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THE EFFECT OF AGE OF ACQUISITION ON AGE-APPROPRIATE LANGUAGE USE

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Abstract:

This paper details a pilot experiment used as a preliminary study on the effect of age of acquisition on the use of Japanese by advanced learners. The study compares students who began learning Japanese during high school to those who began learning after the age of twenty. The data comes from a written test which focuses on vocabulary as an indicator of age-appropriate language use. Other factors, such as gender, years of study and length of immersion are considered. This study suggests that in terms of writing ability, subjects who began learning later in life had some advantages, and subjects who began learning earlier had other advantages.

In an effort to understand where language resides in the minds of humans, researchers have conducted a variety of studies looking at first and second language learners (White and Genesee 1996,). They found that, in comparison to other biological phenomena, there may not be a critical period for language acquisition (Snow and Hoefnagel-Höehle 1978). Based on comparative biology and concrete evidence, researchers concluded that acquiring a first language must be done within the first few years of life to reach full competency. The question of a critical period for second language acquisition, however, has not been altogether agreed upon. One might question whether fluency in a second language can be obtained after puberty. Some say there is a sensitive period during which and before which the second language learner may still hope to gain fluency (Emmorey, Olsen and Samuels 1973). Others consider fluency in a second language a possibility open to all but only manifest in a few. Interestingly, no researchers claim a definitive age after which fluency in a second language is impossible.

White and Genesee's 1996 study on adult second language acquisition found that some adult learners did well on tests of subjacency. However, Johnson and Newport (1991) found that native-like mastery of subjacency declines after

age seven. Long's 1990 paper on maturational constraints reviews the literature, saying that adults acquire a second language faster than children and even older children have an initial advantage of over younger ones. Yet in the long run, children seem to outperform adult second language learners. Harley, Howard and Hart's 1995 study found that older learners had an advantage over younger second language learners in distinguishing meaning based on prosodic features. Snow and Hoefnagel-Höehle's 1978 study, "The Critical Period for Language Acquisition: Evidence from Second Language Learning," found that, at least in the short term, older learners did better. They considered the results of their study conclusive: "a critical period extending from age 2 to age 12 does not exist" (108). Neufeld's 1978 study concerning prosodic features and adult second language learning proves that it is possible for young adults to master the sound patterns of a foreign language, but the study does not lend insight into whether this is possible in a natural setting or over a long period of time. Olson and Samuels' 1973 study on age and foreign language pronunciation found that teenage and college age subjects did better than elementary school age subjects on pronunciation in the short term.

The evidence provided in the above-mentioned studies provides pieces, but not the final version of a complex puzzle. Remaining questions include: Why are there differences for different aspects of language acquisition? Why is there a difference between short and long term acquisition? And, perhaps most significantly: Why do the differences in degree of success between contrived learning situations and real L2 acquisition seem to be so enormous? The study discussed in this paper looks at yet another aspect of second language learning and compares two age groups that some would consider to be combinable and therefore both past the critical period. Its purpose is to provide yet another piece of the puzzle.

The goal of this pilot study is to add evidence for or against the critical/sensitive period hypothesis. Some studies have looked at teenagers beginning to learn a second language as opposed to those beginning as adults. If the critical period ends at puberty, we expect to find no difference between these subjects. If there is a sensitive period which ends around the seventeenth or eighteenth year, the subjects who began learning Japanese at the start of High School should have an advantage over the later learners. If the data show that late learners have more age-appropriate ability than the earlier learners, we have evidence that advanced cognitive maturity/ability dictate ability in second language acquisition.

Method

The experimental subjects for this study were all capable students in a third

year university-level Japanese class. A significant amount of essay writing is prerequisite to success in this class. Three of the subjects began learning Japanese at the age of twenty. Four of the subjects began learning in High School between the ages of fourteen and sixteen. All but one of the subjects had spent some time in Japan. The control group consisted of three native speakers of Japanese, around the same age as the experimental subjects. All subjects were asked to take around five minutes to write about their idea of a perfect Saturday.

The essays were given scores based on the number of words written and three complexity scores. Each word in an essay originally earned a 1, 2, or 3 based on the level of difficulty of the word. An item learned during one's typical first year of study and used with high frequency earned the core of basic; all others earned the score of advanced. The number of each level of words found in an essay was computed. The average number of words per essay for each of the three groups tested was then computed. The average number of words in each level of difficulty was then computed for each group. Because during actual scoring it became difficult to ascertain whether a word should be considered level 2 or level 3, words were given one of two scores in the final analysis. They were considered to be either basic or advanced vocabulary items. The final relevant scores then, became the individual subjects' number of words and a ratio of basic to advanced words. Then, the averages for the three groups were compared.

