

Age Effects on Syntactic Control in
Second Language Learning

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Abstract

This paper explores the effects of age on second language acquisition in adolescents, ages 11-14. It is certain that at different ages, second language learners will acquire language differently. I will address the Critical Period Hypothesis in relationship to adolescents aged 11-14 and critically examine the hypothesis that second language learners who fall in this age group are not physiologically disadvantaged language learners. In fact, I hypothesize that second language learners between the ages of 11-14 are at a more advantageous age for second language syntax acquisition than learners 6-10. I will test this hypothesis by examining 8 6-7 year olds, 8 8-10 year olds, and 8 11-14 year olds. The subjects will be tested individually by through grammaticality judgment test every two months. Subjects will be given a test of 60 sentences varied in pronoun order, tense, and subject-verb agreement. Some sentences are erroneous and some are correct. The subjects will be asked if each sentence is correct based on syntax; their answers will be recorded and analyzed. All individuals are Spanish-English dual language students. I expect to find that the 11-14 age group will achieve syntactic control more rapidly than the 6-7 and 8-10 year olds which will not necessarily negate the Critical Period Hypothesis in its entirety, but rather take a critical look at the hypothesis and aggregate evidence to support that second language learners between the ages of 11-14 are at a cognitive advantage for faster second language acquisition.

Introduction

Age effects on second language acquisition is a much discussed topic; it is a fact that children and adults have different cognitive processes and therefore they acquire a second language differently and at different rates. It is also a common belief that adults are worse

at learning a second language than children. Some researchers argue that second language learners will acquire language best during their critical period. Biolinguist Eric Lenneberg (1967) hypothesized that individuals past a certain age (post-pubertal) are worse at learning a language than younger individuals due to the lateralization of the brain. However, Crawford and Krashen (2007) refute that human biology does not play this kind of a role in second language learning. In this paper, I will address the Critical Period Hypothesis in relationship to adolescents aged 11-14 and suggest that second language learners who fall in this age group are not physiologically disadvantaged language learners. In fact, I hypothesize that second language learners between the ages of 11-14 years old will gain more rapid syntactic control in a second language learning over pre-pubescent, 6-10 year old second language learners. I will test my hypothesis through a series of grammar tests given to the test subjects who are categorized into three different age groups: 8 6-7 year olds, 8 8-10 year olds, and 8 11-14 year olds. It is important to note that all individuals researched are Spanish- English dual language students. Subjects will be tested individually through a series of 60 sentences testing second language syntax. These sentences will be categorized into three different sections: tense, pronoun order, and subject-verb agreement. Individuals will be asked to determine whether the sentence is correct or incorrect based on an oral response. The subjects will be tested every two months over the span of one school year. The findings I suspect to obtain are more rapid syntactic control over a second language by the 11-14 year old age group.

The motivation behind this particular research study is a personal one involving bilingual education. The argument being for an extension or redesign of the current dual

language program in practice at the elementary school which begins in kindergarten and ends when the students complete 5th grade. When our bilingual students continue to their respective junior high schools, not only is there no dual language program, but there is not an adequate continuation of bilingual education and practice in Spanish instruction. Students in the dual language program break up their day, 50% of their instruction is in Spanish and 50% of instruction is in English. Upon entering junior high, these students are offered one meager 40 minute period of Spanish. After dedicating 6 years to bilingual study, it seems unfair to cheat these children out of furthering their bilingual education. The purpose of this paper is to study the cognitive advantages that junior high school students have, ages 11-14, in acquiring a second language and so that redesign is encouraged of the current dual language program in practice. I will present a review of relevant literature concerning research of age effects on second language acquisition, outline methodologies for my own research, and conclude by projecting findings with a discussion.

