

**THE ACQUISITION OF THE EASY-TO-V STRUCTURE BY  
KOREAN ADULT LEARNERS OF ENGLISH: WHAT INFLUENCES  
THEIR INTERPRETIVE BEHAVIOR?**

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Much research in second language acquisition has been carried out investigating a learner's linguistic system while focusing on only a single linguistic level without reference to the function of other linguistic elements. Considering how one acquires a language, we cannot fail to include semantics and pragmatics as well as syntax since all three simultaneously influence the learner's competence and performance in the new language. Gass (1989) claims that a composite picture of the nature of second language acquisition must include studies investigating the simultaneous acquisition of grammatical components. In this regard, the present study is intended to scrutinize the sentence-processing strategies of Korean adult learners of English emphasizing the ways in which they interpret the easy-to-V structure sentences. In order to broaden our understanding of the acquisition of the complex syntactical structure which appears to be a likely candidate for late acquisition, this study takes into consideration a semantic approach as well as a syntactic approach to language acquisition taking the competition model (Bates & MacWhinney, 1982; MacWhinney, 1987a; MacWhinney & Bates, 1989) as its basis.

***Competition Model***

Central to the model is the idea of form-function mappings. Any one form may realize a number of functions; on the other hand, any one function can be realized through a number of forms. The L2 learner's task is to discover (a) which forms are used to realize which functions in the L2 and (b) what weights to attach to the use of individual forms in the performance of specific functions. Form-function mappings are characterized as being of varying 'cues' and the 'strengths' of cues from language to language. There are four possible exponents which influence a speaker to determine

relationships among elements using cues: (a) lexical items; (b) word order; (c) morphological markers; and (d) grammatical prosody. For instance, English uses word order (syntactic) cues as a primary determinant, whereas Italian, a language in which word order is more flexible, relies more heavily on morphological agreement as well as on semantics and pragmatics.

The competition model assumes that semantic (lexical), grammatical (syntactic), and auditory (phonological) cues are concurrently in process in the brain in order to determine the relationships among elements and that multiple cues are in 'competition' for one another for a limited number of channels. For example, in a sentence like 'that girl they love a lot' there is competition among 'girl,' 'they,' and 'lot' for the role of agent of the verb. 'Lot' rapidly loses out because, unlike 'girl' and 'they', it is inanimate, and because it follows rather than precedes the verb. The candidacy of 'girl' is promoted by its position in the sentence—it is the first noun—but ultimately, this cue is not strong enough to overcome two other cues. 'They' is the strongest candidate for agent because it is nominative in case and because it agrees in number with the verb.

There have been some attempts to specify how learners use the information available to construct their language system within the framework of the competition model. The studies take the form of sentence-interpretation experiments using bilingual subjects in a within-subjects, cross-language design. That is, speakers of different languages are asked to identify the function of different cues in both L1 and L2 sentences that have been designed to reflect both the coordination and competition of cues. One of the interesting questions raised from the results is whether lexical semantics plays the most significant role in L2 learners' sentence comprehension. Gass (1989, p. 194) even claims that "animacy cues may have a universal prepotency in second language learning," with semantics being a stronger language interpretation strategy than syntax. Studies by Bates and MacWhinney (1981), Harrington (1987), Sasaki (1991), Gass (1987, 1989), and Sasaki (1994) support this view, while results reported by McDonald (1987), Kilborn and Cooreman (1987), and Wulfect, Juarez, Bates, and Kilborn (1986) disagree with this claim. With the question mentioned in mind, the purpose of the present study is to provide more information about L2 learners' sentence-processing strategies compared with adult L1 speakers by investigating how they differently approach interpreting the easy-to-V structure sentences.

### ***Linguistic Complexity of the Easy-to-V Structure***

When grammatical relations are explicit in the surface structure of the sentence, as in (1), the interpretive task of the listener is facilitated.

(1) John ate an apple.

In (1), the listener has no difficulty in determining that *John* is the subject of the sentence, and that *an apple* is the object of the verb. This basic relationship is expressed by normal SVO word order. Consider now sentences (2) and (3).

(2) John is eager to see (the film).

(3) John is easy to see.

In sentence (2), *John* is the subject of *eager* and also the implicit subject of the infinitival complement verb *see*. The SV order is maintained. In (3), however, the word order is misleading. *John* is actually the implicit object of the complement verb *see*. The implicit subject of the second verb is omitted in the surface structure of (3), and the listener must understand that it is "someone else." Within a transformational grammar framework, it is traditionally assumed that the derivation of sentence (3) requires the application of a syntactic transformation (Bresnan, 1971). Accordingly, sentence (3) would be derived from the approximate structure given in Figure 1 under a Tough Movement type of analysis. The Tough Movement transformation shifts the complement object into the matrix subject position, as indicated by the arrow. It is consequently considered that, although (2) and (3) have a similar surface structure, the underlying relationships between the words are different.

As Cromer (1970) has pointed out, though, it is not enough to say that similar sentences with different interpretations are derived from different base structures; it is also necessary to state how a listener determines, from input (surface structure), what underlying structure is to be used in understanding the sentence. He also notes it would seem that the interpretation of sentences of the type, '*John is \_\_\_\_\_ to see*', depends on the particular adjective used in the space at least when nouns and verbs are held constant. In this respect, we shall next explore the differences between the adjectives of the *easy* type and the *eager* type in terms of their semantic structures. In order to clarify semantic features of sentences involving the two types of adjectives in certain constructions, Yamaoka's (1988) analysis is adopted in the following.

