

PEDAGOGICAL GRAMMAR AS THE FRAMEWORK OF TEFL RESEARCH. PART 14. AGE AND FOREIGN LANGUAGE ACQUISITION: EXPERIMENTAL DATA

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The paper presents a comparative analysis of various groups of data (language acquisition speed, quality of language acquisition, comparative acquisition efficiency depending on the period of exposure, adult-child, and younger-children versus older-children's differences in acquisition) obtained in different experiments over a substantial time span. As it follows from the experimental studies analysis, there is conflicting data regarding the existence of a "critical age" for the foreign language acquisition and its specific limits. Much of the data can be interpreted in various ways. Differences between adults and children, older children and younger children can be explained not only by the existence of the "critical age", but also by other reasons. The advantage of older students may be explained by their better memory, which allows them to learn a large number of clichés with which they successfully communicate, even having a very limited supply of language material. In general, basing on the available data, it is hardly possible to state that there is any age boundary in human life beyond which the foreign language acquisition is impossible or difficult to any serious degree. Experimental data, while contradictory, do not give rise to a straightforward conclusion about the advantage of any age group in any aspect of language. In short-time courses, adults progress faster but on longer stretches, children close the gap and even outpace adults. There are quite a few differences in language acquisition between adults and children, as well as older and younger children, but these differences are probably not due to the existence of a "critical age", but to other factors discussed in the paper. It is likely that adults can learn language just as effectively as children provided the factors that impede their learning (strong instrumental and integrative motivation, absence of unfavorable affective factors, etc.) are eliminated. However, this assumption requires further research.

Keywords: *acquisition quality, acquisition speed, adult-child variations, critical age, foreign language acquisition, period of exposure.*

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Problem statement. *Introduction to the series.* Numerous research projects in teaching foreign languages, specifically in the development of grammar competence, often seem to lack a common framework to integrate them into a single area with uniform approaches, terminology, and criteria. It accounts for the *current importance* of the issue under consideration.

The aim. The *object* of this part of the series is outlining the impact of learners' age on the foreign languages acquisition basing on experimental data, with the *subject* being the language acquisition speed, quality of language acquisition, comparative acquisition efficiency depending on the period of exposure, adult-child and younger-children versus older-children's differences in acquisition. Its *aim* is to outline a general picture in relation to the abovementioned groups of factors. This is the fifteenth (see the previous issues of this journal [3]) in a series of articles focusing on the Pedagogical Grammar issue [1], where the author, basing on the theoretical models and research data, is planning to discuss the various aspects of the problem.

Analysis of current research and presentation of the main material. The existence of a hypothetical "critical age" for the foreign language acquisition was to be confirmed in experimental studies aimed at determining its upper limit. Such experiments can be divided into several groups, depending on the object of study: 1) language acquisition speed; 2) language acquisition quality; 3) short-period studies; 4) long-period versus short-period studies. In all groups of research, it is possible to compare adults with children or older children with younger ones.

Language acquisition speed. This type of investigations (see the review in [4; 5; 7; 11]) brought the following results. When comparing older and younger children, adolescents, and adults, it was found that older learners had an advantage over younger ones in the acquisition of those aspects of grammar (morphology and syntax) which are regulated by clear-cut rules. In general, adolescents did better than adults, but their advantage was effective only in short-time courses. In longer courses, this advantage typically ceased to be registered. In one study [24], no age-related difference in phonetics acquisition was observed. In another experiment [9], the analysis of the learning outcomes of 200 subjects showed that there may be age-related variations in the acquisition of different aspects of language. Children aged 11-15 made faster progress in mastering grammar, while 6-10-year-olds were better in learning phonetics.