Literary Review/ Background

There are few studies that show older children are faster second language learners than younger children, however, a longitudinal study was conducted by Snow and Hoefnagel-Hohle (1978) that tested native English speakers of different ages learning Dutch as a second language. Age groups included 3-5 year olds, 6-7 year olds, 8-10 year olds, 12-15 year olds and adults beyond the age of 15. The subjects at the time were living in Holland and were tested 3 times during their first year there. Results showed that test subjects in the 12-15 age group made the most rapid progress throughout their first few months of

learning Dutch. Subjects were tested individually at home or at school for approximately an hour and a half. Sessions were tape recorded for further judgment and scoring. Some of the tests included pronunciation, auditory discrimination, morphology, and sentence judgment. While testing pronunciation, subjects were given words through spontaneous, or immediate auditory model. Subjects were also tested on the imitation model where the native speaker would give a word to the subject and the subject would then repeat it back. Secondly, subjects were tested on auditory discrimination where subjects were given a Dutch word and had to point to the correct picture for the word identification. These results reflected subjects' knowledge of vocabulary. Morphology was tested to analyze morphological control the subject had over Dutch rules. And finally subjects were tested in sentence judgment and read 14 pairs of sentences where the subject was to determine which of the pair was correct and which was incorrect.

Results

After the first test, Snow and Hoefnagel-Hohle found that there were significant age differences recorded and overall, except for the pronunciation test, all tests favored the 12-15 age group in proficiency. The order of most proficient to least is as follows: 12-15, adult, 8-10, 6-7, and 3-5; proficiency decreasing with age of subject. All of the tests revealed a consistent pattern: the most rapid acquisition was made by the 12-15 year olds and adults in the first months of learning; the adolescents obtained near native-like performance extremely quickly within their first few months of learning Dutch. The most important finding is that the 3-5 year olds performed continually poorer than the older groups on all tests and the 12-15 year olds demonstrated the most rapid acquisition for all skills tested, thus refuting that younger language learning in the age window of 2-

11 is the most optimal time for learning. Overall, the results of the study conducted by Snow and Hoefnagel-hohle do not support the Critical Period Hypothesis because the fastest second language acquisition occurred in subjects 12-15 years old.

DeKeyser (2000) reported a study done by Bialystok (1997) that accounted briefly on two studies of L2 acquisition as a function of age, one involved university students studying L2 French at different ages and one involving native speakers of Chinese who had immigrated to Canada and learned L2 English at different ages. In each case, results showed that those subjects who learned L2 at a later age (after 15) did better than the younger learners and Bialystok took this as evidence of the Critical Period Hypothesis. Furthermore several studies have documented rate advantages for older learners (Ekstrand, 1976; Krashen, Long, & Scarcella 1979; Snow & Hoefnagel-Hohle, 1978).

It is also important to recognize that older language learners are at an advantage because they are able to benefit from positive transfer of prior knowledge from their first language (L1) to their second (L2). According to Ervin-Tripp (1974) having already learned a language makes the task of learning a second one easier, and more so when the L1 and L2 are more closely related, like Dutch and English or Spanish and English, fewer structures have to be acquired making the learning process quicker. Poullisse (1997) makes the point that second language learners use communication strategies in second language acquisition and are typically very successful problem solvers, which creates the link between transfer of knowledge between a learner's L1 and L2. Lessow-Hurley (2007) theorizes that a student with a strong base in their first language facilitates second

language acquisition; the older the learner, the more knowledge to be positively transferred.

Methods

Subjects

Thirty- two Spanish-English dual language students will be selected to participate in the study but whose native language is English and where no other language is spoken in the home, and have had no exposure to any other languages. All subjects will be beginners of second language learning; in their first year in a dual language program. Subjects selected will be 8 6-7 year olds, 8 8-10 year olds, and 8 11-14 year olds. Students within the 6-7 and 8-10 age groups all attend the same elementary school whereas students 11-14 years of age attend the same junior high school. There will be an equal number of male and female subjects and all participants are volunteers.

Testing

Subjects will be tested using age appropriate grammaticality judgment tests. It will be a series of 60 Spanish sentences with 3 separate categories containing 10 pairs of sentences each for a total of 60. The categories will consist of tense, subject-verb agreement, and overall word order. One sentence in the pair is correct and one sentence in the pair is incorrect. For example:

Tense

- A). Ayer, yo pongo la mesa.
- B). Ayer, yo puse la mesa.