(4) Mary is eager.

(5) This is easy.

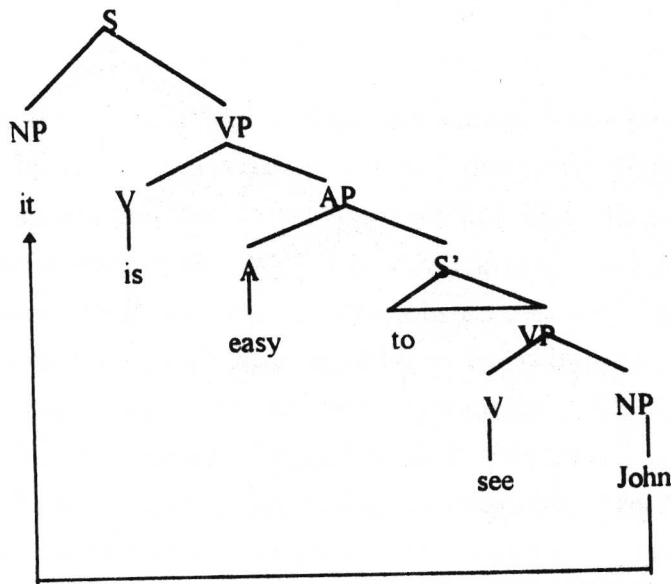


Figure 1. Syntactic transformation of Easy-to-V

In (4), the state described by *eager* is a judgment made by the speaker, and the state, in fact, originates from Mary herself. In other words, *eager* is described as an inherent state attributive to Mary. In contrast, *easy* in (5) is a judgment by the speaker, but it is a subjective judgment which does not inherently derive from *this*. The differences in the underlying semantic representations of sentences (4) and (5) are, therefore, twofold. One is the “inherent attributability” of the adjective; while *eager* is inherently attributive to *Mary*, *easy* is not to *this*. The second difference is concerned with the relationship between the speaker and his or her judgment—while in *easy* the relationship is direct, it is indirect in *eager* in that eagerness is expressed as the state originating in Mary herself. Figure 2 represents these differences.



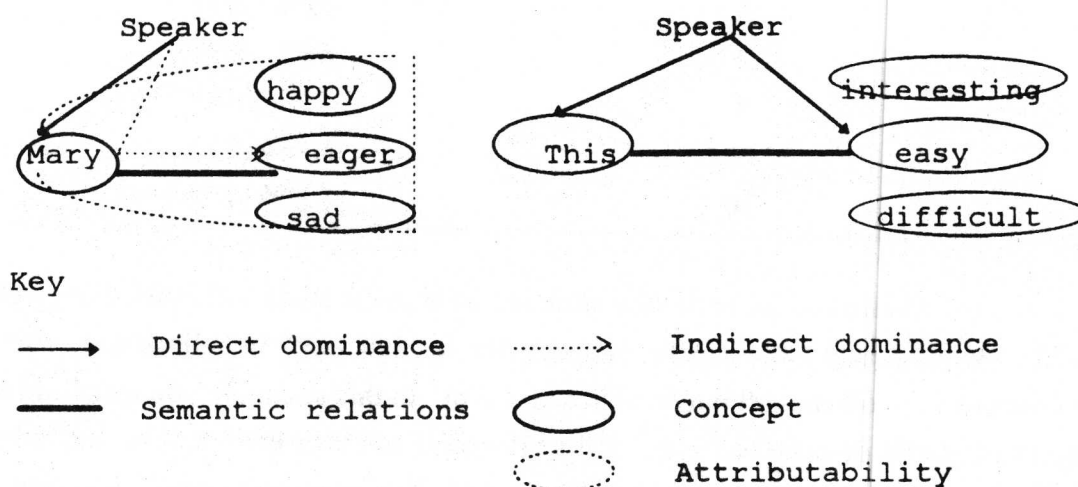


Figure 2. Figurative representation of the differences in semantic construction (Yamaoka, 1988)

### *Previous Studies of the Easy-to-V Structure*

Carol Chomsky (1969) studied forty child L1 learners of English between the ages of five and ten from widely varying socioeconomic backgrounds. While individual children were being interviewed, they were shown a blindfolded doll and were asked: (a) *Is the doll easy to see or hard to see?*, (b) *Would you make her easy/hard to see* (choice of easy/hard in question 2 determined by child's response to first question), (c) (for child who answers *Hard to see*) *Why was she hard to see in the beginning? What did you do to make her easier to see? Why did that make her easier to see?* In her experimental study, Chomsky found that the acquisition of the construction is not completely achieved before the age of nine for children learning English as their native language. Her results are shown in Table 1.

Table 1  
*Accuracy of Comprehension of the Easy-to-V Structure in Terms of Age of Native Language Learners (C. Chomsky, 1969)*

Age	Accuracy rate
5	22% (2/9)
6	42% (3/7)
7	86% (6/7)
8	75% (6/8)
9	100% (8/8)
10	100% (1/1)

Several criticisms of the particular situation used in the study were raised by Cromer (1970). He pointed out that a child, in egocentric fashion, tends to believe that if his own eyes are covered, others will not be able to see him. In this situation, younger children might have partly de-centered to the doll's viewpoint and answered that the doll is *hard to see* since others are believed not to be able to see it if its eyes are covered. It is also possible to consider the effect of the artificiality of experimental situations on the answers of young children. In the somewhat bizarre situation of suddenly being presented with a blindfolded doll, young children may feel that they must do something with the blindfold, and thus make the doll *easy to see* by removing it (Chomsky reports that every single child who had answered *hard to see* had removed the blindfold as his response to the request to make the doll *easy to see*).