In an experiment investigating the comparative success of older and younger children in a foreign language acquisition [8], the best results in both grammar and phonetics were shown by older children (7-9 years) (compared to children aged 4-6). The analysis of the three experiments above shows that there is a contradiction in terms of phonetics acquisition results: in the first experiment [24] no age-related variations were registered, in the second one [10] – the younger children prevailed, while in the third one [8] – the older children had the advantage, although in the third experiment the age of the “older” children was approximately the same as that of the younger ones’ in the second experiment. Some researchers [13] attribute it to the dissimilar time the subjects spent in the natural language environment in the different experiments. In experiment 3 [8] the subjects stayed in the target-language country for no more than 9 months, while in the first experiment [24] – for at least 12 months

Quality of language acquisition. The available research may be subdivided into various domains according to the aspects of language acquisition. In pronunciation, results suggest that the age at which language acquisition begins, is an important factor. Puberty (10-12 years of age) seems to be a turning point in the pronunciation acquisition. This conclusion was drawn following the analysis of four studies. The variable in experiment 1 [18] (three groups of subjects) was the age at which the participants started learning a foreign language (group 1: 6-10 years of age; group 2: 11-15 years; group 3: 16-20 years). Group 1 showed the best results, while groups 2 and 3 were not so good (almost 2 and 3 times less effective, respectively). Similar results were obtained in three other experiments. In experiment 2 [22], based on the research of immigrants in the USA and Israel, it was concluded that the time when the language learning starts is more important than the length of exposure. Similar results were obtained in experiment 3 [23] based on the study of Cuban immigrants’ speech. The best results were shown by subjects who arrived in the USA at the age of 1 to 6 years. This study also points to the role of the language learning duration (the optimal length of exposure turned out to be at least 5 years). Similar results were obtained in experiment 4 [14].

Longitudinal Studies. The experiments contrasting speed and quality of adult-child language acquisition compared two types of subjects: those who started language acquisition in childhood and the ones who began it in adulthood. The general conclusion seems to be that, in

the long run, type-1 learners always outperform those of type 2. In the study of Cuban immigrants' speech [23], the best results were shown by the subjects who arrived in the USA at the age of 1-6 years and stayed there at least for five years. The research established a direct correlation between the quality of pronunciation, on the one hand, and the age at which the foreign language acquisition started, as well as the length of exposure, on the other. The same study concluded that the age factor was not decisive and conclusive, as some subjects achieved good pronunciation at an older age.

Similar findings were registered in the studies of the development of the German determiner phrase in 60 child second-language (L2) learners of German between the ages of 3;5 and 7;0, which showed no contingency of child L2 performance and age factors, yet strong correlations with the length of exposure [10]. An analysis of the acquisition of finiteness by German child learners of French demonstrated that successive acquisition of languages exhibits similarities to adult second language acquisition in some aspects of inflectional morphology [15]. In another study [19], it was found that the time frame for Chinese-English bilinguals to catch up with monolinguals (4–6 years) depends on linguistic sub-domain, task difficulty and individual children's language environment. The study also showed that language environment factors shape not only early-stage but also late-stage bilingual development [19].

More categorical conclusions have been drawn in a number of other studies [18; 22]. According to one of them [22], the age of 12 can be a turning point in language acquisition. The authors suggested that the "critical age" imposes certain restrictions on the effective foreign language learning. S. Oyama [18] came to similar conclusions in two experiments. In the first of them, the author concluded that the "critical age" for mastering pronunciation is between 18 months and 12 years of age. Beyond this period, it is unlikely (or impossible) to attain the native speaker's level of pronunciation. The second experiment investigated the relationship between age and listening comprehension. The subjects were asked to aurally recognize 12 sentences which were accompanied by background noise. Each sentence was presented several times with the varying noise level, which was maximal at the first presentation and then decreased with each subsequent one. One point was awarded for correctly understanding a sentence on the first presentation, two points – on the second one, and so on. The points

were then summed up – the smaller the sum, the better the result. On the basis of the findings, it was concluded that the onset of language acquisition was the main predictor of comprehension success.

A similar conclusion has been made in the research of syntax acquisition [20]. The author strongly supports the existence of a “critical age”, placing its upper boundary at the age of 15. In the author’s opinion, beyond that age, it is impossible to acquire a foreign language at the level of a native speaker.

