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Critique of an empirical research study on second language acquisition

**Jilani S. Warsi
ID # 611 16 8375**

**Critical Period Effects in Second Language Learning:
The Influence of Maturational State on the Acquisition
of English as a Second language**

Jacqueline S. Johnson and Elissa L. Newport

1.0 Introduction

Since the late sixties, a considerable amount of research has been conducted in the field of second language acquisition. The complicated process of language learning has attracted continuing interest from researchers in the disciplines of English, Linguistics, Psychology, and Education. Such interest has led to the emergence of second language studies as an area of professional emphasis within academic communities taking into consideration both teaching and learning perspectives. The field of second language acquisition has become a vibrant field with a literature of its own, frequently using explorations in first language as a starting point.

1.1 Critical Period Hypothesis

One of the theories that has caused a great deal of controversy among scholars is the critical period theory. Lenneberg (1967) hypothesized that a critical period- extending from infancy until puberty- for language acquisition exists, and that language could be acquired only within this period. Opinion is sharply divided between those who support Lenneberg's critical period hypothesis and those who believe that there are other factors that aid or impede language acquisition. In their study "Critical Period Effects in Second Language Learning: The Influence of Maturational State on the Acquisition of English as a Second Language", Newport and Johnson (1989) raise an interesting question as to whether or not the hypothesized critical period extends to second language acquisition.

The researchers investigate the validity of Lenneberg's claim that competence reaches its peak during a critical period and then declines. However, in this particular study, their research question is that second language acquisition, after the acquisition of

a first language, is maturationally constrained. From an empirical perspective, this is an interesting and valid question to ask. To address this intriguing question, Newport and Johnson (1989) state two versions of the critical period hypothesis, namely "the exercise hypothesis", and "the maturational state hypothesis." According to "the exercise hypothesis", humans have a superior language learning capacity early in life. Depending on whether or not they exercise this capacity during this period, it will either disappear or decline with maturation. However, if they exercise their language learning capacity, it will remain intact. According to "the maturational state hypothesis", the superior capacity for acquiring languages at an early period either disappears or declines with maturation.

On the surface, these hypotheses may appear similar, but they have significantly different implications for second language acquisition. According to "the exercise hypothesis", adults should be better second language learners because they have already acquired greater skills in their first language. According to "the maturational state hypothesis, children should be better second language learners, since their superior language learning capacity has not declined. These hypotheses have important ramifications for the argument that children are better second language learners than adults.

1.2 Research Questions

Studies in the field of second language acquisition research show that adults with delayed second language lack cultural identification with the host country, and are more self-conscious. They also somehow fail to achieve the attitudinal and affective state. Presumably, age seems to play a crucial role in the learning of a second language.

Realizing the effect of age on second language learning, Newport and Johnson (1989)

address the following questions in their research:

- (1) Is there an age-related effect on learning the grammar of a second language?
- (2) If so, what is the nature of this relationship? What is the shape of the function relating age to learning and ultimate performance, and where (if anywhere) does the relationship plateau or decline?
- (3) Can experimental or attitudinal variables, separately or together, explain the effects obtained for age of learning?
- (4) What areas of the grammar are the most and least problematic for learners of different age group? (Newport and Johnson, 1989)

1.3 METHOD

Subjects

It is obvious that to find convincing answers to these questions, the methodological framework should be correlational, drawing on empirical evidence. Since the research involved a comparative perspective, both young and adult subjects were examined to determine whether age played a crucial role in the acquisition of their second language. The researchers selected 46 Chinese or Korean speakers who varied in age. Subjects were divided into two groups, namely the "early arrivals," and the "late arrivals." The "early arrivals" were those who had arrived in the United States before the age of 15. Subjects in the "late arrival" group were those who had arrived in the United States after the age of 17. Both the "early arrival" and the "late arrival" subjects were chosen from a pool of faculty and students at the University of Illinois.

1.4 Variables

To control both social and linguistic variables, the researchers required that their subjects live in America for at least three years prior to the test and that English be their second language. However, they didn't control an extremely important linguistic variable

which could have been detrimental for the purposes of this study. Before these subjects arrived in the United States, they had had approximately 2-12 years of mandatory English instruction in their country. In addition, even though the researchers claim that Chinese and Korean languages were chosen because of their typological dissimilarity to English, it could be problematic in that possible variability in performance would be difficult to relate to the source of transfer; the linguistic variable-the subjects' native language-was not controlled.

