

# An MP Interpretation of EFL Learners' Linguistic Behaviour\*

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**Kang, AeJin.** 2004. **An MP Interpretation of EFL Learners' Linguistic behavior.** *Korean Journal of English Language and Linguistics* 4-1, 33-60. This study was an attempt to present an appropriate way of interpreting L2 learners' linguistic behavior within Universal Grammar (UG) framework. Based on the Korean EFL adult learners' performance on the Subjacency violation sentences, the study suggested that the EFL learners are able to acquire subtle knowledge of target grammar and their linguistic behavior should be interpreted with the most recent version of UG theory, the Minimalist Program (MP) notion. The MP notion seems more plausible to accommodate incomplete L2 grammar while acknowledging UG-constrained interlanguage which the previous version, Principles and Parameters (P&P) approach, could not explain very well. The study observed no age-effects among the Korean EFL learners in their linguistic competence measured by the performance on the UG-constraint violation sentences. Having suggested that the MP notion can be a more reasonable tool to explain the EFL learners' linguistic behavior, the study introduced comprehensive hypotheses such as Constructionist Model (CM) and the Ontogeny Phylogeny Model (OPM).

**Key Words:** Universal Grammar (UG), Minimalist Program (MP), the Subjacency Principle, EFL learners, Constructionist Model (CM), the Ontogeny Phylogeny Model (OPM)

## 1. Introduction

This study attempted to explore an appropriate way of

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interpretation of second language learners' linguistic behaviour observed differently depending on their age and linguistic environments while developing linguistic competence toward the target grammar within UG framework. "UG is defined as a theory of the language faculty and a theory of the initial state. It is a set of specifically linguistic principles and parameters that has cardinality and is discrete and finite" (Flynn & Lust, 2002, p. 97). Ever since Chomsky articulated UG as an operating system for L1 acquisition in his *Syntactic Structures* in 1957, "an enduring issue in second language acquisition (SLA) research is whether UG, which is assumed to explain the remarkable fact of first language (L1) acquisition, is still available to second language (L2) learners" (Yusa, 1998, p. 215). That is, "basically, the question is whether an adult L2 grammar is constrained in exactly the same way as an L1 grammar is constrained by the various principles and parameters of UC" (Gregg, 2003, p.853). In particular, the issues for SLA have focused on "four kinds of evidence from L2 grammar: 1) gaining a new value for a parameter; 2) native-like L2 competence; 3) UG constrained interlanguage; 4) acquisition of subtle feature despite poverty of the stimulus" (Herschensohn, 2000, p. 118).

The present study was in particular concerned with the fourth type of evidence in investigating the English as a foreign language (EFL) learners' linguistic behavior based on their performance on the Subjacency violation sentences. As Herschensohn (2000) pointed out, the L2 learners' knowledge which is "unavailable from instruction, L2 or positive evidence gives strong evidence of UG influence" (p. 118). According to White and Juffs (1998), if learners show evidence of obeying constraints that operate only in the L2, or of setting parameters to L2 values, this suggests UG availability, since knowledge of the L2 system could not have come solely from the L1 and, on standard logical problem arguments, could not have come solely

from the L2 input (p. 113). For instance, some grammar knowledge such as that of multiple-questions whose "grammaticality differences among them certainly are not introduced, the predominant source of information must presumably be naturalistic input. Yet, such positive input does not include any obvious indication of the ungrammaticality of the sentences. Thus, as is often pointed out in the literature of language acquisition, if knowledge of the grammaticality distinction among such types is attained, this knowledge must derive from the innate language acquisition device of UG" (Bley-Vroman & Yoshinaga, 2000, p. 8).

In the current study, the positive input represented grammatical sentences. The learners' linguistic competence to accept grammatical sentences as grammatical was classified as the knowledge coming from environmental supports or other general psychological learning process. On the other hand, the learners' ability to reject the ungrammatical sentences which were all Subjacency violation sentences in the study was considered as the competence coming from language-specific capability represented by UG. For the participants of the study who are all Korean speakers, the notion of Subjacency is one that is "generally not taught and thus is characteristic of poverty of stimulus" (Herschensohn, 2000, p. 120). In particular, according to SLA literature (e.g., Bley-Vroman et al., 1988; Schachter, 1990; Gass & Selinker, 1994; Hawkins, 2001), Korean speakers are not supposed to have the knowledge of the Subjacency Principle through their L1 since Korean has neither the Subjacency condition nor other related properties such as Wh-movement or topicalization. Thus, through the grammaticality judgement test of Subjacency violation sentences, it can be hypothesized whether the English grammar of Korean learners is constrained by UG.<sup>1)</sup>

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<sup>1)</sup>One reviewer pointed out, however, that several studies such as Watanabe (1992, JEAL), Takahashi (1994, UCONN thesis) and Son (1995,

The current study extended the previous investigation attempted by Kang (2002), focusing on age-effects among EFL adult learners in acquiring UG-driven knowledge. Based on the research with seven studies employing a UG Principle, the Subjacency Principle, as a research tool by which English L2 learners' linguistic competence was measured, Kang (2002) showed that EFL environment does not prevent the learners from acquiring target grammar in UG domain. It strongly suggested that the EFL adult-learners be able to acquire UG-driven knowledge to a considerable degree. That is, EFL adult learners are not at disadvantage in making their L2 grammar target-like.

