resolving this issue, they increasingly refer to the statements of L.S. Vygotsky, it seems important to pay attention to the fact that in such cases only one of the aspects of his theory of the formation and functioning of language in a

child is often taken into account: in fact, L.S. Vygotsky worked out in detail the issues of the development of the child's higher mental functions, and the issues of the structure of speech-cognitive activity, and the issues of the specifics of the formation and functioning of the meaning of a word in an individual, and much more.

M. Paradise points out that the native language, i.e. Grammar, which linguists (I will clarify what linguists mean – supporters of N. Chomsky's ideas) describe in terms of rules related to phonology, morphology, syntax and lexicon, is mastered along with something (incidentally, i.e. in conditions where attention is paid to something else, and not to what is internalized as a linguistic competence), is stored implicitly (i.e. remains inaccessible to introspection) and used automatically (i.e. understanding and producing not consciously controlled). Such implicit language competence is served by procedural memory. In addition to this, individuals are aware of the observable forms and meanings of words, i.e. what is at the input and output of the implicit language competence, but not the internal structure and work of this competence (i.e., the operations not carried out in this case). The knowledge arising from such conscious observations is stored in declarative memory, which is based on neural structures that are different from procedural memory another, etc. see: [Zalevskaya 1999; Zalevskaya and Medvedeva 2002]). In addition to the grammar of their language, speakers acquire the ability to deduce from the context (from the meanings of words, sentence structure) lexical, metaphorical, situational meanings associated with social or discursive contexts. This is the so-called pragmatic ability, or knowledge of pragmatics. Each language has its own specific pragmatic keys that complement the most general pragmatic principles.

Second language learners who do not have constant contact with speakers of that language usually learn about the structure of the language from books or from formal classroom instruction. Such conscious learning is served by explicit declarative memory. Since implicit language competence is acquired only through frequent language use, second language learners usually have little opportunity to develop implicit competence in a second language. Over time, especially in cases of frequent real communication with speakers of that language, they may partially develop implicit linguistic competence, but it is most likely that they will continue to rely heavily on explicit metalinguistic knowledge.

Further, M. Paradise considers the problems of neurofunctional components of the bilingual conceptual system and their interaction, and also discusses possible models for the organization of verbal-cognitive mechanisms in bilingualism. In his opinion, the neurofunctional system underlying implicit language competence includes one subsystem for each learned language.

Native speaking language. Each subsystem contains its own phonology, morphosyntax, semantics and lexicon. Two languages never form a single system at any level of structure at any point in development. On a phonological level, even if the speaker of the second language exhibits a strong foreign accent, the phonemes of the second language are not the phonemes of the first language: even though the values of some of the parameters (values) represented in the speaker's brain may be closer to those of the first language, than to indicators of the second language, all the same, the two systems turn out to be independent and can suffer selectively in case of pathology. The same applies to syntax, morphology, lexical semantics, regardless of how many common features there are for the second language system

compared to the first language, or how much closer the value indicators are to the first language than required. In cases where the significance of the indicators completely coincide, such a feature is overrepresented in the second language system.

According to M. Paradise, from the standpoint of the neurolinguistic theory of bilingualism, even interlanguage – an intermediate language, or grammar in its formation (transitory grammar), – to the extent that it is internalized as an implicit competence, is stored in the subsystem of the second language in exactly the same way as a normal second language, and continues to change and develop within this subsystem in the same way that any language can develop. However, the sequence of development may differ from the first language, and many features of the first language or other deviant features may become established and remain part of the grammar of the speaker of the second language. A "deviant" grammar is stored like any other grammar. The nature of what is represented in the implicit linguistic competence of the second language subsystem is identical to the nature of any native language, namely, the parameters of the language principles of the relevant types (phonological, syntactic, morphological, lexico-semantic) are either appropriate for a particular language or inappropriate for it. In fact, there is no reason to believe that the brain of a bilingual, whose implicit grammar of the second language incorporates more features identical to those of L1 than the grammar of the second language of a speaker of such a language, should represent and / or process languages differently in some different way. than the brains of speakers whose grammar incorporates these features.

In view of the above, M. Paradise postulates the presence of three repositories in human memory: two language repositories as subsystems of the neurofunctional system of the language and a common conceptual base, qualitatively identical to the conceptual base of native speakers of the same language. The author substantiates the independence of the general conceptual system from the language and shows that this system works in accordance with the same principles for both native speakers of one language (unilinguals) and bilinguals (regardless of whether the second language is acquired by children). or adults): the similarity lies in how the various components of the neurofunctional system of verbal communication work.

