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Bilingualism: Research Problems

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Проблемы исследования билингвизма

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Long-term practice — assisting children and adults in restoring cognitive functions (habilitation and rehabilitation), as well as monitoring the formation of natural bilingualism in healthy children of different ages and in children with language development disorders, has been manifested in a number of works, which, as the years pass, could be developed into a monographic publication. As an approbation, I will share the results of my practical work and findings relevant for com-

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prehension of the phenomenon of bilingualism and for the theory of language contacts.

Before immersion in a multilingual environment, I had 13 years of experience working in a rehabilitation center — assisting in the recovery of language and other cognitive functions for patients after brain injuries. Neuropsychology and the theory of interhemispheric asymmetry (the work of Vygotsky, Luria and their adherents) were the theoretical basis of my practical work. The results of comprehension of syndromes observed in visual perception disorders were embodied in the articles describing the biphemispheric organisation of visual gnosis, including the analysis of right — and left-hemispheric dyslexia [1; 2; 34; 36; 39].

Working with patients (children and adults) in a multilingual environment raised many questions and led to the search for theoretical pillars. These were, firstly, the work of Eric H. Lenneberg (*Biological Foundations of Language*, 1967), which argues for the idea of *brain plasticity* (in articles [4; 5] before: ‘brain flexibility’, but here and further — brain plasticity) as part of the dichotomy ‘species specificity — plasticity’. The behavior of higher living beings is represented, on the one hand, by species-specific functions becoming mature, and, on the other hand, at each level gained through maturation, brain plasticity provides the environment for the development and refinement of speech and motor skills. Brain plasticity manifests itself as adaptation, education and recovery of impaired functions. And secondly, Paradis’ work (Paradis M. *A Neurolinguistic Theory of Bilingualism*. 2004) examines the “two ways of speaking”: different cognitive mechanisms underlying native and foreign language acquisition provide two ways (natural and logical) of language acquisition. According to Paradis, these are implicit and explicit language processes, which manifest themselves as procedural and declarative memory.

Bilingualism by the way of acquisition of the second language is known to be subdivided into natural (two languages are simultaneously or sequentially mastered involuntarily in the process of contacts in the language environment — the natural way) and artificial (the second language is consciously, arbitrarily learnt in the process of classes — the logical way). The first language of a healthy person is always acquired in a living linguistic environment, and we call this language a native language; if two or more languages are acquired in a living linguistic environment, we speak of two (three) native languages. Languages acquired in the process of learning, i.e. in a logical way, are called foreign languages. The two ways of language acquisition rely on different brain neuronal resources, which corresponds to the data of neuropsychology on the different ways of information processing by the right and left hemispheres of the brain.

The acquisition of a second language in a living environment, i.e. the formation of natural bilingualism, occurs utilising the same cognitive mechanisms as the acquisition of a mother tongue in a monolingual environment. There is no universally acknowledged theory of natural bilingualism, so there is no research

methodology. Often the process of bilingualism formation is regarded as a simple doubling of the native language, as a parallel co-development of languages. The principles of language formation in a monolingual environment (a clear programme of successive language improvement) are mechanically transferred and expected in multilingual development. But when immersed in a new linguistic environment (natural bilingualism), something happens that is absolutely impossible in monolingual education: the first language starts to impoverish and may disappear completely (language attritions). Fossilisation, i.e. atrophy of language development, is also possible. This is particularly evident in young children, who simply change from the first language to the second after a short period of bilingualism. But even older people, being in a new linguistic environment, often feel the fading of their native language. Under the monolingual upbringing, halting of development and impoverishment of the language is known to be possible only in case of severe illness.