The current research was an attempt to examine such a claim made in Kang (2002) with evidence supported from another empirical study and compare the research findings with those of previous ones. Some studies such as Schachter (1990), Johnson and Newport (1991), Felix and Weigle (1991) supported age-effects concerning ESL and EFL learners, respectively. On the other hand, other studies like Bley-Vroman et al. (1988), Perez-Lerous and Li (1999) produced different research findings suggesting that ESL adult learners be free from maturational effects to some degree or much higher extent so that they can achieve native-like competence in UG-driven knowledge. With respect to EFL adult learners' possibilities, White and Juffs (1998) and Kang (2001) presented basically similar research findings suggesting that EFL adult learners be able to acquire subtle feature of linguistic property in the target language regardless of age limits. But the two studies were interpreted differently in that White and Juffs (1998) showed age-effects among adult learners while Kang (2001) did not indicate age difference among the ESL and EFL adult learners.

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UConn thesis) suggested that Korean language also observes the Subjacency Principle.

### 1.1. Research Questions

Within generative SLA (GSLA) literature, most research findings of the studies employing the Subjacency Principle as a research tool to see whether UG constraints second language grammar appeared to suggest that "the older speakers are when they are first immersed in English, the less likely they are to be sensitive to subjacency" (Hawkins, 2001, p. 275). The current study purposed to investigate if such suggestions were also true with Korean EFL adult learners by examining possible age-effects among the EFL adult learners when building syntactic competence represented by the Subjacency Principle in the L2. To serve the research purpose, the present study was guided by two research questions:

- 1) Are there age-effects observed among the EFL learners when they performed on UG Principle (the Subjacency Principle) violation sentences? If so, how strongly does the age-factor affect the EFL learners' acquisition of UG-driven knowledge?
- 2) Are there other factors influencing the EFL learners' acquisition of UG-driven knowledge in addition to the age-factor or exclusive of the age-factor?

## 2. Theoretical Background

### 2.1. The Subjacency Principle

The Subjacency Principle refers to a linguistic phenomenon which states that any movement may not cross more than one bounding node or barrier in a single movement. That is, this Principle "prevents a *wh*-phrase from moving 'too far' from its original position" (Chomsky, 1981a, b, 1986a, cited in White, 2003, p. 121). Johnson and Newport (1991) also provided an account of the Subjacency Principle that "what constitutes a

bounding node forms a parameter upon which languages may vary" (p. 225). For example, in English a bounding node is IP (S) or NP while they are CP and NP in Italian. In Hawkins (2001) and White (2003), the term DP was used instead of NP. Gregg (1996) pointed out that the Subjacency Principle is "irrelevant to languages that lack Wh-movement; or perhaps it would be better to say that the principle applied vacuously in such languages" (p. 62) since "Subjacency is a property which is only activated by the movement of constituents in syntactic structure. If constituents do not move, they cannot give rise to Subjacency violations" (Hawkins, 2001, p. 273). Historically, this universal principle was first called the *A-over-A* principle (Chomsky, 1964, 1968), then *island constraints* (Ross, 1967), and only more recently it has been reanalyzed, and renamed *Subjacency* (Chomsky, 1981, cited in Johnson & Newport, 1991). Constraining the kinds of *wh*-movement, the Subjacency Principle works as follows:

- a. \*Who did Mary meet the man who saw?  
 [<sub>CP</sub> Who<sub>i</sub> [<sub>IP</sub> did Mary meet [<sub>NP</sub> the man [<sub>CP</sub> who [<sub>IP</sub> saw  
 t<sub>i</sub>]]]]]
- b. Who did Mary believe that the man saw?  
 [<sub>CP</sub> Who<sub>i</sub> [<sub>IP</sub> did Mary believe [<sub>CP</sub> t<sub>i</sub> that [the man saw  
 t<sub>i</sub>]]]]]

The sentence (a) illustrates how Subjacency restricts *wh*-extraction in questions: the *wh*-phrase, *who*, has been extracted out of a relative clause to form a question, crossing two contiguous bounding nodes (NP, IP); the resulting question is ungrammatical. This contrasts with sentence (b), where extraction is possible from the embedded clause because the *wh*-phrase can pass through the intermediate Spec of CP, since it is not already occupied by a *wh*-phrase (White, 2003, p. 246).

The complementizer of CP is responsible for the types of the

clause in terms of whether it is declarative (+root, -wh: declarative sentence), interrogative (+root, +wh: question sentence), embedded declarative (-root, -wh: embedded declarative sentence) or embedded interrogative (-root, +wh: embedded question). Inflection of IP carries the number, person, tense of the subject of the clause which are realized as an agreement inflection on verbs. Although IP is central to clauses, inflection is not the head of the clause. The head of clause is the complementizer (Towell & Hawkins, 1994, p. 75-79). As mentioned in the SLA literature, access to UG can be considered as an ultimate barometer as to whether the second language learners are able to acquire native-like competence of the language in question. For the Korean speakers, the knowledge of the Subjacency Principle may represent access to UG since the principle is not explicit in positive input, not active or vacuously applied in Korean, and rarely taught in instructional settings.