As mentioned above, children predominate over adults in longitudinal research. However, in short-time courses, adults had an obvious superiority over children, even in pronunciation, an area where younger ones are expected to perform better. One study [17] compared high school and college students, on the one hand, and elementary school students, on the other. The older students had a clear advantage. In another experiment [24], older students performed much better in the short run, but after a year of study, the younger ones prevailed. In the author’s opinion, the period between 3-15 years of age is optimal for the acquisition of pronunciation.

Having set this upper limit, the authors thereby refuted the neurophysiological hypothesis, according to which the “critical age” is related to lateralization and, accordingly, should end by the age of 5 (Krashen’s hypothesis) or by the age of 12 (Lenneberg’s hypothesis). Adults also showed higher results in listening comprehension experiments. These results were obtained using the “listen and do” technique [2]. Other authors [24], basing on the results in the Dutch proficiency test by the subjects with English as their native language, categorically deny the existence of any “critical period”. In this experiment, 3-5-year-old subjects showed poorer results as compared to the 12-15-year-olds.

Results of older and younger children’s acquisition in short-time courses. A comprehensive study [9] showed that children under the age of 10 master phonetics better, while 11-15-year-olds prevail in morphology and syntax. The author does not offer emphatic conclusions, cautiously noting that these differences can be explained by diverse factors, such as variability in intellectual development, individual characteristics, etc. According to the author, the concept of “critical age” might be wrong, but age-related differences can play a role in the foreign language acquisition. L. Ekstrand [6] conducted two experimental studies, following which he came to deny the validity of the “critical age” hypothesis.

The first experiment investigated the correlation between age, duration of stay in the country, and proficiency in the foreign language. The author concluded that the ability to learn a foreign language, as well as mental abilities in general, are age-related, i.e., they improve with age. Consequently, the language acquisition efficiency improves as well. According to the author, social and emotional adaptation does not depend on age. Another experiment investigated the correlation between age and the quality of language acquisition in the classroom (i.e., in formal teaching). Despite the differences in the experiment conditions in the first and second cases, the author came to the same conclusions: the theory of “critical age” is not valid. In the author’s opinion, even if there are series of more and less favorable periods for the foreign language acquisition, they may be related to the stages of brain development and the general intellectual ability instead of the doubtful “critical age”.

Conclusions. As it follows from the experimental studies analysis above, there is conflicting data regarding the existence of a “critical age” and its specific limits. Much of the data can be interpreted in various ways. Differences between adults and children, older children and younger children can be explained not only by the existence of the “critical age”, but also by other reasons. For example, some researchers [12] explain the advantage of older students by the fact that they have a better memory, which allows them to learn a large number of clichés with which they successfully communicate, even having a very limited supply of language material.

In its turn, the greater the input (volume of communication), the higher the efficiency of language acquisition. This assumption is confirmed by the results of experimental training of group A (see our previous articles in this journal), where the subjects made rapid progress at the initial stage of learning due to the active use of formulas and intermediate rules in the form of substitution tables. S. Krashen suggests distinguishing between two aspects of language acquisition: basic interpersonal skills (pronunciation, fluency, sociolinguistic competence) and cognitive/mental capacity, which includes the language acquisition ability, memory, general intellectual development, etc. The author believes that the main factor influencing the success of acquisition, is the second aspect. However, in his opinion, these two aspects may develop somewhat differently, with the first one happening earlier, which may be the reason for age-related differences [12].

Neufeld [16] also distinguishes between two levels of language. The first one includes a sufficient amount of functional vocabulary, as well as the basics of pronunciation and grammar, while the second level requires the ability to use complex grammatical structures and various styles of language. According to the author, all people, regardless of age, have an innate ability to acquire languages at both levels, but the second-level acquisition is determined by affective factors (primarily, motivation). Since those factors are much more favorable in child language acquisition, it explains the overall advantage of children.

According to Ellis [7], Neufeld's [16] theory, supplemented by Rozanski's [21] cognitive theory, can explain all known age-related differences in the foreign language acquisition. First, it explains why the sequence of grammatical structures acquisition (almost) does not change with age. The reason is the innate ability of both adults and children to reach the first level of the language [16] equally successfully. Adults do it faster thanks to better developed intellectual abilities [7].