Results

The subjects who began learning at the age of twenty wrote longer essays on average than the subjects who began learning Japanese earlier; however the native speakers wrote more than the late learners. Although the late learners had spent more time in Japan, comparing length of stay as a variable for all subjects suggests that it is not a predicting factor. Comparing the ratio of advanced to basic words, subjects who began learning earlier had more advanced words regardless of the length of their essay. Both non-native groups has a lower ratio of advanced to basic items in their essays compared to the ratios for native speakers. The following tables display relevant data and group averages respectively.

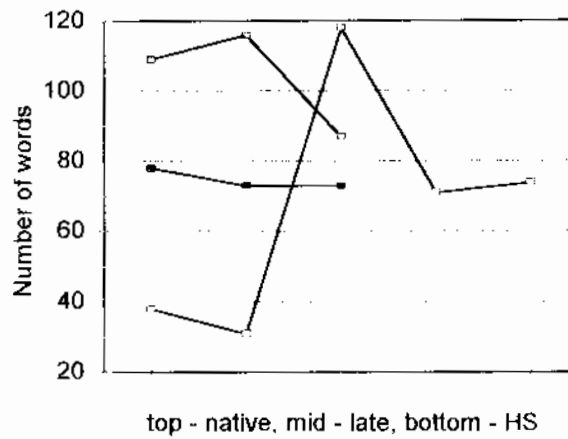
Subjects	Gender	Age began learning	Age went to Japan	Weeks immersed	Years spent learning	Number of words in essay	Ratio of basic to advanced items
Native	female	-	-	-	-	109	.42
Native	male	-	-	-	-	116	.42
Native	female	-	-	-	-	87	.71

HS	male	14	16	2.5	7	78	.37
HS	female	15	17	3	4	73	.48
HS	male	16	18	5	5	73	.39
HS	female	14	17	8	6	38	.5
HS	male	14	0	0	5.5	31	.35
Adult	male	20	20	104	3	118	.38
Adult	male	20	22	4	3	71	.25
Adult	male	20	20	196	2	74	.31

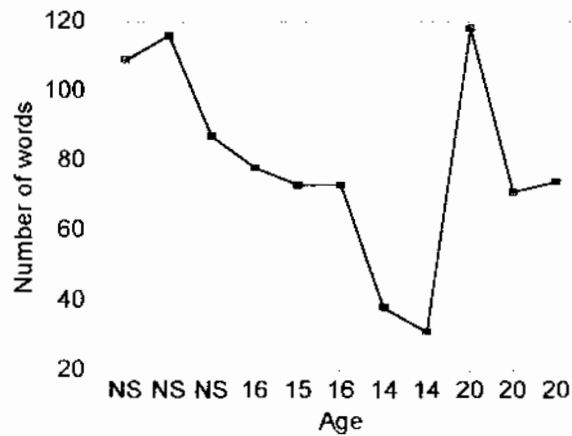
Groups	Avg. # of words/ Std. Dev.		Avg. Ratio/ Std. Dev.	
Native Speakers	104	8.7	.51	.09
High School learners	58.6	9.9	.42	.03
Adult learners	87.7	15.2	.31	.04

If these results can be generalized to all Japanese speakers and learners, then native-like essays will consist of around one hundred words, half of which should be at an advanced level and half of which should be basic vocabulary items, including prepositions, pronouns and simple verbs. If this is an adequate description of native-like performance then the data show, like much of the other data on second language acquisition, that late learners seem to have strengths in some areas but weaknesses compared to earlier learners in others (Fathman 1975, Harley 1984). Perhaps the late learners in this study, the majority of whom had significant immersion time, were more comfortable writing an essay without concern for word choices. Conversely, those who had not only spent more time learning but also less time immersed may have focused on using their knowledge of advanced vocabulary items, not on the length of their essays. The results clearly do not support an age effect, but suggest the need for further research endeavors to clearly delineate what has occurred in this study.

The following chart displays the variation in number of words per essay for all subjects, with the top line representing the native speakers, the middle shorter line representing the late learners and the longest line representing the High School learners:



The following chart shows a comparison between the length of essay and the age of the subject:



Discussion

Several issues arose during the conducting of this research which make the evidence provided by the results somewhat questionable. The number of subjects in each group is too small to provide reliable results. Twenty to thirty subjects in each group would be a minimum requirement for conclusive results. Furthermore,

the subjects were instructed to write for about five minutes, but most subjects took between seven and twelve minutes to complete their responses. This may be one cause of variation in the lengths of the essays. Being a non-native speaker of Japanese, my judgements of the difficulty of vocabulary items was based on my perception of when they would have been learned and how often they are used by native speakers every day. This method may not reliably judge differences in proficiency. Given the consistency of my judgements, and in light of a probable difference in approach on the part of two groups of experimental subjects, this study yields two conclusive findings:

1. A combination of a) years spent learning and b) method of learning or exposure to the target language affects different facets of expression of that language.
2. Differences in L2 proficiency do not seem predictable based solely on a difference between the learner beginning study as a young teenager (14-16) versus a young adult (20).

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