In order to overcome the methodological shortcomings in Chomsky's experiment, Cromer (1970) conducted a similar study using a different procedure with 41 children learning English as their L1, ranging in age from 5 years 3 months to 7 years 5 months. The children were given two puppets, a wolf and a duck, and they were asked to make the wolf bite the duck, and also to make the duck bite the wolf as warm-up. Each child was tested individually. The child was given, for example, *The duck is easy to bite*, and was asked to demonstrate who would bite with one of the puppets. For analysis, Cromer divided the children into three groups:

Primitive rule users (PRU): children who consistently answered every sentence by showing the named animal to be the one doing the biting on the basis of a 'primitive' rule of identifying the deep subject as being the surface subject.

Intermediates (I): children who gave mixed answers, sometimes interpreting the surface subject as the object of the deep structure, but not consistently or correctly.

Passers (P): children who consistently behaved correctly.  
The results are shown in Table 2.

Table 2  
*Three Developmental Stages of Response Shown by Mental Age on the PPVT  
(Peabody Picture Vocabulary Test) (adapted from Cromer, 1970)*

Mental age on PPVT (years:months)	PRU	I	P
2:11 - 5:7	17	10	0
5:9 - 6:6	0	8	0
6:8 - 10:8	0	1	5

Following the two studies in child L1 learners of English, several studies investigated the acquisition of the same construction by adult learners of English as a second language. First, Cook (1973) replicated Cromer's experiment with 67 foreign adults having different native language backgrounds. They were all students studying English at Ealing Technical College. Their mother tongues were mixed: Spanish (15), German (13), Persian (9), French (7), Italian (6), Polish (7), and Arabic (12), as well as Indonesian, Danish, Serbo-Croat, Chinese, Greek, Portuguese, Hebrew, and Armenian (1 of each). The results showed that the foreign adults divided into the same three groups: Primitive rule users, Intermediates, and Passers. Cook also indicated that the three developmental stages seem to correlate with the amount of time spent learning English. In other words, success in understanding the test sentences was linked to the amount of time that had been spent learning English, as for the children it was linked to mental age. The results are shown in Table 3.

Table 3  
*Relationship between the Developmental Stages and the Amount of Time Spent Learning English (adapted from Cook, 1973)*

Developmental stage	Number of subjects	Average time spent learning English (in their own country/in England)
PRU	7	2 years 2 months/ 2 months
Intermediates	45	3 years 5 months/ 7 months
Passers	14	4 years 8 months/ 1 year

The similar pattern of results led Cook to conclude that adult learners of English may pass through the same developmental stages in the acquisition of complex syntactic structures as native children.

The second relevant study is by d'Anglejan and Tucker (1975). Their experiment was carried out to test the hypothesis that first and second language learning derive from the same underlying process. The subjects were male military personnel attending the language school at the Canadian Forces Base. They were divided into two experimental groups—beginners (BEG) and advanced (ADV)—of twenty subjects each comprised of French Canadians. A control group of twenty English Canadians were also included to provide a check on the validity of the text material. Each target sentence (e.g., *Christine is easy to influence*) and control sentence (e.g., *Jack is eager to return*) was read by the experimenter to each subject, who was asked a simple question (e.g., *Christine is easy to influence—Who is doing the influencing?; Jack is eager to return—Who will return?*) to probe his comprehension of the meaning of the sentence. The results again showed a similar developmental pattern for the acquisition of the structure although the BEG made a relatively high proportion of errors (mean = .73) in processing the target sentences.

The study by Bongaerts (1983) also dealt with the same question using Dutch learners of English. All sixty subjects were students at a secondary school in Nijmegen, which prepares students for university entrance. The research instruments were adopted from d'Anglejan and Tucker, and partly adapted. The results were consistent with the others except that the structure was relatively easier for the Dutch than for the French. Bongaerts argued that this fact can be accounted for by differences in L1 learning experiences since Dutch learners of English have already been confronted with the

problem of surface structure similarity between *eager to see* and *easy to see* sentences in the course of learning their L1, whereas French learners of English have not.

Different from the studies mentioned above, the study by Yamaoka (1988) was carried out in order to show the validity of a semantic approach to language acquisition. Yamaoka argues that all of the studies introduced earlier attempted to clarify the development of the structure using only sentences of a particular type—the subjects in the surface structures of the test sentences of the easy-to-V type are all animate—thus failed to investigate the problem in its full scope. In the study, the easy-to-V structure was analyzed in terms of semantic transparency and grouped into four types of structure depending on how straightforwardly the underlying semantic structure of a sentence is recognized from its surface realization:

- (1) The book is easy to read.
- (2) She is easy to deal with.
- (3) He is easy to understand.
- (4) Jack is easy to please.

Sentences like (1) are the most transparent having an inanimate subject and a less confusing verb, *read*, while (4) is of the least transparent type having an animate subject and a confusing verb, *please*. Type (2) is less transparent than (1) in terms of the animacy of the subject, but it is more transparent than (3) because of the syntactic feature of a detached preposition, whereas (3) is more transparent than (4) owing to its less confusing verb, *understand*. The study was conducted with the underlying assumption that the factors contributing to the determination of the degree of transparency constitute a prototype organization ranging from prototype sentences having the most features contributing to its transparency to peripheral types with the fewest of such features.