The lack of the theory of natural bilingualism complicates the solution of various practical problems and in a number of cases leads to errors in the interpretation of the observed facts and the results of experimental work. Thus, individual cases of ‘good’ bilingualism in a child could be regarded as evidence that bilingualism cannot be harmful, but this fact proves only that ‘good’ bilingualism is possible. In some works bilinguals are infants who are addressed by their parents in two languages from their birth. But bilingualism is, first of all, the understanding of both languages, while the process of speech comprehension begins at 9 months of age. Moreover, addressing a child in two languages does not guarantee that the child understands both languages. To date, a serious problem is the differential diagnosis of language development disorders and speech development delays in healthy children caused by the influence of a bilingual environment. In monolingualism, diagnosis is based primarily on the age norm of speech development, while in bilingual upbringing this is impossible due to attritions and fossilisations. Often in respect to bilingualism one can hear the saying ‘the earlier a second language is introduced, the better’, and there are attempts to teach infants several languages simultaneously. These attempts, according to our observations, may lead not to bilingualism, but to the child’s rejection of speech in all languages. The experience of successful bilingual upbringing, on which it would seem possible to rely, turns out to be applicable only in a certain age range. For example, the well-known advice of equal time division between languages can help to develop two languages after the formation of phrasal speech but can lead to a delay in speech formation in the pre-speech period. Is monolingualism the norm but multilingualism the exception? Or vice versa? There is no consensus among scientists on this point. The prevalence of multilingualism in society is sometimes regarded as an indication that it, but not monolingualism, is the norm in the present-day world. But society and cognitive mechanisms are different spheres and the prevalence in society does not mean that this condition is not an accommodation,

an adaptation for cognitive mechanisms. Early bilingualism attracts many parents and educational programme organisers who tend to see only pluses and the guarantee of a brilliant future for their children, whereas the challenges of bilingual education do not receive special attention and analysis.

Monitoring the process of formation of natural bilingualism has revealed certain facts:

- When natural bilingualism develops, a non-pathological erasure of language is observed, and a tendency towards monolingualism is evident [3; 5–8; 10; 13; 15; 30; 31].

- The language environment is only a prerequisite for bilingualism, not the reason for it. Often people (both children and adults) in a multilingual environment do not become bilingual despite hearing the second language regularly. Even in bilingual kindergartens, where seemingly all conditions are created for the acquisition of two languages, children do not always become bilingual [16; 21]. The language, which is not essential for communication, remains only a sound background.

- Children who are in a bilingual environment from their birth do not start speaking two languages simultaneously. As a rule, phrase speech in one language is formed first, and then the second language is picked up [21; 25].

- The formation of natural bilingualism does not depend on the educational status of the family: in migratory conditions, children whose parents do not know or understand the language of the host country become bilinguals first of all.

- Children with lower intelligence in a bilingual environment sometimes can easily acquire two languages and become natural bilinguals. At the same time, the process of bilingualism in healthy children who speak one language well does not always go smoothly. Thus, the level of a child's intelligence is not a decisive factor for the formation of natural bilingualism [11; 25].

- Natural bilinguals/polylinguals are not always successful in acquiring foreign languages at school in a logical way and in their schooling in general. Sometimes early bilingualism is observed in children with poor memory. That is, early multilingualism does not mean good learning abilities and a good memory.

- The reported facts show the difficulty of identifying regularities and the need to add a clarification in some cases: the described phenomena are not inevitable and obligatory, but only possible. Thus, speech failure in a child in a bilingual environment is possible, but not obligatory [25].

Some findings on analysing observations regarding the formation of natural bilingualism led to the following:

1. Generalised observations show that in a bilingual environment the second language is acquired if *the need to communicate* in two languages persists for a long time (!), it is acquired only to the extent *necessary for communication*, it is acquired only in the time range when it is *necessary for communication*, one

of the two evolving languages can get impoverished or completely disappear if *the need to communicate* in this language decreases or completely disappears. A bilingual environment is only a necessary condition for the formation of natural bilingualism, and the reason for the phenomenon is the need to communicate in two languages [21].

2. Description of linguistic phenomena that cannot be defined as native or foreign language [8]:

- language replacement and substitute language,
- language impoverishment and ‘impoverished’ language,
- language acquired in a predominantly natural way during adolescence and later,
- second language enhancement during a person’s lifetime,
- twin languages in early multilingualism.

3. Justification of the hypothesis: the evolutionary purpose of brain plasticity is primarily the maintenance of species-specific forms of behavior [29].

4. Analysis of bilingualism and other manifestations of human language system functioning in the context of brain plasticity. Justification of adaptation as a mechanism for the emergence of natural bilingualism in phylogenesis and ontogenesis. The introduction of a new term ‘*inerasable framework of language*’ [37].