1.5 Procedure

Subjects were tested on 12 rule types that represented the most basic aspects of English sentence structure. Four rule types dealt specifically with English morphology: past tense, plural, third person singular, and present progressive. The remaining eight rule types were determiners, pronominalization, particle movement, subcategorization, auxiliaries, yes/no questions, wh-questions, and word order. In each rule type both grammatical and ungrammatical sentences were presented, and subjects were asked to choose the grammatically correct ones. In other words, the test was designed to determine their grammaticality judgment. All the rule types were randomized to preclude isolation, and no run of grammatical or ungrammatical sentences in each section was longer than four.

The justification for choosing these rule types was the researchers' claim that both Chinese and Korean are typologically dissimilar to English. However, there is a major flaw in this claim. Properties of the first language may not necessarily give a deep insight into problem areas in a second language. Certain performance difficulties may

not have any bearing on the presence or absence of certain grammatical structures in the first language.

Some researchers have argued that age effects are secondary by-products of attitudinal variables such as motivation to learn a language, level of self-consciousness, etc. Since attitudinal variables could affect second language learning, Newport and Johnson gave the subjects questions related to cultural identification and self-consciousness. These questions were designed to determine the correlation between attitudinal variables and both test score and age of arrival.

1.6 Results

The "early arrival" group performed better than the "late arrival" group. Based on the results of the analyses, the researchers concluded that there is a concrete and linear relationship between age of arrival and ultimate performance of both morphological and syntactic rules in English. The answers to the attitudinal variable test also supported the claim that more self-consciousness and less cultural identification with the target culture also may affect language learning.

1.7 Conclusions

The findings indicate that adults are more self-conscious because of performance problems in their second language, and identify themselves less with their target culture. These evidences led the researchers to claim that the critical period is not only a first language phenomenon, but also extends to second language acquisition.

The researchers argue that there is a clear independent effect of age of arrival, self-consciousness, and cultural identification on ultimate performance in a second language. There are several problems with this generalization. First of all, the

researchers tend to overlook the effects of experiential variables. Since there was a wide range of difference in the subjects' age of arrival, the variation in exposure to the language could skew the argument of age effect on the learning. It is reasonable to assume that people with longer exposure to their target culture may have improved performance abilities as compared to people who have had less experience living in their second language culture.

Though this study has raised many empirically interesting questions, it has left some crucial ones unanswered. It has not succeeded in adequately describing the relationship between age and language acquisition. This shortcoming could probably be attributed to the inability to control both social and linguistic variables. It is generally agreed that age cannot be a definite predictor of performance because of a great deal of variability among individuals. Any recommended mechanism accounting for adult performance in a second language cannot, therefore, be correlated with age alone.

Moreover, the researchers have seemed to ignore another important factor; contact with native language-occasional or consistent-also hampers performance in second language. They do not address the issue of transfer and complexity of acquisition, and conclude that the critical period is the primary determining factor in terms of adult acquisition of a second language. In doing so they tend to invalidate the proven fact that both proficiency and performance in a second language, especially under experimental situation, are affected by the nature of task demand. That is to say, they do not emphasize that the difference in the rules applied to perform different tasks could vary from children to adults.

Finally, the conclusions drawn from the results are not totally justified. Performance errors may not necessarily reflect learners' competence. In other words, performance errors could be triggered by attitudinal factors, experimental setting, nature of task, etc. It would be misleading to presume that performance errors are caused by age only. Also, controlling and defining variables should be determined by what kind of constructions the researcher is looking for. Newport and Johnson's methodology is too enthusiastic and complicated. Nevertheless, their research makes a positive contribution to our understanding of second language acquisition. It vividly establishes that there are many factors, such as experiential variables, attitudinal variables, biological disposition to language learning, that affect language acquisition.

Using the same hypotheses and a less complicated methodology, other research with more controlled variables could be conducted. Results obtained from subjects whose native language was the same, and who had the same number of years of formal education in second language in their native countries, could be more authentic. Last but not least, learners length of exposure to the target culture also could be controlled to determine any possible age effects on learning.