The test material, which consisted of 16 test sentences with easy-type adjectives and 12 control sentences with eager-type adjectives, was administered to 34 Japanese students at a Japanese college of foreign languages. The students were asked to translate the sentences into Japanese. The translations were scored according to three classified groups: (a) correct translation; (b) nonsense translation; and (c) reversed translation. The results are shown in Table 4. Yamaoka drew a conclusion from the results that the learner was likely to develop the acquisition of the structure from its prototype towards its more and more peripheral types, although the experimental data did not represent the developmental nature itself of the easy-to-V structure.



Table 4  
*Results of the Responses by Japanese College Students (n=34) (adapted from Yamaoka, 1988)*

Sentence type	1			2			3			4		
	C	N	R	C	N	R	C	N	R	C	N	R
easy	34	0	0	33	0	1	34	0	0	18	2	14
difficult	34	0	0	30	1	3	28	2	4	17	2	15
fun	34	0	0	24	2	8	11	0	23	19	7	8
hard	33	1	0	29	0	5	29	0	5	15	2	17
Total	135	1	0	116	3	17	102	2	32	69	13	54
Mean	3.97			3.41			3.00			2.03		

C: 'correct' translation

N: 'nonsense' translation

R: 'reversed' translation

### *Research Questions and Hypotheses*

One characteristic common to the previous studies of this structure is the fact that they all tried to show the developmental pattern for the acquisition of the easy-to-V structure. However, the present study was designed to investigate the sentence-processing strategies of Korean-speaking learners of English focusing on their interpretive patterns of behavior in order to address the issues discussed within the framework of the competition model. This study deals with the following research questions:

1. Do native speakers of English and Korean EFL learners respectively show different degrees of sensitivity to cues in interpreting the easy-to-V sentences?
2. Do Korean EFL learners depend more on animacy (lexical-semantic) cues than on grammatical (syntactic) cues in order to comprehend the easy-to-V sentences?

The hypothesis for research question 1 is that for NSE (native speakers of English) there would be no significant effect for animacy cues, but there would be one for grammatical cues in interpreting easy-to-V sentences. According to Bates and MacWhinney (1981), language development essentially is the process of adjustment of sensitivity to various types of cues in interpreting the meaning of a sentence or phrase. Since native speakers have already developed the required sensitivity to the cue strengths of various linguistic input, they will be more likely to use their relevant mental structural



knowledge, while Korean EFL learners will apply animacy cues to understand the sentences due to the unavailability of proper grammatical cues.

As for research question 2, it was hypothesized based on two assumptions that the Korean EFL learners will rely more on animacy cues than on grammatical cues. First, the easy-to-V sentences are in noncanonical English word order, so that such complexity of the structure requires highly advanced mental grammar to interpret correctly. Secondly, although L1 transfer effect was not taken into consideration as a factor in the research design, it is assumed that Korean EFL learners would more or less adopt strong animacy cues from their L1. Consider the following Korean version of easy-to-V sentences (note that a subject noun phrase is marked with one of the particles, such as *eun*, *neun*, *ie*, *ga*):

(1) Chack     *ie*     iyhaehagui     *ga*     uryubda.  
       book     SUBJ     understand     SUBJ     hard  
       “The book is hard to understand”

(2) Mary     *neun*     iyhaehagui     *ga*     uryubda.  
       Mary     SUBJ     understand     SUBJ     hard  
       “Mary is hard to understand”

Sentence (1) in Korean is understood with only one possible interpretation due to the inanimate subject. On the other hand, sentence (2) has two possible interpretations: (1) it is hard to understand Mary and (2) it is hard for Mary to understand (something). Therefore, we can say that within the domain of the easy-to-V structure, animacy cues are more determinant than case-marking cues in Korean.

## METHOD

### *Subjects*

Two groups participated in the present study. The first group was comprised of 32 native speakers of English (NS). They were drawn from a variety of graduate programs in the University of Hawaii at Manoa: ESL (13), Mathematics (5), Political Science (4), Asian Studies (2), Economics (2), Philosophy (2), Religion (2), Business Administration (1), and Pacific Island Studies (1). The second group consisted of 130 Korean EFL learners of English who are students at two different universities in Korea—56 freshmen who are majoring in English language at Namseoul college and 74 undergraduate and two graduate students at Sogang University. Their English learning environment had been exclusively a classroom situation. The participants had received an average of 7.4 years of instruction in English as a foreign language. Their average age was 21.1 years.

There were 78 females and 72 males in this group. Their major fields of study were: English (67), Science (43), and Business Administration (20). At the time of test administration, they were enrolled in one of the three college English courses: Freshman English, English Composition, or Business English. The level of English proficiency of the participants is assumed to vary since they themselves chose to register for the courses rather than being placed into a certain course matching their proficiency levels.