In general, one might agree with the conclusions offered by D. Singleton [23] that, basing on the available data, it is hardly possible to state that there is any age boundary in human life beyond which the foreign language acquisition is impossible or difficult to any serious degree [23]. Experimental data, while contradictory, do not give rise to an unambiguous conclusion about the advantage of any age group in any aspect of language. In short-time courses, adults progress faster but on longer stretches, children close the gap and even outpace adults. There are quite a few differences in language acquisition between adults and children, older and younger children, but these differences are probably not due to the existence of a "critical age", but to the other factors discussed above. It is likely that an adult (in principle) can learn language just as effectively as a child if the factors that impede learning (strong instrumental and integrative motivation, absence of unfavorable affective factors, etc.) are eliminated. However, this assumption requires further research.

REFERENCES

1. Chernovaty, L. (1999). *Osnovy teorii pedagogicheskoi grammatiki inostrannogo yazyka* [The Basics of the Foreign Language Pedagogical Grammar Theory]. *Doctor of Sciences thesis extended abstract*. Kharkiv: V.N. Karazin Kharkiv National University [in Ukrainian].

2. Asher, J., Price, B. (1982). The learning strategy of the Total Physical Response: some age differences. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long, M. (Eds.). Rowley: Newbury House, pp. 76–83.
3. Chernovaty, L. (2016-2022). Pedagogical grammar as the framework of TEFL research. *Parts 1-14. Teaching languages at higher educational establishments at the present stage. Intersubject relations*. DOI: <https://doi.org/10.26565/2073-4379-2022-41-06>.
4. Chondrogianni, V., Marinis, T. (2011). Differential effects of internal and external factors on the development of vocabulary, tense morphology and morpho-syntax in successive bilingual children. *Linguistic Approaches to Bilingualism*. 1 (3), pp. 318–345. DOI: <https://doi.org/10.1075/lab.1.3.05c ho>.
5. Dulay, H., Burt, M., Krashen, S. (1982). *Language Two*. N.Y.: Oxford Univ. Press.
6. Ekstrand, L. (1982). Age and length of residence as variables related to the adjustment of migrant children, with special reference to second language learning. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long, M. (Eds.). Rowley: Newbury House, pp. 123–135.
7. Ellis, R. (1989). *Understanding Second Language Acquisition*. London: Oxford Univ. Press.
8. Ervin-Tripp, S. (1974). Is second language learning like the first? *TESOL Quarterly*. 8, pp. 111–127.
9. Fathman, A. (1982). The relationship between age and second language productive ability. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long, M. (Eds.). Rowley: Newbury House, pp. 115–122.
10. Hopp, H. (2011). Internal and external factors in the child L2 development of the German determiner phrase. *Linguistic Approaches to Bilingualism*. 1 (3), pp. 238–264. DOI: <https://doi.org/10.1075/lab.1.3.02hop>.
11. Klein, W. (1988). *Second Language Acquisition*. Cambridge: Cambridge Univ. Press.
12. Krashen, S. (1982). *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon.
13. Krashen, S., Long, M., Scarcella, R. (1979). Age, rate and eventual attainment in second language acquisition. *TESOL Quarterly*. 13, pp. 573–582.
14. Krashen, S., Seliger, H., Hartnett, D. (1974). Two studies in second language learning. *Kritikon Literarum*. 3, pp. 220–228.
15. Meisel, J.M. (2008). Child second language acquisition or successive first language acquisition? Current Trends in Child Second Language Acquisition: A generative perspective. Haznedar, B., Gavrusseva, E. (Eds.). *Language Acquisition and Language Disorders*. 46, pp. 55–58.
16. Neufeld, G. (1978). A theoretical perspective on the nature of linguistic aptitude. *International Review of Applied Linguistics*. 16, pp. 15–26.