## 2.2. MP and SLA

At the heart of the UG theory is "the assumption that the grammars of human languages are all essentially built on the same pattern; that is, there is a Universal Grammar which underlies the particular grammars of specific languages. At the same time Universal grammar allows possibilities for variation between languages in the way that its constructs are realized, but of a limited and specifiable kind" (Hawkins, 2001, pp. 1-2). Along the 1980s and up until early 1990s, such theoretical assumption was known as the 'Principles and Parameters (P&P)' approach. Since 1993 and 1995, "Chomsky's work has focused on reducing the form that principles and parameters take to the minimal specifications required to allow grammar-building to occur, and the approach has come to be known as a 'minimalist program for linguistic theory' (Chomsky, 1995)" (Hawkins, 2001, p. 2). That is, MP proposes that "a syntactic representation

consists not of the familiar four levels, D-structure, S-structure, Phonetic Form, and Logical Form, but rather, only the latter two - the (apparently irreducible) "interface" levels" (Lasnik, 1999, p. 26). Lasnik (1999) even asserted that "the success of Chomsky's program depends on the reduction of all such requirements to LF and PF well-formedness conditions, and/or to general economy consideration" (p. 26).

Within the P&P approach, the GSLA has centered on whether L2 learners are able to reset parameters according to the L2 values, thus implied instantaneous resetting or failure supported respectively by one of the three hypotheses: full-access, partial-access, or no-access. Thus, the P&P approach has been considered that it was hard to account for adult L2 learners' linguistic behaviour which appears far from native-speakers' spontaneous use of language while it is assumed that interlanguage grammar is UG-constrained. Having observed the research paradigm shift from P&P approach to MP notion, GSLA seemed to put up a more comprehensive hypothesis such as Constructionist Model proposed by Herschensohn (2000). According to MP, the locus of language acquisition is acquisition of morpholexicon, both in L1 and L2. Chomsky (1995) set out MP that, beyond Phonetic Form (PF) and lexical arbitrariness, "variation is limited to nonsubstantive parts of the lexicon and general properties of lexical items. If so, there is only one computational system and one lexicon, apart from this limited kind of variety" (p. 170).

Therefore, the MP notion "favors a view of acquisition as a gradual morpholexicon construction of a grammar, thus accommodating the incompleteness phenomenon typical of second language acquisition (L2A). Such a model is better able to handle variability than the Principles and Parameters switch-flipping account of "parameter-resetting" " (Herschensohn, 2000, p. 80). What MP would suggest for SLA might be



summarized as follows:

First, it provides an answer to the question of the accessibility of UG: Certain aspects of UG must be available in L2A since syntax is "universal."

Second, it can encompass variability in interlanguage grammars as well as the possibility of L2 final state grammars that are near native as a function of the completeness of morpholexical control.

Finally, it provides a model of grammar that can account for initial and final states as well as intermediate interlanguage grammar (Herschensohn, 2000, p. 81).

Based on such MP notions, Yusa (1999) claimed that "the no-access hypothesis cannot be formulated on MP assumptions and it is impossible to distinguish between the full-access hypothesis and the partial access-hypothesis" strongly implying that "the full-access hypothesis becomes inevitable on MP assumptions" (p. 310). However, Freidin (1996) suggested that "the no access hypothesis cannot be formulated under this view: however, the partial access hypothesis still can be" (p. 725) since even though the L2 learner can acquire universal computational system of human language (CHL), he or she still has to master the morpholexical construction of the language in question.

Herschensohn (2000) also argues that in minimalist notion "the computational system is identical cross-linguistically and that variation is necessarily morpholexical", and thus "the acquisition of L2 syntax should be possible only through acquisition of the L2 morpholexicon" (p. 80). Therefore, such a minimalist notion seems more plausible for explaining incompleteness of SLA, while at the same time supporting the UG access position in SLA by saying that parametric variation is restricted to the lexicon, and L2 grammars are constrained by universal principles in that "intermediate and final state L2 grammars are possible human languages" (Herschensohn, 2000, p. 80).

Such a position concerning MP assumption which favors UG full access hypothesis can be supported by anecdotal

observations such as Chelsea and Genie's cases (Bialystok & Hakuta, 1994). It was reported that they could not acquire adult-like grammar in their L1 even after the extensive training with linguists or other scientists since they were found and exposed to their L1. In contrast, adult second language learners who have already acquired their L1 are observed to acquire native-like grammar and even performance skills even though the number of those adult-learners appears small.

