

The effects of Age of Acquisition on an L2 learner's Ultimate Attainment

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Abstract: This paper focuses on generalizing different theories towards the age effect on the ultimate attainment of second language learners since it has long been a controversial topic in researchers' mind. In this paper, it gives evidences on cases in favor of the Critical Period Hypothesis, which claimed the loss of language learning ability after puberty and presents counter-evidences on the successful acquisition of second language in adult learners. It has reached into a conclusion that consists the viewpoint drawn on previous analysis and confirmed the possibility in ultimate second language attainment for late learners.

Keywords: Ultimate Attainment; Critical Period; Second Language Acquisition

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1 Introduction

Lenneberg developed the concept of critical period in 1967, suggesting the golden window to learn language is between age 2 and puberty^[11] after Penfield and Roberts brought up the idea in 1959. The reason for a critical period in language learning they concluded is because the irreversible lose of neural plasticity that prevents languages to be completely and successfully acquired after the end of that period^[17].

Over the years, there had been many controversies on the rationality of this concept. Many researchers are in favor of the Critical Period Hypothesis (or sensitive period or CPH) and consider language cannot be fully achieved once the period is ended. The evidences

presenting are becoming full-fledged, whether for pronunciation^{[2][8][14]} or grammatical performance^{[6][9][16]}. However, there are supporting evidence that find this concept at odds, with researchers giving examples suggesting the Critical Period does not end at age 12^{[7][10][13]}, and researches confirming ultimate attainment of L2 in adult learners^{[1][3][4][18]}. These evidences are stated as follows to suggest the role of the age factor on a second language learner's ultimate attainment.

2 Evidences for the Critical Period Hypothesis

Asher & Garcia tested the Biological Predisposition Hypothesis to see if children really succeed in L2 pronunciation better than adult counterparts^[2]. They studied on 71 Cuban immigrants between age 7-19 mostly who moved to the US five years ago and compared their pronunciation of English sentences to that of native American children. They found out that in the test, 68% of children aged 1-6 attained a near-native pronunciation while 41% of children aged 7-12 had a near-native performance. It is implicated that the highest possibility of acquiring a near-native pronunciation falls into those children who came to the States before 6 and the probability decreases if they came after 13 years old.

Scovel singled out pronunciation as the one part of language performance that is maneuvered by a critical period and he claimed that pronunciation is the only piece of language that requires a neuromuscular basis and will be hindered with the increase of age. He argued that L2 learners who first begin the L2 learning process after age 12 would never be able to attain the level of native speakers in terms of pronunciation due to the constraints of neuromuscular basis as brain matures

and will be effortlessly recognised as non-native L2 speakers^[14].

Selinker claimed that 95% of second language learners do not manage to achieve ultimate L2 attainment^[15]. It is further indicated that the lack of access to Universal Grammar (or UG) might become a barrier to L2 learning^[16]. Johnson & Newport advocated that learner's age has hampered the attainment of L2 UG for older learners. When testing the English ability of Chinese learners, they found out learners' ability to spot ungrammatical sentences with subadjacency features is negatively correlated with the age they are exposed to English, meaning the younger the Chinese learners are when first landed in the US, the better performance they have in terms of subadjacency^[9]. This conclusion is drawn on the comparison between learners aged 4-7 and adult learners.

Flege, Yeni-Komshian & Liu performed experiments on 240 native Korean (1-23 years) speakers in their English ability after their arrival in the States. Their pronunciation and knowledge of morphosyntax of English were tested and the results have close relation with the age of arrival (or AOA)^[8]. The foreign accent of participants grew stronger as the age of arrival increased while morphosyntax knowledge and grammaticality judgment test scores decreased, suggesting, with a mean arrival of 15 years, a direct decline in the performance of second language in the participants is visible in line with the increase of AOA.

DeKeyser implied that adults who don't have an excellent verbal analytical ability would not gain a near-native competence in L2^[6]. To confirm, he conducted a study with 57 adult Hungarian learners (mean age of 55) who lived around Pittsburgh and received little exposure to English before immigrated to the States. Multidimensional tests were performed on the subjects. He found that the participants who arrived in America before the age of 15 got most of the high scores in the tests. It is suggested that the critical period for language acquisition is more than a mere sensitive period.

