

# Is the Critical Period Hypothesis Relevant in the EFL Situation?\*

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Ahn, Soo-Woong. 2002. **Is the Critical Period Hypothesis Relevant in the EFL Situation?** *Korean Journal of English Language and Linguistics* 1-4, 587-608. When teaching English in elementary schools was introduced in Korea in 1997, the theoretical basis was the critical period hypothesis (CPH). The object of this study was to test whether the Korean situation satisfies the conditions for the CPH such as the amount of English input and needs. As a test for this, English input and needs were compared in Korea, the U.S.A. and Singapore. The items for English input were on a continuum of primary to secondary sources and the items for English needs were on a continuum of immediate to future needs. The 0-5 scale was used. The result showed that the total means of English input were 4.87, 4.62, and 1.05 for children in the U.S.A., Singapore and Korea respectively. The total means of English needs were 4.32, 3.81, and 1.52 for children in the U.S.A., Singapore and Korea respectively. These figures show that Korean children's levels of both input and needs were from "almost none" to "little," while those of children in the U.S.A. and Singapore were from "much" to "very much." This shows that teaching English in Korea presently is far from meeting the conditions that are expected by the CPH. As an alternative to explain what happens cognitively to Korean children, this paper suggests the automatization and proceduralization processes.

## 1. Introduction

When the critical period hypothesis (CPH) was suggested by

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Penfield (Penfield and Roberts 1959) in the sixties, the tendencies of linguistic studies were the rise of innatism against behaviorism. The theoretical support for the CPH was from Lenneberg's classical work, *Biological Foundations of Language* (1967) and Chomsky's proposal of language acquisition device (LAD) (1965). With theoretical support, the CPH rapidly became accepted by the general public and by many second/foreign language teachers. But it still remains "a universal folk belief shared by many linguists" (Cook 2001:493). The provocative arguments behind the CPH and Chomskyan generative linguistics are summarized as follows:

- a. Language is acquired by an **innate system** in the brain.
- b. Human brains are **preprogrammed** at birth to learn a language.
- c. Language is not learned; it **grows in the mind**.
- d. Language learning is a **biological** phenomenon: a change of the genotype to the phenotype.
- e. Language is acquired in a **special module** in the brain.
- f. The innate system (LAD) is **triggered by input**.

## 2. Theoretical Issues behind the CPH

Several events collectively worked together to strengthen the belief in the CPH. The test of the CPH has been done mostly in the second language situations where learners are immersed with input and needs. The issue behind the tests such as grammaticality tests and phonology acquisition tests was whether learners are constrained by the biological time table in language learning in the situation where ample input and needs exist. It will be meaningless to test Korean children with these tests who learn English in the situation which is devoid of input and needs or of any chances of interaction outside the classrooms. When studies on this issue are

closely looked at, it is unquestionable that the CPH does not apply to the Korean situation. This issue needs to be clarified.

## **2.1. Backgrounds**

Penfield (Penfield and Roberts 1959) was the first person who suggested that children acquire languages with ease before the age of 9 (Marinova-Todd et al. 2000:10). In Montreal where he lived, he experienced that language learning became much more difficult after this age, as though the individual had become stiff and resistant. He personally saw this in the difference between his own inability as an adult to learn French and the ease with which his children learned other languages in the nursery (Stern 1983:362). As a neurobiologist, he thought that this behavioral evidence had a physiological basis. The brain of the child is plastic, that of an adult, rigid and set. His proposal had a strong impact because he was in the position to say this. He was Director of the Montreal Neurological Institute since its founding in 1934, and was Chairman of the Department of Neurology and Neurosurgery of McGill University. He held the Order of Merit from the British Crown, and honorary degrees from 17 universities, including the two at which he was once an undergraduate, Princeton and Oxford. Among the learned societies of which he was a fellow, or member, were the National Academy of Sciences of the USA and of the USSR, the Royal Society of London, the Academie Nationale de Medecine, France, and the American Philosophical Society. He published six books on various phases of neurology, neurosurgery, and neurophysiology (Singleton and Lengyel 1995:83).