5. Insight into the structure of the cognitive deficit of the most severe child language disorder — impressive (sensory) alalia (a specific disorder of receptive speech development), which, in turn, was the basis for developing a differential diagnosis of the syndrome and planning speech therapy. In this syndrome, a child with normal hearing and intelligence does not begin to understand the speech of others, i.e., he/she cannot master the language as a native language but can acquire it as a foreign language [4; 9; 12; 14; 19; 20; 27].

6. Description of the duality of the organisation of the speech understanding function (based on the analysis of bilingualism and child language syndromes) [43].

7. Discussion of the role of biological and social factors in the formation of language and natural bilingualism. Species (species-specific) knowledge. Knowledge and behavioral characteristics inerasable and erasable [41; 42; 44].

To reach an understanding of the phenomenon of natural bilingualism is possible within the framework of the theory of nonlinear dynamic self-organising systems, which is characterised by constant change-development, unpredictability, irreducibility to special cases and strong dependence on initial conditions. The following works are devoted to this approach:

8. Application of the conceptual apparatus of dynamical systems theory to the phenomenon of natural bilingualism [18; 22–24; 26; 28].

9. Simulation of the process of natural bilingualism (together with physicists and mathematicians) [32; 33; 35; 38; 40].

10. Language contact. Explicit and implicit reasons for the disappearance of minor languages, introduction of the term ‘monolingual repository’ [17; 26; 30; 45].

The problems in understanding bilingualism, in our belief, relate to insufficient attention to the role of biological factors both in the formation of bilingualism and language in general. The language system functions in accordance with the non-linear dynamics of supercomplex systems, and this fact is no more in doubt. Each individual case of natural bilingualism is unique and unpredictable, it is, in fact, only one unique facet of an infinitely multifaceted phenomenon. This fact makes the limited application of existing classifications of bilingualism understandable. But in all the variety of multilingual situations, it is possible to identify those where the probability of a possible negative impact on the formation of the language system will be minor or, on the contrary, great. It is the probability, not a definite reason. One of the dangerous situations in the pre-speech period is presumably an ‘aggressive multilingual environment’, i.e. a multilingual upbringing in which two or more languages become constantly necessary for communication (e.g. a child takes turns with three multilingual governesses). In such cases, the child is deprived of the chance to ignore one of the languages. However, in families where father and mother speak different languages with the child, the transition to phrasal speech usually takes place in one language, and the second language remains weak for a long time. This option is more favorable. One of the main tasks of multi-lingualism research is to identify a set of dangerous cases during the formation of natural bilingualism (especially in the pre-speech period), in which there is a high probability of a negative impact of the multilingual environment on the general and linguistic development of the child. Also, the most important task of the research on multilingualism is to generalise the available facts and form an adequate attitude to the phenomenon of the disappearance of minor languages, including the role of natural bilingualism in this process. Understanding the explicit and implicit reasons for the phenomenon will help in the search for adequate responses to the challenge of our time.

I hope that the conclusions and results obtained, as well as the questions raised will be useful to researchers of this problem field, will contribute to building knowledge on the multidimensional topic of bilingualism and language contacts. Here are some papers that may be of interest for the researchers working in the same field:

References

1. Aleksandrova, N.S. 1992. “Alexia in the structure of visual-gnostic disorders in patients with focal brain lesions.” In *Speech pathology: history of study, diagnosis, overcoming*. Saint Petersburg, pp. 97–106. Print. (In Russ.)
2. Alexandrova, N.Sh. 1999. “Formation of the ability of schematic representation of objects in ontogenesis (Children’s drawings).” In *Problems of pathology of development and decay of speech function*. SPb.: St. Petersburg State University publisher, pp. 25–31. Print. (In Russ.)
3. Alexandrova, N.Sh. 2003. “Early childhood bilingualism — aspiration to monolingualism?” In *A.R. Luria and psychology of the 21st century. Reports of the second international conference on the 100th anniversary of the birth of A.R. Luria*. Moscow, pp. 65–73.