While Chelsea and Genie never acquired any human language, and therefore were not able to internalize a  $C_{HL}$ , the adult L2-learners have a  $C_{HL}$  internalized through their native language, and therefore they seem to be able to acquire another human language, even though there are a lot of factors involved in adult-L2 acquisition which prevent, as well as facilitate, their acquisition of competence and performance skills in the target language. Such assumption sounds echoed with "Lenneberg's conjecture that a "matrix for language skills," possibly acquired in the course of learning a first language, has survived into adulthood" (Bialystok & Hakuta, 1994, p. 73). The current study was interested in how the most recent version of UG theory, the MP notion, can provide a more suitable interpretation of EFL adult learners' linguistic behaviour when they made grammaticality judgement of the Subjacency violation sentences as well as of the relevant grammatical sentences.

### **2.3. Reconsidering Critical Period Hypothesis (CPH) in SLA**

CPH is the proposal that "there is a time period which is optimal for language acquisition, with a maturational decline with increasing age" (White, 2003, p. 245), and claims in its strong version that "human beings are only capable of learning language between the age of two years and the early teens" (Cook, 2001, p. 132). While it is assumed that "there is a biologically determined sensitive period cutoff for involuntary

and complete acquisition of a first language" (Herschensohn, 2000, p. 45), it is also true that "evidence in favor of the superiority of young children has proved surprisingly hard to find. Much research, on the contrary, shows that age is a positive advantage" (Cook, 2001, p. 133).

In theoretical point of view, White (2003) suggested that "although many critical period studies refer to level of ultimate attainment in various areas of grammar, this is rarely defined in terms of a particular grammatical system or theory of grammar" (p. 245). In this respect, the studies within the UG framework can provide insight for determining the nature of ultimate attainment by attempting to look into the learners' linguistic behavior when they perform on the UG-constraint violations sentences even though, so far, "results on age effects on UG properties are mixed" (White, 2003, p. 249).

As discussed in Introduction, the empirical studies employing the Subjacency Principle to investigate the age-effects in acquiring UG-driven knowledge have produced different research findings and thus supported different standpoints regarding CPH. In addition to those above-mentioned seven studies, White and Genesee (1996), comparing the performance of three groups (near-native, nonnative speakers and native controls) on the two tasks designed to tap aspects of UG, found no significant differences between near-native group and native-speakers on either of the tasks. White and Genesee's (1996) findings seemed contrasted with those of Johnson and Newport (1991) in that White and Genesee's (1996) subjects showed no evidence of a maturational decline in performance with increasing age of initial acquisition of the L2. White and Genesee's (1996) results thus suggested that native-like attainment is possible regardless of age of initial significant exposure to the L2 (p. 258).

Especially with respect to the speed of learning in instructional setting, "no advantages were found for young children. In fact,

the advantage is typically in the other direction. College-aged, young adults do quite well on most tests measuring language learning speed" (Gass & Selinker, 1994, p. 240). Cook (2001) asserted that "the apparent superiority of adults in such controlled research may mean that the typical situations in which children find themselves are better suited to L2 learning than those of adults encounter. Age itself is not so important as the different interactions that learners of different ages have with the situation and with other people" (p. 134). As Marinova-Todd, Marshall and Snow (2000) suggested, although older learners are indeed less likely than young learners to master an L2, "a closer examination of studies relating age to language acquisition reveals that age differences reflect differences in the situation of learning rather than in capacity to learn" (p. 9).

### **3. Methods**

#### **3.1. Subjects**

For the present study, two groups of Korean EFL learners at a university in Seoul were asked to participate by taking a grammaticality judgement test (GJT) as well as filling out a questionnaire developed to obtain personal information concerning their English language experience. One group consisted of 17 Freshmen majoring in English while the other 43 junior and senior mainly from English department. Their performance on the GJT was compared with those of EFL graduate school students and ESL learners as well as that of control group of native speakers of Kang (2002). The graduate school students were from six universities in Seoul while the ESL learners were mainly graduate school students of a university in the USA. The native speakers of English were undergraduate and graduate school students at a university in the USA, too.

In Nunan's (1999) definition, EFL stands for the teaching and learning of English in communities where it is not widely used for communication, while English as a second language (ESL) means that the teaching and learning of English in communities where it is widely used for communication by the population at large (pp. 306-307), even though he added that these days the distinction between ESL and EFL is widely regarded as an oversimplification (p. 37). Kramsch (2000) suggested that the term *second language* (L2) is generally used to characterize language acquired, in natural or instructional settings, by immigrants or professionals in the country of which that language is the national language; *foreign languages* (FLs), by contrast, are traditionally learned in schools that are removed from any natural context of use (p. 315).

### 3.2. Grammaticality Judgement Test (GJT)

The study used a GJT with five types of grammatical sentences whose structure involved Sentential Subjects (SS), Noun Complement Clause (NCC), Relative Clause (RC), Embedded Question (EQ) and *wh*-phrase beginning sentences while the ungrammatical sentences used in the GJT were all Subjacency violation sentences with SS, NCC, RC and EQ structures.