Chomsky's proposal of LAD (Chomsky 1965:32) put a foundation for the critical period hypothesis. But actually there was no direct relationship between Penfield and Chomsky at that time. Neufeld (1978) says that "While entirely different in origin and scope, Chomsky's 'language acquisition device' and Penfield's concept of 'cerebral dominance' were compatible in that they sought to explain

language learning in terms of 'nature,' as opposed to 'nurture'" (p. 163). Basically Chomsky proposes that human brains are genetically programmed to learn a language as a baby is born with other genetic programs (organs) such as a liver, kidney or skin color, hair color, etc. He suggests that "in certain fundamental respects we do not really learn language; rather, grammar grows in the mind" (1980:134). As the heart, or the visual system, or other organs of the body develop to their mature form, language grows as preprogrammed; therefore it is not learned (p. 135). The genetic language program should be triggered by input. This revolutionary idea, as argued in Chomsky's continuous publications in the sixties and seventies, stimulated the neurobiological studies on language as Lenneberg (1967) did and contributed to the CPH getting its place in language acquisition studies.

The critical period argument was most definitively advanced by Lenneberg (1967). Lenneberg argued that natural language acquisition by mere exposure can take place only during the critical period, which he set as occurring between the ages of 2 and puberty (p. 176). After puberty, the brain loses its cerebral plasticity because of the completion of the process of cerebral dominance, or the lateralization of the language function. Automatic acquisition from exposure to a second language seemed to disappear, and foreign accents cannot be overcome easily after this age. Lenneberg and Chomsky were supporting each other for the new ideas on human language acquisition. They were common in having a nativist view of language acquisition and were countering the then still prevalent behaviorist view that primary language development is dictated by environmental shaping or training. This is seen in the fact that Chomsky contributed a 46 page appendix to Lenneberg's work, *Biological Foundations of Language*, in which he outlined Universal Grammar-based formal nature of language (p. 397). The closure of the CPH entailed a loss of UG (Birdsong 1999:3).

Animal Studies also contributed to the belief of the CPH. Chun

(1980) says that "The idea of critical period is actually based on studies of animal behavior and was extended to language learning by Lenneberg among others" (p. 288). Studies in birds show that young birds are genetically programmed to learn to sing only their parent birds' songs if they are exposed to their parent model song during a certain time in infancy. Very little exposure was necessary to have them sing the song with dialect features. If they are isolated from their parent birds for a certain period in their early life, they could not sing in their parent birds' dialect. For example, when white-crowned sparrows were raised in social isolation, without an opportunity to hear other sparrows, they developed an abnormal song. The period between 10 and 50 days of age seemed to be critical for this learning, because after that time no amount of exposure to the normal song enabled the previously isolated bird to learn it (Miller 1981:15-16; Reich 1986:292). Moreover, exposure to the song of another species even during the critical period did not cause the isolated bird to learn an alien song (Tartter 1986:268). When a bird was allowed to hear recordings of the song during the critical period between 10 and 50 days of age, song learning could occur in total social isolation. This means that the singing is intrinsically rewarding in itself, because learning the song does not depend on the occurrence of any extrinsic reward as a consequence of producing it (Miller 1981:15-16). These animal studies provided the empirical basis for the CPH.

Genie was another case that contributed to the belief in the CPH by researchers, especially Curtiss (1977). Genie was 13 years and 9 months old at the time of her discovery in Los Angeles in 1970. She was physically isolated from the rest of her family until that time (from the age of 1;6 to 13). Researchers including Curtiss at UCLA were excited to see how she learns English after puberty. What was found was that she had difficulties in learning especially the function words (including functional morphology), that her intonation was bizarre, and that her right hemisphere was working

all the time on learning English. Her utterances seemed sometimes to have the structural complexity of a normal 2-year-old's (Eubank and Gregg 1999). This suggests that her left hemisphere which should have normally worked in language processing was not stimulated during a critical period for language learning. When she depended upon her right hemisphere, her language acquisition was different from normal language acquisition. Genie was a good case of a natural experiment to test learning an L1 after puberty.

## **2.2. The Role of English Input and Needs**

The essential elements in language acquisition are considered to be language input and needs (Ahn 1992).

### **1) The Role of Input**

Input is the essential element in language acquisition as proposed in the LAD hypothesis by Chomsky (1965). The language input triggers the LAD system and it turns the Universal Grammar (UG) to a particular grammar. Biologically it is a change of the genotype to the phenotype. When the parameters are set by input, acquisition of a particular grammar is complete (Lightfoot 1991:1; Elman et al. 1996:370; Meisel 1995:17). For second language acquisition, Krashen (1985) added the condition that input should be "comprehensible" and that there should be enough of it.