4. Alexandrova, N.Sh. 2004. "Children's aphasias and Landau-Kleffner syndrome in the light of brain flexibility." *Journal of neurology and psychiatry after S.S. Korsakov*, issue 104, no. 6, pp. 54–8. Print. (In Russ.)
5. Aleksandrova, N.Sh. 2004. "Early bilingualism and the hypothesis of brain maturation." In *Children's speech as a subject of linguistic research. Materials of the International Scientific Conference*. St. Petersburg. Print. (In Russ.)
6. Aleksandrova, N.Sh. 2005. "Early bilingualism and ways of flexibility. Observations and reflections." In *Ontogenesis of speech activity: norm and pathology: monographic collection*. Moscow: 'Prometheus' MPGU publ., pp. 462–477. Print. (In Russ.)
7. Aleksandrova, N.Sh. 2005. "Early bilingualism and child's abilities." In *Children's bilingualism: Materials of the international scientific-practical conference*. Saint Petersburg, pp. 5–6. Print. (In Russ.)
8. Alexandrova, N.Sh. 2006. "Native language, foreign language and linguistic phenomena that have no name." *Voprosy yazykoznaniya*, no. 3, pp. 88–100. Print. (In Russ.)
9. Aleksandrova, N.Sh. 2007. "Children's language syndromes (alalia, children's aphasia, Landau-Kleffner syndrome)." *Journal of neurology and psychiatry after S.S. Korsakov*, issue 107, no. 8, pp. 70–76. Print. (In Russ.)
10. Alexandrova, N.Sh. 2009. "Non-pathological language attrition (first language attrition) in the formation of early natural bilingualism." In *Problems of ontolinguistics — 2009 Proceedings of the International Conference 17–19 June 2009*, pp. 312–314, St. Petersburg. Print. (In Russ.)
11. Alexandrova, N.Sh. 2012. "Impressive bilingualism in a child suffering from mental retardation and expressive alalia: a case study." In *Problems of ontolinguistics*. St. Petersburg: Zlatoust publ., pp. 487–489. Print. (In Russ.)
12. Alexandrova, N.Sh. 2012. "Impressive (sensory) alalia — language without linguistic competence?" In *Fifth International Conference on Cognitive Science 18–24 June 2012, Kaliningrad, Russia Abstracts*, vol. 1, pp. 208–209. Print. (In Russ.)
13. Aleksandrova, N.Sh. 2013. "Two types of bilingualism — similar but different phenomena." In *Proceedings of the scientific conference 'Problems of ontolinguistics — 2013, St. Petersburg, June 26–28*, pp. 400–401. Print. (In Russ.)
14. Alexandrova, N. 2014. "Child language syndromes and hypotheses in psycho- and neuro-linguistics." LAP LAMBERT Academic Publishing; Berlin. Print. (In Russ.)
15. Alexandrova, N.Sh. 2014. "Bilingualism — adaptation in the linguistic sphere?" In *Sixth International Conference on Cognitive Science. Theses of reports. — Interregional social organisation 'Association for Cognitive Studies', Centre for Development of Interpersonal Communications, Kant Baltic State University named after I. Kant*, pp. 114–115. Print. (In Russ.)
16. Alexandrova, N.Sh. 2015. "Why Lera did not start speaking German? Regarding the organisation of bilingual kindergartens." *Curriculare und soziale Aspekte der Bildung und Erziehung bilingualer Kinder*. Band 6; Berlin, pp. 273–275. Print. (In Russ.)
17. Alexandrova, N.Sh. 2016. "Languages in the post-Soviet space. Points of pain. Ways out." In *2nd International Conference and 10th International Scientific Workshop 'Multilingualism and Intercultural Communication: Challenges of the 21st century'* (Pula, July 16–23, 2016) 'Multi-lingualism and Intercultural Communication: Challenges of the 21st century' (Pula, 16–23 July 2016), pp. 205–207. Print. (In Russ.)
18. Alexandrova, N.Sh. 2016. "Natural bilingualism and the order of chaos. Facts and reflections." In *Seventh International Conference on Cognitive Science. Svetlogorsk, 20–24 June 2016. Theses of reports*, pp. 95–97 Institute of Psychology, Russian Academy of Sciences. Print. (In Russ.)
19. Alexandrova, N.Sh., and O.A. Alexandrova. 2016. "Impressive (sensory) alalia — language without linguistic competence?" In *Seventh International Conference on Cognitive Science. Theses of reports*, pp. 97–98. Print. (In Russ.)
20. Alexandrova, N.Sh., and O.A. Alexandrova. 2016. "Impressive (sensory) alalia." *Journal of Neurology and Psychiatry after S.S. Korsakov*, vol. 116, no. 11, pp. 114–120. Print. (In Russ.)