Mandell (1999) pointed out that the use of grammaticality and metalinguistic judgment tests in second language acquisition (SLA) research has been the subject of considerable scrutiny over the past decade (73). A review of the previous research with GJ tests (Chaudron, 1983; Birdsong, 1989; Ellis, 1991; Cowan & Hatasa, 1994; Gass, 1994; and Davis & Kaplan, 1998, cited in Mandell, 1999) gave a comprehensive overview on how "GJ tests in research design are used to make inferences about the syntactic structures and rules that constitute learners' linguistic competence, in the Chomskian sense of the word" (Mandell, 1999, p. 73). Aware of the criticism on the use of GJ test, and

also himself interested in whether GJ test can be a reliable measure of linguistic competence, Mandell (1999) conducted a study in which GJ test data were compared with dehydrated sentences (DS) test data based on *wh*-property, *yes/no* property, and adverb property scores. He concluded that GJ data is a reliable measure of linguistic knowledge by showing that there were substantially significant positive correlations between both tests for all the three syntactic properties. It is noteworthy that "the strength of the correlations appears to hold across learner-level" (p. 91). In particular, Mandell's (1999) findings are compatible with those of Ellis (1991), Leow (1996), and Gass (1994) cited in Mandell (1999) in that GJ tests are reliable measures of L2 syntactic competence. The GJ tests can be said to survive extensive scrutiny and were approved by the SLA researchers who have experimented with GJ tests as a reliable tool of measuring L2 learners' linguistic competence.

The current study used the test sentences constructed for Kang (2001) which were originally from those used in Bley-Vroman (1988), Schachter (1990), and Johnson and Newport (1991) that employed the Subjacency Principle as a research tool to look into the English learners' linguistic competence. The test consisted of four syntactic constructions and *Wh*-phrase beginning sentences. One sentence (EQ construction) was from Celci-Murcia (1983) while the other two EQ sentences were created by Kang (2001). However, Kang (2001) changed some test items in terms of length and vocabulary use in order to avoid any possible effect caused by the different length of sentences or unfamiliar vocabulary. The research questions were asked and answered on the basis of the subjects' performance on the grammatical sentences and the Subjacency violation sentences. Kang (2001) showed that there was no significant difference between EFL and ESL learners' competence measured by their performance on the Subjacency violation sentences.

Except for RC structure which was grammatical, each consisted of five grammatical sentences and five ungrammatical Subjacency violation sentences. There were six grammatical sentences with RC structure. For this part, I chose the sentences used in Schachter (1990), except for two NCC Subjacency violation sentences and three RC Subjacency violation sentences which I borrowed from Perez-Leroux and Li (1999). In addition, the test included seven grammatical Wh-phrase beginning sentences which were from the studies of Bley-Vroman et al. (1988), and Johnson and Newport (1991). The subjects were asked to choose one option out of four possible answers: a) Clearly grammatical, b) Probably grammatical, c) Probably ungrammatical, d) Clearly ungrammatical. Options a) and b) were regarded as accepting the sentence as grammatical; options c) and d) were regarded as accepting the sentence as ungrammatical. This was expected to allow the subjects to express their uncertainty about their judgment, as did the subjects in Schachter (1990), and those of Perez-Leroux and Li (1999), as well as remind them that it was not a test of prescriptive rules of English grammar. Below are the sentences for each type:

SS: *That oil prices will rise again this year* is nearly certain.

NCC: The judge rejected the evidence *that the student committed the crime*.

RC: The theory *we discussed yesterday* will be on the exam next week.

EQ: The dorm manager asked me *who I wanted to have as a roommate*. (Schachter, 1990, p. 106)

Wh-movement: What did John think Carol wanted her mother to give to the postman? (Bley-Vroman et al., 1988, p. 9)

\*SS: \*Which party did for Sam to join (t) shock his parents?

\*NCC: \*Who did the police have evidence that the mayor murdered (t)?

\*RC: \*Which problem did Bill find a principle which solves (t)?

\*EQ: \*Who did the Senator ask the President where he would send (t)? (Schachter, 1990, Appendix)

### **3.3. Questionnaire for Attribute Variables**

A questionnaire was developed to obtain personal information such as age, years of studying and/or using English, and how often they currently used each skill of English, and see what kind of relationship there would be between these types of independent variables and their linguistic competence demonstrated by test performance.

### **3.4. Methods of Analysis**

Analysis of variance (ANOVA) was employed to compare the means of the five groups which were Freshmen group, Junior & Senior group, Graduate students' group, ESL group and the control group of native speakers. Post-hoc pairwise comparison (Scheffe) was computed to test differences between pairs of group, that is, between the Freshmen group and Junior & Senior group, Junior & Senior group and Graduate students' group, Junior & Senior group and ESL group. Each group was also compared with the control group, respectively. In order to see if there were significant differences between the group means of the GJT scores, a t-test was computed. To see if there would be significant correlation between any of the attributable variables and the subjects' performance on the GJT, Pearson Correlation was calculated.

## **4. Results**

### **4.1. Overall Performance of the Five Groups on the GJT**

There were statistically significant differences among the five



groups in their performance of three areas: grammatical sentences, Subjacency violation sentences and *wh*-phrase beginning question sentences. The results is summarized in Table 1.