3 Evidences in favor of late achievers

Snow and Höhle suggested a better attainment in initial success on older children (age 12-15) and adult L2 learners^[13]. In 1978, they used 51 native speakers of English who live in the Netherlands and are learning Dutch at school or at work (without formal language training). The participants are divided into beginner and advanced group, and their verbal intelligence and ability

are tested in this 1-year study. The finding reveals the fastest acquisition of all tested skills is among the group of 12-15 year-olds, followed by adult group, disagreeing the idea that the prime period for SLA exists between age 2-12. The result is further proved by Krashen, Long and Scarcella as they provided evidence for several overviews including a faster learning rate in syntax and morphology adults or older children have than that of younger children^[10].

Birdsong gave exceptions on the overgeneralization of CPH. He performed French grammaticality judgment tests on 20 native French speakers and 20 native English speakers who were highly proficient in French, with the former an average age of 35-40, the latter 40. In the test results, it showed even when the learners are over the period of puberty, they can still attain similar linguistic items and native norms just like native speakers did with early arrival in the country of the target language^[3]. These findings are completely opposite to Coppeters' finding that negates the possibility of ultimate attainment in SLA and native-like competence by late-learners^[5].

In a research conducted by Asher and Price, it further analysed and compared the listening comprehension outcomes of L2 learning between kids and grownups^[1]. The children consisted second, fourth, and eighth graders (96 in total) whereas the adult group had 37 undergraduate students. None of them had received any previous training or input in Russian and they all took standardised training under the same condition during the experiment. The participants were observed and divided into "act-act" or "observe-act" group. It is found out that adult learners achieved almost full score in the comprehension test with the 8 year-old learners achieved the lowest. Moreover, adults outperformed children regarding the complexity of language and listening smoothness.

Fathman conducted an experiment on 200 children between ages 6-15 from various language backgrounds and were L2 English learners in a public school in the US. The participants have been learning English in immersion programs and the oral output test included English morphologic, syntactic and phonologic features. When analyzing the results, she observed that older children has better grasped on L2 morphology and syntax in comparison with young children, and the rate of such acquisition exceed that of the young children^[7]. The results support the conclusion made by Asher and Price.

Bogaerts backed up a possibility that the possible successful attainment for late L2 learners in pronunciation^{[4][12]}. The study consists three groups of subjects, among which Group 1 was composed of 10 native speakers of English with an average age of 27 as controls, Group 2 11 native Dutch speakers (with an average age of 42) with a high proficiency in English and 20 native Dutch speakers in Group 3 who share different levels of English proficiency. In Group 2, the highly advanced English learners received negligible amount of English input before high school and it is not since they entered university and majored in English did they all receive intensive instruction in English pronunciation. Most participants in group 2 spent a year in British university and all group 2 participants attach great importance to their pronunciation. All participants are required to say numerous English speech samples aloud and are scored by 13 middle-age native speakers in British English. The results show that native English speakers received top scores in pronunciation from 4.67 to 4.94/5 whereas advanced learners also achieved scores ranging from 4.18 to 4.93 with a mean score of 4.61^[4]. This finding suggests the possibility of ultimate attainment for late-learners in pronunciation.

White and Genesee also gives positive evidence on the near-native attainment by older L2 learners after having been given intensive instruction^[18]. The 89 subjects they examined have an average age of 29 (range from 16-66), including Canadian born and immigrants who are both picking up English as a second language and are divided into near-native group and non-native group. Grammaticality judgment tasks including pronunciation, morphosyntax, vocabulary and the native-like impression are measured to test their L2 competence. The results showed that the dissimilarities in language form choosing between native speakers and near-native learners are small, and older L2 learners could attain the competence to a native-like level even when the age of first intensive exposure to the second language is older than the age of 16.

4 Conclusion

Based on the evidence, we can conclude that the first few years in human life are essential in language learning, which has been proved by many first language acquisition cases. For second language acquisition, however, it is partial to attribute the ultimate attainment solely to CPH since age is not the only decisive factor as L2 competence is measured comprehensively,

not only by testing the pronunciation or grammar competence. This is supported by many cases of successful late learners.