### **2) The Role of Needs**

The role of needs is how much the target language is needed by learners. The need assessment has been done on the supposition that needs affect second language acquisition. Most need assessments were done in ESL situations. Buckingham (1981) did need assessment to improve the English communicative abilities of the employees, students, or clients in language programs. He contended that ESL programs need to respond to the functional, sociocultural, and educational needs of their English speaking

members. Freeman and Freeman (1992) argue that students' performance in language learning is superior when they learn to meet "a real and immediate need" (p. 75). Ellis (1985) says that the need to be accepted by peer groups motivates children to be better learners than adults who are happy to maintain a foreign accent (p. 110).

Deficiency of needs causes problems. Kasper (2000) says that in a foreign language situation such as ELT in Japan, "students lack the need and opportunity of genuine communication in the target language; therefore, it is nearly impossible for students to develop pragmatic ability" of the language (p. 6). Languages even die if there is no need for them. Crystal (2000) singles out the need factor for explaining the death of languages among other factors that contribute to language death (p. 88).

Very few needs analyses were done in EFL situations. This paper proposes that by considering the needs as an essential factor, acquisition of both first language and second language can be better explained. It is in the EFL situation that the need factor makes a difference in learning an L2. In first or second language acquisition, the need factor doesn't arise as a problem because ample needs exist anyway in those situations. When ESL and EFL situations are compared, the need factor arises because one has needs and the other does not.

### **2.3. Reasons why the Critical Period Hypothesis is Irrelevant in the EFL Situation**

Reasons why the CPH is irrelevant in a foreign language situation are found theoretically in the SLA literature (Nunan 1999, 2001; DeKeyser 2000; Pak 2001).

#### **(1) The input type**

Input must be of regular and systematic type (Curtiss, quoted from *Research notes* (1996)). A drip-feed type of input is not

adequate for language acquisition. It should be a total immersion type of input (DeKeyser 2000:520). DeKeyser (2000) says that "Children are better than adults at acquiring a language implicitly .... Implicit acquisition processes require massive amounts of input, which only a total immersion program can provide, not a program consisting of a few hours of foreign language teaching per week" (p. 520). Curtiss (1977) emphasizes that learners must have sufficient exposure to language during the critical period, between the age of two and puberty, as a condition for second language acquisition (p. 206). To explain second language acquisition, Krashen (1985) proposed that the input should be "comprehensible" and there should be enough of it to activate the innate language acquisition system. Another condition was added to the type of input—that is, it should be an "interactional" one which motivates learners to acquire an L2 (Birdsong 1999:297). The EFL situation does not meet these input conditions.

## (2) Language needs

Language needs, especially "real and immediate needs" motivates children to learn an L2 (Freeman and Freeman 1992:75). Far future needs that will arise ten to fifteen years later rarely motivates children to learn. Swain's idea of comprehensible output (1985) emphasizes the importance of the needs to produce the language in the authentic communicative situation. A good case that proves that the need factor is essential is found in the fact that second generation Korean children fail to learn their parent language, Korean. They have Korean language input from their parents, but generally learning Korean does not occur. This happens in spite of parents' efforts to teach Korean. This is a common phenomenon in the history of immigration. The proverb, "You can take a horse to the water, but you cannot make him drink" applies here. The Korean language was not



needed by children to achieve anything in their present society where it has no functional value at all. Likewise, for most children in Korea, their needs for English are not real and immediate ones for authentic communication outside the classroom. Their needs are mostly future ones. So deficiency of needs for English in the Korean situation presently prevents the CPH effect from occurring.

(3) Korea is not the situation for the CPH to be tested.

The CPH has been tested with the grammaticality judgment tests and phonology acquisition tests. If Korean children are tested with these, they would perform very poorly and the CPH would be rejected in the general case. Korea is simply not the situation for the CPH to be tested.

(4) Age effect should be absolute, not statistical.

DeKeyser (2000) says that "Early age confers an absolute, not a statistical, advantage that is, there may very well be no exceptions to the age effect" (p. 518). In Korea for the past five years since teaching English was introduced in elementary schools from age 8, reports of acquisition of native-like or near-native proficiency have been simply nonexistent.