### **Materials**

A questionnaire containing 36 sentences which request responses of grammaticality using a five-point likert-type scale was used as materials for this study (see Appendix). Written instructions on how to respond to the grammaticality judgment tasks were given before the test sentences. Six test sentences were adopted from d'Anglejan and Tucker (1975) and Bongaerts (1983), another five sentences from Berman (1973), and the remainder were created by this researcher. The questionnaire contained two types of sentences, 28 easy-type sentences and eight eager-type sentences which served as distractors. In the easy-type sentences, six adjectives, such as *easy*, *difficult*, *hard*, *interesting*, *amusing*, and *fun*, were used as predicates, and six eager-type adjectives, *eager*, *anxious*, *happy*, *sad*, *glad*, and *willing* were used in the eager-type sentences. Within easy-type, there were also four sub-types devised to investigate the effect of animacy and grammaticality on the test sentences: (a) grammatical easy-type sentences with an animate subject (Ani-G) (e.g., Mary is hard to understand sometimes); (b) grammatical easy-type sentences with an inanimate subject (Inani-G) (e.g., A good impression is difficult to make); (c) ungrammatical easy-type sentences with an animate subject (Ani-Ug) (e.g., \*John was fun to go fishing); (d) ungrammatical easy-type sentences with an inanimate subject (Inani-Ug) (e.g., \*The theater is easy to be filled with people).

The reliability of the four sub-types was first calculated separately for NS group and KEFL (Korean EFL learners) group, and then the combined reliability for both groups was also calculated using the K-R 20 estimate. The reliabilities are reported in Table 5. The results indicate that the questionnaire was reasonably reliable considering that each sub-type only has seven items.

Table 5  
*Reliabilities of Four Sub-types*

	Ani-G	Inani-G	Ani-Ug	Inani-Ug
NS	.77	.73	.78	.63
KEFL	.58	.52	.75	.50
NS & KEFL	.81	.73	.85	.79

### *Procedures*

For NS group, the participants completed the questionnaire individually. The researcher made sure that they read the instructions about grammaticality evaluations before responding to test sentences. There was no time constraint for them to complete the questionnaire, yet most of them did not take more than ten minutes.

As for KEFL group, the test was administered during class hour by two instructors who were in charge of the courses that the participants were enrolled in. The Korean participants were also read the instruction about grammaticality judgments written in Korean and were given maximum thirty minutes to finish the questionnaire.

### *Analyses*

Among the total of 36 test sentences, 28 were included in data analyses, with the rest being eight distractor sentences excluded. Since there were four sub-types within the 28 sentences—(a) grammatical easy-type sentences with an animate subject (Ani-G); (b) grammatical easy-type sentences with an inanimate subject (Inani-G); (c) ungrammatical easy-type sentences with an animate subject (Ani-Ug); (d) ungrammatical easy-type sentences with an inanimate subject (Inani-Ug)—the test sentences were grouped into matching sub-types; as a result, each sub-type consisted of seven test sentences.

The five-point (-2 - +2) Likert scale scores on the grammaticality judgment questionnaires served as the dependent variable of this study. The principal independent variable of interest here was grammaticality of the test sentences, that is, whether the sentence is grammatical or ungrammatical. This variable is labeled Grammaticality in the analyses reported below, and it has two levels. A second independent variable of interest

was animacy of the surface subject of the test sentences, that is, whether the surface subject of the sentence is animate or inanimate. This variable is labeled Animacy and has two levels. The third independent variable was the participants' first language background, that is, whether they are native speakers of English or Korean native-speaking learners of English. This variable is labeled Group Type in the analyses reported below, and it also has two levels.

Three-way analysis of variance (ANOVA) procedures were calculated with Likert scale scores as the dependent variable and Group Type treated as a grouping factor, while Grammaticality and Animacy were treated as repeated measures factors. In order to make the discussion of results more accessible for accurate interpretations in terms of the research questions, two two-way repeated measures ANOVAs were also calculated for each group separately, NS and KEFL group, with Grammaticality and Animacy treated as independent variables. The alpha level was first set at .05 experiment-wise and then divided by three since three ANOVA procedures were used. Hence, the significance level was set at  $\alpha < .0167$  for individual statistical decisions.

## RESULTS

The means and standard deviations for the grammaticality judgments by the NS and KEFL group are shown in Table 6. The scores reported here are based on the five-point scale (-2, -1, 0, 1, 2). Figure 3 also presents the mean differences between the NS and KEFL group in each sub-type. It seems for the NS group, the two sub-types which contain grammatical sentences regardless of their differences in animacy contrast with the other two sub-types containing ungrammatical sentences, whereas for the KEFL group, the two sub-types which consist of animate sentences regardless of their differences

Table 6  
*Descriptive Statistics for Group Type and Sentence Sub-type*

Group Type	Sub-type of test sentences											
	Ani-G			Inani-G			Ani-Ug			Inani-Ug		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
NS	32	1.62	.46	32	1.71	.44	32	-1.86	.27	32	-1.42	.41
KEFL	130	-.22	.73	130	.39	.67	130	-.18	.90	130	.38	.66