Subject-Verb Agreement

- A). Mi mamá va a preparar la cena a las 5:00.
- B). Mi mamá vas a preparar la cena a las 5:00.

Order of Pronouns

- A). Mi hermano me dio lo.
- B). Mi hermano me lo dio.

The sentences will be read aloud to the test subject and they are required to verbally indicate whether the sentence is correct or incorrect. Subjects will be tested individually and privately at school to ensure a low-stress environment. They will also be tested in 2-month increments beginning after their first two months of second language instruction. This study will take place over the course of 1 full school year so the subjects will be tested a total of 4 times. Data will be collected and analyzed to study the age effects on the speed of syntactic control in second language learners L2.

Conclusion

Results

Data will be collected from each individual according to their verbal responses of the grammaticality judgment test. This data will be analyzed from each age group by calculating the number of correct responses from each individual into a percentage. After data collection and analysis for each individual, results will be graphed on a scatter plot and further analyzed into age groups to determine positive or negative effects of age on second language learning. The results I expect to find will be significant syntactic

improvement and the most rapid second language acquisition occurring the 11-14 year old age group for several reasons. I believe at this age, students are developing problem solving skills and cognitive processes specifically because of their strength in explicit learning, that between the ages of 6-10, children may not possess or are not cognitively capable of. And according to Bley-Vroman's (1988) Fundamental Difference Hypothesis, adults (in this case, the older children) rely on their explicit, analytic, problem-solving capacities for morphosyntactic competence. Secondly, because these test subjects are older, they now have 11-14 years of knowledge to transfer from English to Spanish. Not to mention, this group of subjects already have strong proficiency in their native language literacy, or at least foundation, that the younger subjects (ages 6-10) may not yet have. And according to Krashen (2007), strong native language literacy speeds up development and literacy in a learner's second language and therefore further supporting rapid second language acquisition. I do hypothesize, however, that speed of acquisition for all learners will slow towards the end of the school year, or rather by the end of testing.

Discussion

I do not believe the results of this study will negate nor disprove the Critical Period Hypothesis as that would be lofty but rather look at it through a more critical lens, which was a major goal of mine. The initial inspiration of this study was to influence a redesign of the current dual language program in practice at the district where I am a dual language Spanish teacher. Because the elementary program ends in the students' 5th grade year, an extension of the program to the junior high level only seems necessary. These

children who have worked for 6 years in becoming bilingual are at a great risk of second language attrition. Many possible solutions present themselves in an extension program, however the most certain one is that there is a continuance of bilingual education for these students. The findings of this study will hopefully prove the necessity of a longer bilingual program at the junior high level, as the results of this study will show that second language learners at this age (11-14 years) are not only fully capable, but can excel in second language acquisition.

Syntax was the focus in this study because although language performance and speaking skills are, in my opinion, the most important aspect of L2 communication, the focus at this age and level in foreign language instruction is grammar. This study was to prove that adolescents, specifically between the ages of 11-14 can be leaders in second language learning, and it was proved in the Snow and Hoefnagel-Hohle study that that is exactly what they were: leaders in the rate of second language acquisition, as they were the highest scorers across the board in all skills tests. Many have the misconception that all children “are such good language learners” or “they hear it once, and they get it” which may be the case with certain individuals in some skills, but this study will prove that junior high students have cognitive advantages over younger learners such as their native language literacy foundation and proficiency, positive transfer of knowledge, and their forte in explicit learning abilities.

The value placed on bilingualism is great in our society but could hold far more weight. As a dual language school, we hold a piece of that responsibility, and not simply by beginning the process in our district, but ending it in our district at junior high graduation. This study is a passionate one. It aims to give evidence that language is not

only acquired quickly and easily at young ages, but rather advantageous and powerful in a second language learner's adolescence. Although Lenneberg's Critical Period Hypothesis makes interesting and valid arguments, I feel an uneasy basis judgment of a child's education on this hypothesis. I feel the need to further examine this specific age window so that these, potentially remarkable second language learners who have shown a successful range of skill, are not overlooked in our educational system.

References

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