17. Olson, L., Samuels, S. (1982). The relationship between age and accuracy of foreign language pronunciation. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long, M. (Eds.). Rowley: Newbury House, pp. 67–75.
18. Oyama, S. (1982). The sensitive period and comprehension of speech. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long, M. (Eds.). Rowley: Newbury House, pp. 39–51.
19. Paradis, J., Jia, R. (2017). Bilingual children's long-term outcomes in English as a second language: language environment factors shape individual differences in catching up with monolinguals. *Dev Sci*. DOI: <https://doi.org/10.1111/desc.12433>.
20. Patkovski, M. (1980). The sensitive period for the acquisition of syntax in a second language. *Language Learning*. 30, pp. 449–472.
21. Rosansky, E. (1975). The critical period for the acquisition of language: some cognitive developmental considerations. *Working Papers in Bilingualism*. 6, pp. 92–102.
22. Seliger, H., Krashen, S., Ladefoged, P. (1975). Maturational constraints in the acquisition of a native-like accent in second language learning. *Language Sciences*. 36, pp. 20–22.
23. Singleton, D. (1989). *Language Acquisition: The Age Factor*. Philadelphia: Multilingual Matters Ltd.
24. Snow, C., Hoefnagel-Hohle, M. (1982). The critical period for language acquisition: Evidence from Second-Language Learning. *Child-Adult Differences in Second Language Acquisition*. Krashen, S., Scarcella, S., Long M. (Eds.). Rowley: Newbury House, pp. 93–111.

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ПЕДАГОГІЧНА ГРАМАТИКА ЯК ФРЕЙМОВЕ ПОНЯТТЯ ДЛЯ ДОСЛІДЖЕНЬ У ГАЛУЗІ МЕТОДИКИ НАВЧАННЯ ІНОЗЕМНИХ МОВ. ЧАСТИНА 14. ВІК І ЗАСВОЄННЯ ІНОЗЕМНОЇ МОВИ: ЕКСПЕРИМЕНТАЛЬНІ ДАНІ

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У статті подано порівняльний аналіз різних груп даних (швидкість та якість засвоєння мови, ефективність засвоєння, залежність від періоду засвоєння, відмінності у засвоєнні між дорослими і дітьми, молодшими і старшими дітьми), отриманих у різних експериментах протягом значного часу. Як впливає з аналізу експериментальних досліджень, існують суперечливі дані щодо існування «критичного віку» для засвоєння іноземної мови та його конкретних меж. Значна частина даних може тлумачитися по-різному. Відмінності між дорослими і дітьми, старшими і молодшими дітьми можна пояснити не лише існуванням «критичного віку», але й іншими причинами. Перевагу старших школярів можна пояснити їхньою кращою пам'яттю, що дозволяє їм засвоювати велику кількість кліше, за допомогою яких вони успішно спілкуються, навіть маючи дуже обмежений запас мовного матеріалу. Загалом, спираючись на наявні дані, навряд чи можна стверджувати, що в житті людини існує якась вікова межа, за якою оволодіння іноземною мовою є неможливим або серйозно ускладненим. Експериментальні дані, хоча і є суперечливими, не дають підстав для однозначного висновку про перевагу будь-якої вікової групи в будь-якому аспекті засвоєння мови. На коротких відтинках дорослі прогресують швидше, але на більш тривалих – діти скорочують розрив і навіть випереджають дорослих. Існує чимало відмінностей у засвоєнні мови дорослими і дітьми, а також між старшими і молодшими дітьми, але ці відмінності, ймовірно, пов'язані не з існуванням «критичного віку», а з іншими факторами, які обговорюються в цій статті. Цілком ймовірно, що дорослі можуть засвоювати мову так само ефективно, як і діти, за умови усунення чинників, що перешкоджають їхньому навчанню (сильна інструментальна та інтегративна мотивація, відсутність несприятливих афективних факторів і т.д.). Однак це припущення потребує подальших досліджень.