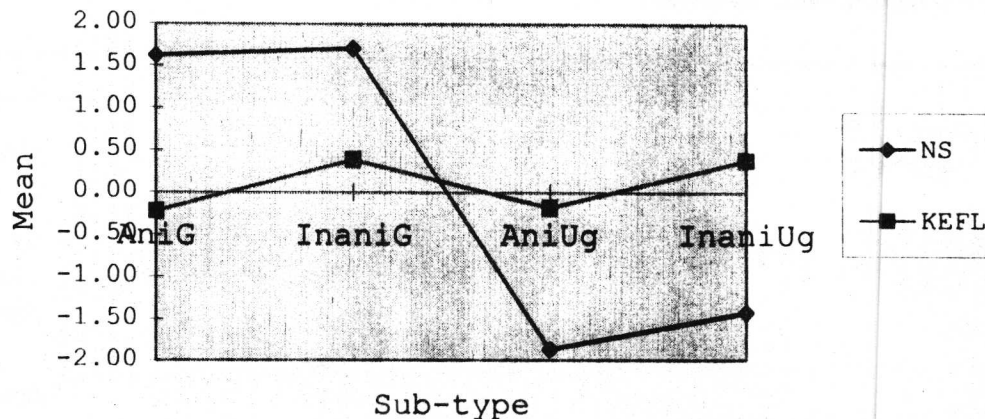


Figure 3. Mean differences in four sub-types of easy-to-V Sentences by KEFL group in comparison to NS group

in grammaticality contrast with the other two containing inanimate sentences in their mean scores. Comparing the standard deviations of NS and KEFL scores, Table 6 indicates that the NS group's performance on grammaticality judgments are somewhat more homogeneous than the KEFL group's, as indicated by the smaller standard deviations for the NS group. In order to determine whether apparent differences among standard deviations were significant, an  $F_{\max}$  test was used to compare the smallest to the largest standard deviation by squaring them and forming a ratio (i.e., thus, it tests the homogeneity of variances) (Brown, 1991). The results of the  $F_{\max}$  test which was applied for each sub-type, were 2.49, 2.27, 11.44, and 2.51, respectively all significant at  $p < .01$ ; ( $df = 31, 129$ ). Thus the observed differences between standard deviations are interpreted as probably due to other than chance factors.

The results shown in Table 7 indicate that there were significant differences for two of the main effects—Grammaticality and Animacy—and the interaction effect for Group Type by Grammaticality. However, these results do not seem sufficient to answer the research questions. For example, although Animacy was found to be a significant effect, the result does not explain whether the effect was significant in NS group or KEFL group or in both of them. That is, the results do not explain where the differences lie in terms of



the two main effects. Therefore, two two-way repeated-measures analysis of variance (ANOVA) procedures with Grammaticality and Animacy as the main factors were conducted separately, one for the NS and one for the KEFL group (see Tables 8 & 9).

Table 7  
*Three-Way ANOVA with Repeated Measures*

Source	SS	df	MS	F	p
Between subjects effects	.65	1	.65	.97	.326
Group Type	106.94	160	.67		
Within groups					
Within subjects effects	277.08	1	277.08	504.06	.000
Grammaticality	282.67	1	282.67	514.23	.000
Group X Gram.	87.95	160	.55		
Within groups	18.71	1	18.71	35.88	.000
Animacy	2.67	1	2.67	5.12	.025
Group X Animacy	83.42	160	.52		
Within groups	.62	1	.62	3.28	.072
Gram. X Animacy	1.09	1	1.09	5.76	.018
Group X Gram. X Animacy	30.31	160	.19		
Within groups					

$p < .0167$

Table 8  
*Repeated Measures ANOVA within NS Group*

Source	SS	df	MS	F	p
Between subjects effects	7.55	31	.24		
Within groups					
Within subjects effects	348.76	1	348.76	1128.69	.000
Grammaticality	9.58	31	.31		
Within groups	2.26	1	2.26	47.56	.000
Animacy	1.47	31	.05		
Within groups	1.05	1	1.05	14.51	.000
Gram. X Animacy	2.23	31	.07		
Within groups					

$p < .0167$



Table 9  
 Repeated Measures ANOVA within KEFL Group

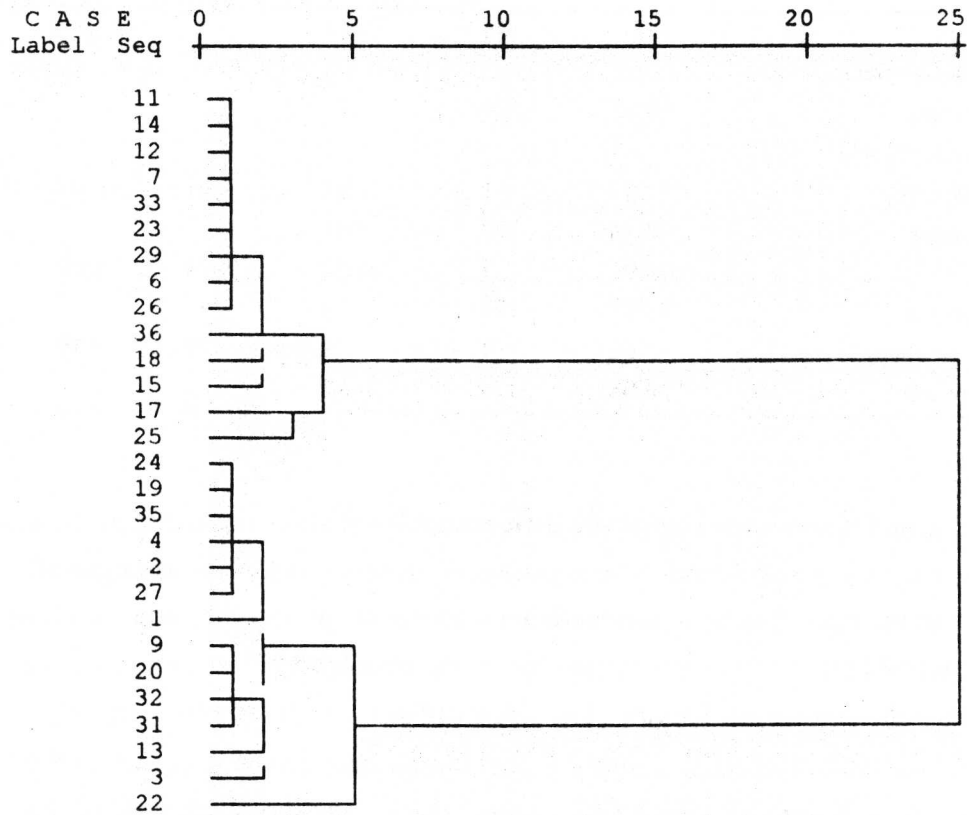
Source	SS	df	MS	F	p
Between subjects effects					
Within groups	99.40	129	.77		
Within subjects effects					
Grammaticality	.04	1	.04	.06	.810
Within groups	78.37	129	.61		
Animacy	44.93	1	44.93	70.74	.000
Within groups	81.94	129	.64		
Gram. X Animacy	.08	1	.08	.38	.538
Within groups	28.08	129	.22		