**Table 1**  
Five Groups' Overall Performance on the GJT

Group	Wh-pharse Question Sentences		21 Grammatical Sentences		20 Subjacency violation sentences	
	Mean	SD	Mean	SD	Mean	SD
Freshman	5	1.41	14.76	2.73	12.35	2.15
Junior & Senior	4.70	1.42	14.49	2.91	13.95	3.98
Graduate	4.18	1.52	13.69	2.97	16.29	3.38
ESL	5.12	1.13	15.57	3.51	16.35	3.45
NS	5.41	1.30	17	2.69	18.82	2.32
ANOVA	F=6.628 p=.000		F=9.137 p=.000		F=19.497 p=.000	

#### 4.2. Difference Between the Groups

By the performance on the Subjacency violation sentences, the group difference was found significant between the Junior & Senior group and the Graduate students' group ( $t(103)=-3.235$ ,  $p=.002$ ), between the Freshmen group and the control group ( $t(66)=10.131$ ,  $p=000$ ), between the Junior & Senior group and the control group ( $t(92)=-7.071$ ,  $p=000$ ), between the Freshmen group and the ESL group ( $t(66)=-4.484$ ,  $p=000$ ), between the Junior & Senior group and the ESL group ( $t(92)=-3.130$ ,  $p=002$ ).

On the other hand, on the performance with the *wh*-phrase beginning sentences, the significant difference was only found between Junior & Senior group and the control group ( $t(92)=-2.542$ ,  $p=013$ ). For the performance on the grammatical sentences, a significant difference was not found between the pair of the EFL group. But, there was significant difference between the Freshmen group and the control group ( $t(66)=-2.927$ ,

$p=.005$ ), and between the J & S group and the control group ( $t(92)=-4.309$ ,  $p=.000$ ).

#### 4.3. Comparison of the Performance on the Subjacency Violation Sentences

Concerning the performance of the Freshmen group, Junior & Senior group, the Graduate students' group, and the ESL group on the Subjacency violation sentences along with that of the control group, the post-hoc pairwise comparison (sheffe) test showed that there was significant difference between the Freshman group and Graduate students' group, between Junior & Senior group and Graduate students' group, and between each of the three EFL group and the control group. However, there was no significant difference between the Freshmen group and Junior & Senior group measured by their performance on the Subjacency violation sentences. The results were presented in Table 2.

**Table 2**  
Multiple Comparison among the Three EFL Groups  
and the Control Group

Group	Group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Freshmen	J & S	-1.6005	.9292	.564	-4.4872	1.2861
	Graduate	-3.9374*	.8879	.001	-6.6959	-1.1789
	ESL	-4.0000*	.9083	.001	-6.8218	-1.1782
	NS	-6.4706*	.9083	.000	-9.2924	-3.6488
J & S	Freshman	1.6005	.9292	.564	-1.2861	4.4872
	Graduate	-2.3368*	.6436	.012	-4.3364	-3.3372
	ESL	-2.3995*	.6715	.014	-4.4855	-.3134
	NS	-4.8799*	.6715	.000	-6.9561	-2.7840
Graduate	Freshman	3.9374*	.8879	.001	1.1789	6.6959
	J & S	2.3368*	.6436	.012	.3372	4.3364
	ESL	-6.2619	.6131	1.000	-1.9674	1.8421
	NS	-2.5332*	.6131	.002	-4.4380	-.6285

\* The mean difference is significant at the .05 level.

#### **4.4. Attribute Variables of the Three Groups of EFL Learners**

##### **4.4.1. Information on Age**

The seventeen students in the Freshmen group ranged between 19 and 22 years old with the average of 20.24 years old with SD .83 years while the subjects of the Junior & Senior group were between 20 and 31 with average of 22.82 years old with SD 2.14 years. Of the 62 learners in the Graduate group, nine were between 18 and 25 years old; 51 were between 25 and 35, and 2 subjects were above 35. But in the Graduate group, there were 4 undergraduates taking graduate courses while one subject did not specify what school level he was in. The other said he worked at a post-doctoral level. All the subjects in the Graduate group were majoring in political science.

Concerning the question when they started learning spoken English, the Freshmen group said that it was around 13 years old with SD 3.60 years while it was about 13.46 years with SD 3.58 years for the Junior and Senior group. All the subjects of the Graduate group were not exposed to extensive spoken English until 17.

##### **4.4.2. English Language Experience**

The Freshmen group studied or used English for 6.19 years on average with SD 2.77 years; the Junior & Senior group for 9.26 years with SD 3.20 years. For the Graduate group, 58.1% of the subjects studied and used English between 10 and 15 years; 25.8% of them between 16-20 years; 4.8% between 20 and 25 years while 11.3% for fewer than 10 years.

One student of the Freshmen group said that she had experience of staying in an English-speaking country for one year and three months. In the Junior & Senior group, 4 out of 39 answering the question indicated that they had spent in an English-speaking country for about three months with SD 5

months. With respect to the experience of studying or using English with native-speaker instructors, the Freshmen group said that it was about 1.37 years with SD 1.63 years while for the Junior & Senior group, it was 2.77 years with SD 2.45 years during which they studied or used English with native-speaker instructors. In addition to this information, the Freshmen group were supposed to take at least two English-medium courses of general English with English-speaking instructors whether they were native or nonnative by the time they participated in the study since it was the school policy. This was also true with the Junior & Senior group when they were Freshmen.