***Ключові слова:** відмінності між дорослими і дітьми, засвоєння іноземної мови, критичний вік, обсяг часу на вивчення мови, швидкість засвоєння, якість засвоєння.*

СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

1. Черноватий Л.М. Основи теорії педагогічної граматики іноземної мови: дис. ... д-ра пед. наук: 13.00.02 / Харківський нац. ун-т ім. В.Н. Каразіна. Харків, 1999. 453 с.
2. Asher J., Price B. The learning strategy of the Total Physical Response: some age differences / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult*

- Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 76–83.
3. Chernovaty L.M. Pedagogical grammar as the framework of research in teaching foreign languages. Parts 1-14. *Викладання мов у вищих навчальних закладах освіти на сучасному етапі. Міжпредметні зв'язки*. Харків: ХНУ ім. В.Н. Каразіна, 2016-2022. Вип. 29-42. DOI: <https://doi.org/10.26565/2073-4379-2022-41-06>.
 4. Chondrogianni V., Marinis, T. Differential effects of internal and external factors on the development of vocabulary, tense morphology and morpho-syntax in successive bilingual children. *Linguistic Approaches to Bilingualism*. 2011. Volume 1. Issue 3. P. 318–345. DOI: <https://doi.org/10.1075/lab.1.3.05cho>.
 5. Dulay H., Burt M., Krashen S. *Language Two*. N.Y.: Oxford Univ. Press, 1982. 315 p.
 6. Ekstrand L. Age and length of residence as variables related to the adjustment of migrant children, with special reference to second language learning / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 123–135.
 7. Ellis R. *Understanding Second Language Acquisition*. London: Oxford Univ. Press, 1989. 327 p.
 8. Ervin-Tripp S. Is second language learning like the first? *TESOL Quarterly*. 1974. Vol. 8. P. 111–127.
 9. Fathman A. The relationship between age and second language productive ability / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 115–122.
 10. Hopp H. Internal and external factors in the child L2 development of the German determiner phrase. *Linguistic Approaches to Bilingualism*. 2011. Vol. 1. Issue 3. P. 238–264. DOI: <https://doi.org/10.1075/lab.1.3.02hop>.
 11. Klein W. *Second Language Acquisition*. Cambridge: Cambridge Univ. Press, 1988. 112 p.
 12. Krashen S. *Principles and Practice in Second Language Acquisition*. Oxford: Pergamon, 1982. 202 p.
 13. Krashen S., Long M., Scarcella R. Age, rate and eventual attainment in second language acquisition. *TESOL Quarterly*. 1979. Vol. 13. P. 573–582.
 14. Krashen S., Seliger H., Hartnett, D. Two studies in second language learning. *Kritikon Literarum*. 1974. Vol. 3. P. 220–228.
 15. Meisel J.M. Child second language acquisition or successive first language acquisition? / eds. Belma Haznedar and Elena Gavruseva. *Current Trends in Child Second Language Acquisition: A generative perspective. Language Acquisition and Language Disorders*. 2008. No 46. P. 55–58.
 16. Neufeld G. A theoretical perspective on the nature of linguistic aptitude. *International Review of Applied Linguistics*. 1978. Vol. 16. P. 15–26.
 17. Olson L., Samuels S. The relationship between age and accuracy of foreign

- language pronunciation / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 67–75.
18. Oyama S. The sensitive period and comprehension of speech / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 39–51.
 19. Paradis J., Jia R. Bilingual children's long-term outcomes in English as a second language: language environment factors shape individual differences in catching up with monolinguals. 2017. *Dev Sci*. DOI: <https://doi.org/10.1111/desc.12433>.
 20. Patkovski M. The sensitive period for the acquisition of syntax in a second language. *Language Learning*. 1980. Vol. 30. P. 449–472.
 21. Rosansky E. The critical period for the acquisition of language: some cognitive developmental considerations. *Working Papers in Bilingualism*. 1975. Vol. 6. P. 92–102.
 22. Seliger H., Krashen S., Ladefoged P. Maturational constraints in the acquisition of a native-like accent in second language learning. *Language Sciences*. 1975. Vol. 36. P. 20–22.
 23. Singleton D. *Language Acquisition: The Age Factor*. Philadelphia: Multilingual Matters. 1989. 421 p.
 24. Snow C., Hoefnagel-Hohle M. The critical period for language acquisition: Evidence from Second-Language Learning / eds. S. Krashen, S. Scarcella, M. Long. *Child-Adult Differences in Second Language Acquisition*. Rowley: Newbury House, 1982. P. 93–111.

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