(5) The CPH only applies to age of acquisition, not age of instruction (DeKeyser 2000:505).

In Korea, the age when English language teaching begins is the age of instruction, not age of acquisition since there is no practical exposure to English outside the classroom. Mainly children depend on their memory capacity to learn English patterns based on the classroom instruction.

(6) Research done in the ESL situation is not applicable to the EFL situation.

Research done to test the CPH effect was done mostly in the second language situation, rejecting or supporting. Nunan (2001) says that "Unfortunately, most of it [the research] is irrelevant to settings in which English is taught as a foreign language" (p. 14; 1999:3).

(7) Theoretically UG is available to 8 year-old children, but seems not to be working to children who are learning English as a foreign language in Korea. Schacter (1996) says that if UG were available, their outcomes would be uniform (p. 167). The logic is that uniform language acquisition does not occur in Korea and UG is not working even to children. In this case, only those children with a high level of verbal analytical ability will reach near-native competence in their second language when problem-solving capacities are used (DeKeyser 2000:499).

### **3. A Comparison of English Input and Needs in Korea, the U.S.A., and Singapore**

To test whether Korea meets the conditions for the CPH effect to occur, the amount of input and needs that the elementary school children actually have were compared in three situations, Korea, the U.S.A. and Singapore. Questionnaires were conducted for this.

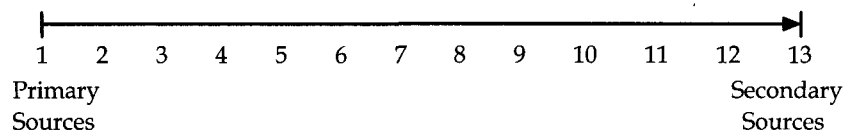
#### **3.1. Methods**

The subjects were 135 elementary school children in Korea, 68 immigrant Korean children in the U.S.A. and 93 Singaporean children. The subjects' age range was 9-10 in Korea, 7-12 in the U.S.A., and 8-12 in Singapore.

Two questionnaires were made, one was an input questionnaire and the other, a questionnaire for needs.

The items for English input were in a continuum of primary

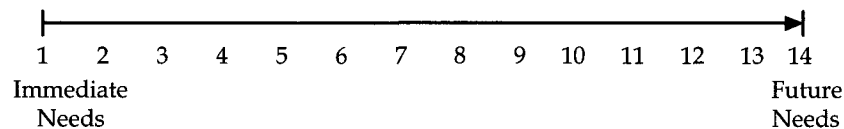
input sources to secondary input sources from number 1 to 13 as in Figure 1.



**Figure 1. The Input Items**

- 1) *My parents speak to me in English.*
- 2) *My brothers and sisters speak to me in English at home.*
- 3) *After school my friends speak to me in English.*
- 4) *People on the street use English for communication with other people.*
- 5) *I speak English at stores when I buy things.*
- 6) *My teacher speaks to me in English at school.*
- 7) *I watch T.V. programs in English.*
- 8) *I listen to the radio in English.*
- 9) *I chat on-line or use the internet in English.*
- 10) *I read English comics and story books.*
- 11) *I read English newspapers and magazines.*
- 12) *I watch English videos, movies or animation.*
- 13) *I listen to English audio story tapes or conversation tapes.*

The items for English needs were in a continuum of immediate needs to future needs from number 1 to 14 as in Figure 2.



**Figure 2. The Need Items**

- 1) *I need to speak English to buy food or drinks.*
- 2) *I need to speak English to protect myself from any danger.*
- 3) *I need to speak English to make friends.*
- 4) *I need to speak English to maintain my pride or identity.*
- 5) *I need to speak English to get love from my family.*
- 6) *I need to speak English wherever I go in Korea/the United States/Singapore.*
- 7) *I need to speak English to get teachers' praise in the class.*
- 8) *I need to know English to enjoy English movies.*
- 9) *I need to know English to use the internet or computer games.*
- 10) *I need to know English to read English comics or story books.*
- 11) *I need to learn English to get a higher mark in English examinations.*
- 12) *I need to learn English to know a lot of things in this world.*
- 13) *I need to know English to get a good job in the future.*
- 14) *I need to know English to be a successful person.*

The questionnaires in the United States were conducted by a

Korean-American elementary school teacher in New York city in January of 1999, in Busan in September of 1999 and in Singapore by a Korean university lecturer who stayed there for a year in 2000. A 0-5 scale was used for the degree of agreement: 5=very much, 4=much, 3=a little, 2=little, 1=almost none, 0=none.