#### 4.4.3. Frequency of Using English

For Question 8, *How often do you communicate with other people through spoken English?* both Freshmen group and Junior & Senior group answered between *once or twice in a month* and *once or twice in a week*. Concerning Question 9, *How often do you read materials in English?* the Freshmen group said that it was *almost once or twice in a week* while the Junior & Senior group it was *almost everyday*. With Question 10, *How often do you write in English?* both groups indicated that it was between *once or twice in a month* and *once or twice in a week*. The information is presented in Table 3 along with that of the Graduate group for the sake of comparison among the three groups.

**Table 3**

How Often the EFL Learners Speak, Read and Write in English

	Speaking			Reading			Writing		
	# of Students (Percent)			# of Students (Percent)			# of Students (Percent)		
	F	J S	G	F	J S	G	F	J S	G
Almost every day	0 (0)	8 (18.6)	0 (0)	3 (17.6)	22 (51.2)	31 (50.0)	1 (5.9)	2 (4.7)	0 (0)

Once or twice a week	8 (47.1)	14 (32.6)	2 (3.2)	9 (52.9)	10 (23.3)	25 (40.3)	9 (52.9)	21 (48.8)	7 (11.3)
Once or twice a month	1 (5.9)	4 (9.3)	5 (8.1)	4 (23.5)	0 (0)	3 (4.8)	7 (41.2)	3 (7.0)	6 (9.7)
Rarely	8 (47.1)	12 (27.9)	53 (85.5)	1 (5.9)	4 (9.3)	3 (4.8)	0 (0)	10 (23.3)	49 (79)
Other ways	0 (0)	5 (11.6)	2 (3.2)	0 (0)	7 (16.3)	0 (0)	0 (0)	7 (16.3)	0 (0)
Total	17 (100)	43 (100)	62 (100)	17 (100)	43 (100)	62 (100)	17 (100)	43 (100)	62 (100)

## 5. Discussion

### 5.1. Answer to Research Question 1

The results showed that the three groups of Korean EFL adult learners were sensitive to the UG-driven knowledge represented by the Subjacency Principle: the Freshmen group earned 61.75%; the J & S group 69.75%; the Graduate students' group 81.45%. That is, the research findings suggested that it is rather school level than age, and thus the findings could not support the argument of CPH at least with the EFL learners participating in the current study.

On the contrary, the Graduate students' group, the oldest learners, showed that their acquisition level of the Subjacency Principle was significantly higher than that of each of the two younger groups, respectively while there was no significant difference between the two younger groups. These research findings seemed contrasted with that of White and Juffs (1998) in which they observed "age effects even in adult learners, a finding also reported by Birdsong (1992)" (p. 125). Also, the current study produced different findings from that of Johnson and Newport (1989, 1991) in which they showed that younger is better without observing the age effects among adult learners.

An explanation about the different research findings between

White and Juffs (1998) and the current study could be provided by linguistic environments in which the EFL adult learners were situated. The Korean EFL learners' English language experience seemed more restricted to the classroom situation while the Chinese learners of White and Juffs (1998) were immersed in English even in China. Without extensive opportunity to use English, the Korean learners' performance on the Subjacency violation sentences appeared to be more correlated to the proficiency level supported by the demand of their academic studies rather than to age.

From the UG perspective, this type of research findings cannot be explained very well within the P&P approach which seems not tolerant of gradual increment of L2 knowledge, but favors instant success or failure in fixing the learners' grammar to that of target language. However, as discussed in Theoretical Background, the MP notion which suggests progressive process of acquisition whether it is L1 or L2 would provide a more plausible explanation about the EFL learners' different levels of acquisition of the Subjacency Principle depending on their education level. Thus, the MP notion can afford more comprehensible hypotheses such as Constructionist Model (CM) and the Ontogeny Phylogeny Model (OPM) since even though the research findings suggested that UG plays a role in the EFL adult learners' acquisition of subtle knowledge of target grammar, it could not but imply that there might be something more than, or in addition to, UG in L2 grammar. Flynn and Lust (2002) proposed that "language acquisition, including L2 acquisition, thus depends on more than just UG. By hypothesis, then, UG is necessary, but not sufficient for the acquisition of human language. The hypothesis that UG constrains adult L2 acquisition therefore does not entail that adult L2 acquisition will be developmentally identical in all respects to child L1 acquisition" (Flynn & Lust, 2002, p. 117).

The CM draws its central ideas from minimalism, but also adapts the coalition approach to L2A. The coalition model proposed by Hirsh-Pasek and Golinkoff (1995) suggested that "L1A is accomplished through the child's drawing on a coalition of resources such as prosodic input or social interaction" (recited in Herschensohn, 2000, p. 219). Thus, the CM, "—while holding that interlanguage grammars are UG constrained—claims that L2A is accomplished through a coalition of acquisition strategies that includes L1 transfer, UG and cognitive strategies" (Herschensohn, 2000, p. 205).