Communications; the differences are in what is represented (specific phoneme, morphosyntactic rule, lexico-semantic unit, concept). At the same time, apparent qualitative differences are in fact the result of quantitative changes that can be measured in terms of distance, duration and amplitude (for sounds) and in terms of the number of significant features for concepts. The mechanisms of speech understanding and production are the same, the differences are only in the content of the processed. Late bilinguals differ from unilinguals and early bilinguals in terms of their reliance on implicit language competence, metalinguistic knowledge, and pragmatics, but do not differ from them in terms of conceptual development, representation, or cognitive functioning [Paradis 2007: 20]. If cognitive functioning is understood as the actual content of ideas and values in the mind of the speaker, then the differences between the cognitive functioning of a unilingual and a bilingual will be of the same type as between a native speaker of Hungarian and a native speaker of English: what they think, but the principles behind speaking are the same [Op. cit.: 11].

Having carefully traced the qualitative identity of the nature of bilingual and unilingual representations, the principles of organization of representations, their assimilation, development and use, M. Paradise draws the following conclusion: the bilingual conceptual base is more extensive than the unilingual conceptual base, but it does not differ either in structure or in the way work. At no level of linguistic or conceptual functioning do bilinguals have anything that is missing from unilinguals. There is no need to postulate the existence of any brain functions or mechanisms specific to the bilingual individual [Op. cit.: 26].

Other works related to the brain mechanisms of speech and interesting for the study of intermediate language will be touched upon in the next chapter in connection with the problem of the neurofunctional basis of bilingualism.

Undoubtedly, the study of the phenomenon of the intermediate language is not limited to the aspects and approaches mentioned above. The issues of typology of bilingualism, the structure of a linguistic sign in bilingualism, the relationship between the image of the world and specific access to it through different languages, the problems of positive and negative transfer of skills (in the latter case, interference) and many others deserve special discussion. the solution of which is directly related to the comprehensive study of the phenomenon of the intermediate language.

#### *Intermediate language as a dynamic functional system of a special type*

The complication of the picture of the intermediate language in the conditions of interaction between two languages is undoubted, since a number of additional factors intervene, nevertheless, a comparison of the two named situations of the functioning of the TL of the language seems to be very useful. In this regard, of particular interest is the experience of combining in a single program of research into children's speech and speech of adults, described in [Dupoux 2001]. It seems that the most productive would be the development (and implementation!) of a broad program of research into the TL from various perspectives, including the acquisition of the first language by children and the acquisition of the second language at various age intervals, with the obligatory consideration of the specifics of the contacting languages and cultures and with the involvement of data. from a number of related fields of science, including neuroscience. At the same time, the presence of a unified theoretical base could ensure the comparability of the results of observations and experiments, analyzed and interpreted in line with a unified coordinate system.

Regarding the relativity and dynamism, and systemic nature of the intermediate language, the following can be added. I have repeatedly had to deal with the fact that some phenomena of the English language are learned by learners (native speakers of the Russian language) right away and for a long time (perhaps as a result of the imprinting mechanism), while certain phenomena presented under the same conditions, remain a "stumbling block" and require conscious control for error-free use of them. Most often this takes place in cases of the so-called "typical mistakes" of trainees, however there are also phenomena that constitute particular difficulties for individual individuals. One gets the impression that if one imagines the development of an intermediate language in bilingualism as an advance on a scale from zero to complete mastery of the target language, then some phenomena of the second language "get stuck" somewhere at the beginning of this conditional scale, while individual phenomena immediately fall into the advanced sections of the scale, and the most typical is a dynamic progressive progress along the scale towards an

increasingly perfect use of a new language. Accordingly, the reorganization of various “sections” of the TL can proceed in different ways: for some, the ordering is established correctly and for a long time, for others, there is a restructuring, reorganization with the possible allocation of new grounds for classification (combining or dividing into subgroups etc.).

An intermediate language in bilingualism can undoubtedly be interpreted as a dynamic functional system that forms and functions according to certain patterns, the identification, description and explanation of which should be the task of further research, which will form a reliable basis for the relevant methodological recommendations, which is important for improving the results language learning.

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