21. Alexandrova, N.Sh. 2017. “Bilingual environment — the reason for natural bilingualism or mere necessary condition?” In *From bilingualism to translanguaging: pro and contra: proceedings of the 3d International Scientific and Practical Conference. Moscow, RUDN University, December 1–2, 2017*, pp. 142–148. Print. (In Russ.)
22. Alexandrova, N.Sh. 2017. “Natural bilingualism as a nonlinear self-organising system.” In *Non-linear Dynamics in Cognitive Studies — 2017 Proceedings of the Fifth All-Russian Conference*, pp. 15–17, Nizhny Novgorod. Print. (In Russ.)
23. Alexandrova, N.Sh. 2017. “Natural bilingualism as an exceptional, though widespread phenomenon.” In *Problems of ontolinguistics — 2017. Language mastering and functioning in the multilingual situation. Proceedings of the annual international scientific conference*, pp. 3–6. Print. (In Russ.)
24. Alexandrova, N.Sh. 2017. “On what sporadic observations of natural bilingualism speaking? Can mathematics help?” In *All-Russian Conference on Cognitive Science KISE-2017: Proceedings of the All-Russian Conference (Kazan, 30 October — 3 November 2017)*. Kazan: Kazan University Publishing House, pp. 494–497. Print. (In Russ.)
25. Alexandrova, N.Sh. 2017. “Can natural bilingualism be harmful?” *Bulletin of Peoples’ Friendship University of Russia. Series: Issues of education: languages and speciality*, vol. 14, no. 2, pp. 211–216. Print. (In Russ.)
26. Alexandrova, N.Sh. 2018. “Extinction of languages, natural bilingualism and nonlinear dynamics.” In *8st International conference on cognitive science: theses of reports, Svetlogorsk, 18–21 October, 2018*. Svetlogorsk, pp. 35–37. Print. (In Russ.)
27. Alexandrova, N.Sh., and O.A. Alexandrova. 2018. “Impressive (sensory) alalia: mastering a language as native is impossible, learning a language as foreign is achievable.” In *8st International Conference on Cognitive Science: theses of reports, Svetlogorsk, 18–21 October 2018*. Svetlogorsk, pp. 38–40. Print. (In Russ.)
28. Alexandrova, N.Sh. 2018. “Super complex natural bilingualism.” In *Challenges of ontolinguistics: Proceedings of the annual international scientific conference*. Ivanovo, pp. 51–53. Print. (In Russ.)
29. Alexandrova, N.Sh. 2018. “Provision of species-specific forms of behavior — the primary goal of brain plasticity?” In *Proceedings of the conference ‘Cognitive research at the current phase’*. Arkhangelsk, pp. 14–17. Print. (In Russ.)
30. Alexandrova, N.Sh. “‘She didn’t know Russian well...’ Bilingualism of the nobility in A.S. Pushkin’s novel ‘Eugene Onegin’ and modern concepts of the nature of bilingualism.” In *Bi-, poly-, translanguaging and language education: dedicated to our Teachers. Proceedings of the 4th International Scientific and Practical Conference under the auspices of IAPRYAL*. Moscow: Peoples’ Friendship University of Russia publ. (RUDN University), pp. 169–178. Print. (In Russ.)
31. Alexandrova, N.Sh. 2019. “How early can a child become bilingual? *Contemporary ontolinguistics. Proceedings of the annual international scientific conference*. Ivanovo, pp. 314–318. Print. (In Russ.)
32. Alexandrova, N.Sh., V.A. Antonets, I.V. Nuidel, O.V. Shemagina, and V.G. Yakhno. 2019. “Formalized description of spontaneous learning in multiple languages.” In *Sixth Congress of Biophysicists of Russia. Collection of scientific papers*, pp. 332–333. Print. (In Russ.)
33. Alexandrova, N.Sh., V.A. Antonets, I.V. Nuidel, O.V. Shemagina, and V.G. Yakhno. 2019. “Modeling series of specifics of natural bilingualism formation.” In *21st International scientific and technical conference ‘Neuroinformatics — 2019’*. Collection of scientific papers, pp. 150–159. Print. (In Russ.)
34. Alexandrova, N.Sh. 2019. “Visual agnosia and duality of visual identification.” In *6th Congress of biophysicists of Russia. Collection of scientific papers*, p. 282. Print. (In Russ.)
35. Alexandrova, N.Sh., V.A. Antonets, I.V. Nuidel, O.V. Shemagina, and V.G. Yakhno. “Modelling modes for spontaneous mastering of several languages as tools for communication.” In *Non-*