$p < .0167$

For the NS group, there were significant differences for the two main effects, and the interaction effect was also found to be significant. In order to test the strength of association in the data, that is, to take into account the proportion of variance in the dependent variable that can be accounted for by the independent variable,  $\eta^2$  was calculated for the significant factors. The results of  $\eta^2$  were .94, .01, and .00, respectively for Grammaticality, Animacy, and Grammaticality X Animacy in the NS group and .14 for Animacy in the KEFL group. The results show that 94% of the variability in the dependent variable has been accounted for by Grammaticality within the NS group, even though the other main effect and the interaction effect also turned out to be significant. For KEFL data, Animacy accounted for only 14% of the variability in the dependent variable.

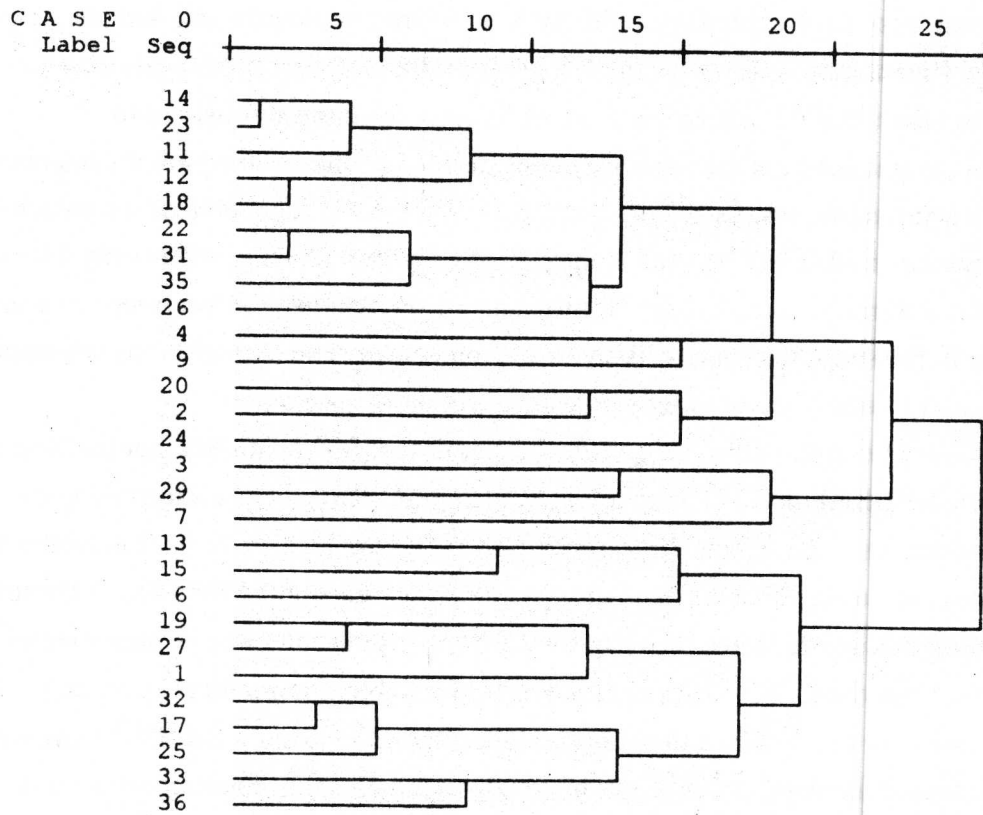
Cluster analyses were also performed based on the participants' responses on the test sentences which were included in earlier data analyses in order to see whether the test sentences are valid for measuring what they were supposed to (see Figures 4 & 5). The cluster procedure produces hierarchical clusters of items based on their dissimilarity or similarity on one or more variables. The cluster analyses of NS group (see Figure 4) revealed two clearly distinguishable groups by Grammaticality; grammatical sentence items clustered together in the bottom half of the dendrogram and ungrammatical sentence items in the upper half. However, their judgments were not distinguishable in terms of Animacy. Figure 5 indicates that there was no unique pattern for sentence clustering. The KEFL group judgments were dispersed without showing any interpretable similarity or dissimilarity among them.