### 3.2. Results

For the preliminary study, eight statements were given to professor Foo Chee Jan at RELC Institute, an authority in teaching English in Singapore, to know the status of English in Singapore. His answers are given after each statement in Italics below.

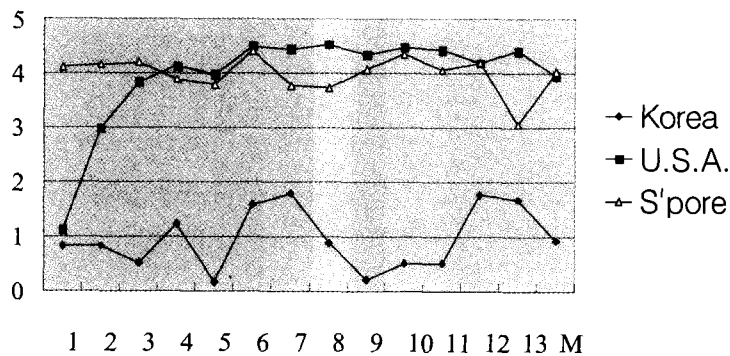
- (1) An elementary school teacher teaches all subjects always in English except the Chinese language class. *Yes.*
- (2) A teacher in the elementary school speaks English to the students outside the classroom at school. *Yes.*
- (3) Students speak English outside the classroom with other students. *Yes.*
- (4) Children are more comfortable with English than with their mother tongue. *Yes.*
- (5) All the textbooks are written in English at elementary schools except the Chinese language. *Yes.*
- (6) All the textbooks are written in English at secondary schools except the Chinese language. *Yes.*
- (7) English is recommended as a means of instruction, but there are not enough English proficient teachers in the schools. *No, all teachers are proficient in English.*
- (8) English is the first language among elementary school children. *Yes. English is the lingua franca in Singapore. The tendency is for most parents to speak English to their children which makes English the first language of most children although the mother tongues, Chinese (Mandarin), Tamil and*

*Malay are being actively promoted by the Government. The education policy emphasizes bilingualism. Statistically speaking, it is safe to say that English is the first language of most elementary school children.*

Answers from professor Foo show that English is the first language among children in Singapore, that children are more comfortable with English than with their parents' language, and that children learn all subjects with textbooks written in English except the Chinese language. It can be said that Singapore is a total immersion situation.

The graph in Figure 3 shows that children both in the U.S.A. and Singapore have a much higher level of input throughout the continuum than Korean children. The status of English in Singapore is almost the same as that of the U.S.A. The input levels of items 1 and 2 of Korean immigrant children in the U.S.A. are lower than those of other items. This may be the indication that they speak Korean at home.

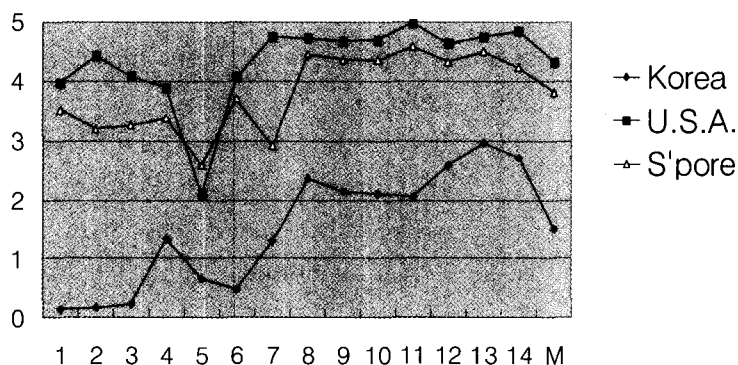
**Figure 3**  
**Comparison of English Input in Korea, the U.S.A., and Singapore**



M=mean

The graph in Figure 4 shows that children both in the U.S.A. and Singapore have much higher need levels throughout the continuum than Korean children. Korean children have a slightly higher level towards future needs. This is understandable in that most of their needs will arise in the future and that their immediate needs were negligible.