Similar to the CM, Major (2002) proposed the OPM to explain L2 learners' linguistic behavior. The OPM argues that "an interrelationship between L1, L2 and U: L2 increases, L1 decreases, and U increases and then decreases. This model assumes access to U, since interlanguage (IL) frequently has phenomena that are neither L1 nor L2" (p. 69). Major (2002) refers U to the set of linguistic universals which "embraces more than UG and includes learnability principles, markedness, underlying representations, rules, processes, constraints and stylistic universals" (p. 68). The OPM has considered "IL to have the components of L1, L2 and U, such that  $IL = \text{parts of L1} + \text{parts of L2} + \text{parts of U that are not already part of L1 and L2}$ " (p. 69). The current study as well as White and Genesee (1996), White and Juffs (1998), Perez-Leroux and Li (1999), and Kang (2002) strongly suggested that L2 learners are able to acquire L2 grammar to a considerable degree and their acquisition level is not directly related to age. That is, age-factor alone cannot cover all the complex phenomena observed in SLA. Even in White and Juffs (1998) which observed age-effects among the adult learners, the Chinese EFL learners' higher acquisition level compared with that of their ESL counterparts would be more closely related to the linguistic environment such as immersion situation. Likewise, Perez-Leroux and Li's (1999) ESL subjects' higher, almost

native-like performance, compared with that of their EFL counterparts, could be attributed to the higher proficiency level supported by their linguistic environment which was a university setting in an English speaking country where they had to use English extensively for their academic profession and everyday life activities.

## 5.2. Answer to Research Question 2

The results showed that most variables were not significant enough to predict the subjects' performance on the GJT. In the case of Freshmen group, the relationship between the frequency of using English in communication and the scores earned on the Subjacency violation sentence was found significant ( $r = -.582$ ,  $p = 0.05$ ). However, this relationship was indicated in reverse direction which seems contrasted with general tendency showing positive relationship. This result can be interpreted that their way of using English in communication might not be rigorous enough. That is, each instance of communication could be superficial or rudimentary so that it could not contribute to raising up the level of L2 grammar.

In the case of Junior & Senior group, the relationship between the frequency of reading in English and the scores earned on 21 grammatical sentences was found significant ( $r = .537$ ,  $p = 0.01$ ). For the Graduate group, the scores on the 21 grammatical sentences were significant predictor of the performance on the *wh*-beginning question sentences with  $r = .372$ ,  $p = 0.01$ . The other factor influencing the performance on the Subjacency violation sentences was the frequency of reading ( $r = -.267$ ,  $p = 0.05$ ). However, this relationship was indicated in reverse direction with weak magnitude. That is, no variable among the possible attributable variables was a significant predictor of the competence represented by the scores on the Subjacency violation sentences. Statistically, if one of the variables was significant,



then the variables taken together should be significant. But in the current study, the interrelationship among the variables was complicated so that it did not happen.

## 6. Conclusion

The research results suggested that the EFL learners have the capacity to acquire the subtle knowledge of L2 grammar represented by the Subjacency Principle, and the age-effects was not manifested among the Korean adult learners since the older learners' performance was observed higher than that of the younger ones on the UG-constraint violation sentences. In interpreting the linguistic behavior of the three groups of EFL adult learners, the MP notion was found more plausible in that it could embrace incomplete L2 grammar while recognizing the role of UG played in the interlanguage. A strong point of the MP notion could be found in the fact that it is able to accommodate the gradual increase of linguistic competence that the previous version of the UG theory, P&P approach could not elaborate very well since the P&P approach suggests instantaneous success or failure of parameter resetting to the L2 value. The P&P approach emphasizing the universality of principles and the importance of parameter setting to language acquisition may view the fundamental difference between L1A and L2A as the inaccessibility of UG to L2 learners. But the minimalist approach may see the difference as the incomplete control of the language particular lexicon that crucially interfaces - through the morphology- with the syntax. This will result in a gradation of acquisition of lexical and morphological features of the L2 learners (Herschensohn, 2000, p. 81).

The MP notion seems more consistent with a current approach to the interpretation of L2 learners' linguistic ability pictured by Multi-competence Model proposed by Cook (2001). The

Multi-competence, in other word, the L2 user model recognizes "the distinctive nature of knowing two or more languages and does not measure L2 knowledge by a monolingual standard" (Cook, 2001, p. 194). As Bialystok and Hakuta (1999) discussed, "the experience and knowledge we accumulate as we grow changes the way in which new information, including new languages, will be represented, and these differences can be detected as different patterns of neural organization in the brain" (p. 178). Thus, what adult and adolescent learners would achieve should be evaluated in its own terms rather than strictly measured against the achievement of L1ers. As Cook (2002) suggested, "the mind of an L2 user therefore differs from that of a monolingual native speaker in several ways other than the possession of the second language; multi-competence is not just the imperfect cloning of monolingual competence, but a different state" (pp. 7-8).

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