What should be noticed in late learners is the length of intensive study, the immersive language environment they are in and the self-awareness and efforts they put into it since most late achievers received intensive input during their learning in their second language performance.

The studies against the CPH suggest that the possibility that language learning, especially in grammar, does not end at puberty and it is likely to have a more functioned and matured cognition after age 12.

To sum up, the ultimate attainment for L2 late learners is possible, and age becomes insignificant when other factors such as the length of training, language environment, the mentality of learners, which all suggest a positive progress in ultimate L2 attainment.

References

- [1] Asher, J., & Price, B. (1967). The Learning Strategy of the Total Physical Response: Some Age Differences. *Child Development*, 38(4), 1219-1227. <http://dx.doi.org/10.2307/1127119>
- [2] Asher, J., & Garcia, R. (1969). The Optimal Age to Learn a Foreign Language. *The Modern Language Journal*, 53(5), 334-341. <http://dx.doi.org/10.2307/323026>
- [3] Birdsong, D. (1992). Ultimate Attainment in Second Language Acquisition. *Language*, 68(4), 706-755. <http://dx.doi.org/10.2307/416851>
- [4] Bogaerts, T. (1999). Ultimate attainment in L2 pronunciation: The case of very advanced L2 learners, *Second language acquisition and the Critical Period Hypothesis* (pp. 133-159).
- [5] Coppieters, R. (1987). Competence Differences between Native and Near-Native Speakers. *Language*, 63(3), 544-573. doi:10.2307/415005
- [6] DeKeyser, R. (2000). The Robustness of Critical Period Effects in Second Language Acquisition. *Studies in Second Language Acquisition*, 22(4), 499-533.
- [7] Fathman, A. (1975). The Relationship Between Age and Second Language Productive Ability. *Language Learning*, 25(2), 245-253. <http://dx.doi.org/10.1111/j.1467-1770.1975.tb00244.x>
- [8] Flege, J., Yeni-Komshian, G., & Liu, S. (1999). Age Constraints on Second-Language Acquisition. *Journal Of Memory And Language*, 41(1), 78-104. <http://dx.doi.org/10.1006/jmla.1999.2638>
- [9] Johnson J. S., & Newport E. L. (1991). Critical period effects on universal properties of language: The status of subadjacency in the acquisition of a second language. *Cognition*, 39, 215-258. [https://doi.org/10.1016/0010-0277\(91\)90054-8](https://doi.org/10.1016/0010-0277(91)90054-8)
- [10] Krashen, S., Long, M., & Scarcella, R. (1979). Age, Rate and Eventual Attainment in Second Language Acquisition. *TESOL Quarterly*, 13(4), 573-582. <http://dx.doi.org/10.2307/3586451>

- [11] Lenneberg, E. (1967). The Biological Foundations of Language. *Hospital Practice*, 2(12), 59-67. <http://dx.doi.org/10.1080/21548331.1967.11707799>
- [12] Long, M. (1990). Maturation constraints on language development. *Studies in Second Language Acquisition*, 12, 251-285. <https://doi.org/10.1017/S0272263100009165>
- [13] Snow, C., & Hoefnagel-Hohle, M. (1978). The Critical Period for Language Acquisition: Evidence from Second Language Learning. *Child Development*, 49(4), 1114-1128, <http://dx.doi.org/10.2307/1128751>
- [14] Scovel, T. (1988). *A time to speak: A psycholinguistic inquiry into the critical period for human speech*. Newbury House Publishers.
- [15] Selinker, L. (1972). Interlanguage. *IRAL-International Review of Applied Linguistics in Language Teaching*, 10(1-4), 209-232.
- [16] Singleton, D. M., & Lengyel, Z. (1995). The age factor in second language acquisition: A critical look at the critical period hypothesis. *Multilingual Matters*.
- [17] Penfield, W., & Roberts, L. (1959). *Speech and brain-mechanisms*. Princeton: Princeton University Press.
- [18] White, L., & Genesee, F. (1996). How native is near-native? The issue of ultimate attainment in adult second language acquisition. *Second language research*, 12(3), 233-265.