**Figure 4**  
Comparison of English Needs in Korea, the U.S.A., and Singapore



#### 4. Concluding Remarks

There are pro-CPH-L2 acquisition and anti-CPH-L2 acquisition positions in the second language acquisition research literature (Birdsong 1999; Marinova-Todd et al. 2000). But even though the CPH is a fact, it is hardly possible to expect that its proper effect would occur in the EFL situations which are devoid of English input and needs outside the classrooms. So, it can be said that the CPH is irrelevant in Korea unless certain conditions are met. The effect of the CPH is about natural acquisition of linguistic competence, mainly speaking ability. If the CPH works in Korea, the effect should be uniform, not exceptional. But there

are no reports indicating that Korean elementary school children have acquired natural speaking abilities. As DeKeyser (2000) puts it with regard to the CPH, early age confers an absolute, not a statistical advantage and there should be no exceptions to the age effect (p. 518). If in Korea there is no general acquisition of fluency except in some exceptional cases, it is not the effect of the CPH. Additionally, Korea is not the situation where the CPH could be applied since the CPH only applies to age of acquisition, not age of instruction as DeKeyser says (2000:505). Lack of opportunities for comprehensible output (Swain 1985) also disqualifies Korea as a place where the CPH effect can be expected. Therefore in the proper sense, the general belief that the CPH effect will occur in Korea has no theoretical basis.

In second language research materials, the expressions easily found are “language is a function of brain maturation” (Lenneberg 1967), “Second Language Acquisition as a function of age” (Long 1993), “L2 acquisition as a function of age” (Bialystok 1997), etc. What these expressions imply is that there is a significant correlation (negative) between the age of arrival of learners in English speaking countries and their second language acquisition (Johnson and Newport 1989). This presupposes that there are immersing input and ample needs for speaking English as in the U.S.A. or Singapore. Such age effect does not apply even to children in EFL situations which lack these conditions. Rather in this situation, the determining factors for language acquisition are the amounts of input and needs.

But even though the CPH is not relevant in Korea, it does not mean that teaching English in elementary schools is a waste of time or ineffective. They are making some progresses, even though slow, toward fluency. An alternative theory could be tried out to explain this.

## 5. An Alternative Explanation

So far, sufficient reasons were provided about why the CPH is irrelevant in Korea. As an alternative to explain what is happening to Korean children who learn English from age eight, the automatization and proceduralization processes are suggested (McLaughlin et al. 1983; DeKeyser 1997; Gass and Selinker 2001:206). With the drip-feed exposure (Lightbrown 2001:599) to English, what Korean children are doing maybe is that they are automatizing and proceduralizing English vocabulary, phonology and syntax as much as possible based on the classroom instruction. They may be constructing English sentences consciously in speaking with memorized patterns. The fact is that very few children in the fourth year of learning English reach native-like or near-native proficiency this way. Their speed and error rates are hardly close to nativelylike fluency. If the CPH worked, the effect should be general. Considerable amounts of reaction time in their speaking indicate that they depend upon automatization and proceduralization processes (DeKeyser 1997: 197). In this case, their fluency is a function of practice, not the effect of natural acquisition by universal grammar.

Evidence for this alternative explanation is detected by the speaking test done for elementary school children in Korea. The children were in one of the best elementary schools in the downtown area in Busan. In this test, questions consisted of three different modes: with memorized patterns, with learned pictures and with unfamiliar pictures. The questions were asked by a trained native speaker teacher and answers were recorded. Tables 1, 2, and 3 show the results.



**TABLE 1**  
**Delay Reaction Time in Response to the Questions**

| Modes of Tests<br>Subjects                       | Memorized patterns<br>(delayed time/<br>no. of Q= ) | Learned pictures<br>(delayed time/<br>no. of Q= ) | Unfamiliar pictures<br>(delayed time/<br>no. of Q= ) |
|--|---|---|--|
| Means of Korean Children (no.=10)                | 396/245=1.6*  | 571/248=2.3                                       | 681/177=3.8  |
| Means of Native English Speaker Children (no.=5) | /   | 33/109=0.3  | 27/67=0.4  |

\*Numbers are in seconds.

In Table 1, the delayed reaction time of Korean children was 1.6 seconds for the memorized patterns, 2.3 seconds for the learned pictures and 3.8 seconds for the unfamiliar pictures. Their delayed reaction time was considerable compared with that of native English speaking children who answered the questions immediately with a delayed reaction time of 0.3 seconds and 0.4 seconds for learned and unfamiliar pictures, respectively. This means that Korean children needed time to construct sentences consciously.