- linear Dynamics in Cognitive Research — 2019*. Proceedings of the Sixth All-Russian Conference, pp. 27–30. Print. (In Russ.)
36. Alexandrova, N.Sh. 2019. “Visual agnosia and duality of visual identification.” In *Nonlinear dynamics in cognitive research — 2019. Proceedings of the Sixth All-Russian Conference*, pp. 22–26. Print. (In Russ.)
 37. Alexandrova, N.S. 2020. “Bilingualism and other manifestations of language system functioning in the light of brain plasticity.” *Philological Sciences. Scientific reports of higher school*, no. 6, pp. 170–176. <https://doi.org/10.20339/PhS.6-20.170> Print. (In Russ.)
 38. Alexandrova, N.Sh., V.A. Antonets, O.A. Kuzenkov, I.V. Nuidel, O.V. Shemagina, and V.G. Yakhno. 2020. “Bilingualism as an unstable state.” *Advances in Cognitive Research, Artificial Intelligence and Neuroinformatics. Intercognsci*, vol. 1358, pp. 359–367. https://doi.org/10.1007/978-3-030-71637-0_41 Print. (In Russ.)
 39. Alexandrova, N.Sh. 2021. “Schematic drawing as a cognitive process and why patients with facial agnosia ignore faces.” In *First National Congress on Cognitive Research, Artificial Intelligence and Neuroinformatics. 9th International Conference on Cognitive Science. Collection of scientific papers*. In two parts. Moscow, pp. 285–288. Print. (In Russ.)
 40. Alexandrova, N.Sh., V.A. Antonets, O.A. Kuzenkov, I.V. Nuidel, O.V. Shemagina, and V.G. Yakhno. 2021. “Modes of language loss in individual and population bilingualism.” In *First National Congress on Cognitive Research, Artificial Intelligence and Neuroinformatics. 9th International Conference on Cognitive Science. Collection of scientific papers*. In two parts. Moscow, pp. 221–223.
 41. Alexandrova, N.Sh. 2021. “Spontaneous Knowledge. What do we know about it today?” In *Non-linear Dynamics in Cognitive Studies — 2021. Proceedings of the 7th All-Russian Conference*. Edited by V.A. Antonets, S.B. Parin, and V.G. Yakhno. Nizhny Novgorod, pp. 7–8.
 42. Alexandrova, N.Sh. 2022. “ ‘Computer metaphor’, interhemispheric asymmetry and species (spontaneous) knowledge of HOMO SAPIENS.” *Izvestiya Vysshikh Uchebnukh Zavedeniy. Applied nonlinear dynamics*, vol. 30, no. 3, pp. 358–372. <https://doi.org/10.18500/0869-6632-2022-30-3-358-372>
 43. Alexandrova, N.Sh. 2023. “On human understanding of speech. In search of ‘constructive’ concepts of nature.” In *Language and Artificial Intelligence. Collection of scientific articles upon the results of the conference ‘Linguistic Forum 2020: Language and Artificial Intelligence’* <https://doi.org/10.37892/978-5-907498-47-1-1>
 44. Alexandrova, N.Sh. 2023. “On the role of biological and social in the formation of verbal communication.” In *Nonlinear Dynamics in Cognitive Studies — 2023. Proceedings of the 8st All-Russian Conference*. Nizhny Novgorod, pp. 10–11.
 45. Alexandrova N.Sh. 2023. “Language Extinction and Natural Bilingualism.” *Polylinguality and Transcultural Practices*, vol. 20, no. 3, pp. 436–455. <https://doi.org/10.22363/2312-8127-2023-20-3-436-455>

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