Table 2 shows the average number of words in answers of Korean and native English speaking children. Korean children answered with 1-2 words for memorized patterns, and 2-3 words for questions with learned pictures, compared with 3-4 words by native English speaking children. But in answering questions with the unfamiliar pictures there was a massive difference in the average number of words between Korean children and native English speaking children. Korean children answered with an average of 2-3 words for each question, but native English speaking children answered with 5-6 words. This shows that Korean children's responses are more or less sequences of words using 1-3 words per sentence with a high rate of errors, while native English speaking children's responses were syntactic using more than 5 words per sentence with almost 100 percent correct grammar (See Table 3).

**TABLE 2**  
**Average Number of Words Answered**

| Modes of Tests<br>Subjects                       | Memorized patterns<br>(Total Words/<br>no. of sentence= ) | Learned pictures<br>(Total Words/<br>no. of sentence= ) | Unfamiliar pictures<br>(Total Words/<br>no. of sentence= ) |
|--|---|---|--|
| Means of Korean Children (no.=10)                | 459/247=1.8   | 624/249=2.5   | 336/150=2.2  |
| Means of Native English Speaker Children (no.=5) |   | 344/109=3.2   | 293/55=5.3   |

Table 3 shows that Korean children's percentage of grammatical sentences was 72%, 59%, and 51% for each of the memorized patterns, learned pictures and unfamiliar pictures respectively, while that of native English speaking children was 100%-98%. This shows that Korean children were quite good in answering the memorized patterns, but in the situation where they had to construct sentences creatively with learned or unfamiliar pictures almost half of their sentences were ungrammatical.

**TABLE 3**  
**Percentage of Grammatical Sentences**

| Modes of Tests<br>Subjects                       | Memorized patterns<br>(Correct grammar/<br>no. of sentences= ) | Learned pictures<br>(Correct grammar/<br>no. of sentences= ) | Unfamiliar pictures<br>(Correct grammar/<br>no. of sentences= ) |
|--|--|--|---|
| Means of Korean children (no.=10)                | 178/247=72%  | 147/249=59%  | 76/150=51%  |
| Means of Native English Speaker Children (no.=5) |  | 109/109=100%   | 54/55=98%   |

Based on this interim assessment of speaking ability, the possibility is quite strong that Korean children depend upon automatization and proceduralization processes in learning English rather than the CPH effect. Since this paper is interested in approaching the truth about the CPH issue, it is not

interested in denying the potential effect of teaching English at an earlier age. Children might achieve fluency eventually with a lot of practice by automatizing and proceduralizing vocabulary, phonology and syntax even though the CPH effect does not occur. Their speaking ability is a function of practice in this case. This alternative makes more sense for explaining what's happening in English classrooms in Korea than what the critical period hypothesis says. Apart from speaking, attaining reading ability has nothing to do with the CPH since it does not depend upon the innate mechanism in Chomsky's sense (1965, 1980). Reading comprehension is the process of changing the visual symbols to meaning, so reading speed depend upon how much the processes are automatized and proceduralized. It is expected that teaching English in elementary schools will contribute to enhancing the students' reading ability eventually.

Table 4 is a summary of what happens to children in Los Angeles and in Busan, Korea.

**TABLE 4**  
**Comparison of Language Learning between Children in the ESL Situation and EFL Situation**

| ESL Children in Los Angeles   | EFL Children in Busan, Korea  |
|---|---|
| Most children will achieve native-like or near-native fluency.                  | Only exceptionally good students will attain near-native fluency.               |
| Conscious efforts and practice are not essential in attaining speaking ability. | Conscious efforts and practice are essential in acquiring speaking ability.     |
| Children will speak at the native English speakers' speed.                      | Speaking is slow and delayed reaction time is noticeable.                       |
| Errors rates in speaking are reduced naturally.                                 | Error rates are considerable in speaking and reduced as a function of practice. |
| Proficiency is acquired by implicit learning processes.                         | Mostly explicit learning processes are employed.                                |

The children of the same age will perform differently in Los Angeles and Busan. This fact should not be overlooked in developing English language programs in the elementary school curriculum in Korea.

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