## Rescaled Distance Cluster Combine



+ Animate,+ Grammatical: 4, 9, 20, 22, 24, 31, 35  
 - Animate,+ Grammatical: 1, 2, 3, 13, 19, 27, 32  
 + Animate,- Grammatical: 7, 11, 12, 14, 18, 23, 33  
 - Animate,- Grammatical: 6, 15, 17, 25, 26, 29, 36

Figure 4. Cluster analysis for NS group responses



- + Animate,+ Grammatical: 4, 9, 20, 22, 24, 31, 35
- Animate,+ Grammatical: 1, 2, 3, 13, 19, 27, 32
- + Animate,- Grammatical: 7, 11, 12, 14, 18, 23, 33
- Animate,- Grammatical: 6, 15, 17, 25, 26, 29, 36

Figure 5. Cluster analysis for KEFL group responses

## DISCUSSION/CONCLUSION

Returning to research question 1, it is clear that the native speakers of English and the Korean EFL learners showed different degrees of sensitivity to two different cues in interpreting the easy-to-V sentences. Although both Grammaticality and Animacy turned out to be significant main effects for the NS group unlike the first hypothesis, it seems reasonable to claim that the native speakers of English were more sensitive to grammatical (syntactic) cues than animacy cues in interpreting the easy-to-V sentences as we take into account the results of  $\eta^2$  strength of association test; 94% of the variability in the dependent variable has been accounted for by Grammaticality, while only 1% was accounted for Animacy. Besides, the significance of the Animacy effect does not seem problematic in the sense that one is likely to rely on context and lexical items which are semantic level of cues when coming across ungrammatical sentences.

The results concerning research question 2 supported the hypothesis that the Korean EFL learners depended more on animacy cues than grammatical cues interpreting the easy-to-V sentences—the repeated measures ANOVA described in Table 9 indicates that only Animacy was a significant effect and even that only accounted for 14% of the total variance in the design. It seems the easy-to-V structure does not exist in their mental grammar, so when the KEFL learners failed to find reliable grammatical cues, they resorted to animacy cues. Since the structure does not reflect canonical SVO word order in English, its surface word order might have affected their interpretation on the test sentences as well, though surface word order transfer was not considered as a factor in this study. For example, in a sentence like *The man is hard to like*, 'the man' is in preverbal position, which may possibly be considered to be a candidate for a subject of the sentence, and due to its animacy, 'the man' can be assigned a thematic role of agent as well as that of patient. Another possible conjecture to explain their animacy-dependent interpretation strategy would be a hypothetical transfer of sensitivity to animacy cues dominant in L1 as discussed earlier in hypotheses. This issue also relates to a learner's proficiency in a target language. The findings reported by Sasaki (1994) indicate that the learners at earlier stages of proficiency showed sensitivity to the types of cues that are dominant in L1 interpreting L2 sentences, whereas learners at the later stages were more dependent on proper L2 sentence-processing cues. In regard to L1 transfer, MacWhinney (1987b) claims that in case of similar mappings in both L1 and L2 in relation to cues, there will be positive transfer, but in areas where L1 and L2 show little formal correspondence, only the basic positive transfer of functions will be possible.

Nonetheless, we cannot claim an L1 transfer effect in relation to our participants' proficiency level since their level of proficiency was not controlled in the present study.

The results have paralleled some of the findings from earlier studies in the way that these Korean EFL learners showed a stronger animacy-based sentence interpretation strategy than syntax-based. Nevertheless, as MacWhinney (1987b) points out, it seems rather hasty to ascribe a universal built-in prepotency for animacy considering other variables which were not taken into account in this study such as the possibility of L1 transfer and overall target language proficiency of the participants. Furthermore, cross-linguistic analyses of both English and Korean data would be essential to find out the relationship between the degree of sensitivity to animacy cues and L1 transfer in order to provide more thorough information about the way the Korean EFL learners handle conflicting and competing language data.

Placing the results within the framework of the Competition Model to discuss implications in the context of second language acquisition, it is assumed that the developmental shift of sentence-processing strategies by learners would be from an initial dependence on cue reliability to dependence on conflict validity. McDonald (1986) suggests that a change of cue strength occurs when learners notice that their sentence interpretation is incorrect. In that process, the strength of the cues that indicated the correct interpretation will increase. The cue strengths will approximate the overall validity measured in the input learners hear or read. As this approximation process continues, learners will have fewer incorrect interpretations for nonconflict sentences, and conflict sentences will be the major source of incorrect interpretations. At this point, cue strengths will gradually change to approach conflict validity. In this respect, a learner's conscious attention and awareness (Schmidt, 1995) may have a crucial role in the approximation of cue strengths to a nativelike level.

### ***Further Research***

Some of the questions raised in the process of doing this research are listed here in the hope that they will stimulate further research:

1. Will similar results be obtained by replicating this study at other institutions in Korea?
2. Will there be a positive correlation between target language proficiency and dependency on grammaticality interpreting easy-to-V sentences?
3. What is the relationship between the degree of sensitivity to animacy cues and L1 transfer?

4. Does the surface word order of easy-to-V sentences affect their sentence interpretation by Korean EFL learners?
5. Do KEFL learners' sensitivity to types of cue gradually shift from L1-like to L2-like?



## REFERENCES

- Bates, E., & MacWhinney, B. (1981). Second language acquisition from a functionalist perspective: Pragmatic, semantic, and perceptual strategies. In H. Winitz (Ed.), *Annals of the New York Academy of Sciences conference on native and foreign language acquisition*. (pp. 190-214). New York: New York Academy of Sciences.
- Bates, E., & MacWhinney, B. (1982). Functionalist approaches to grammar. In E. Wanner & L. Gleitman (Eds.), *Language acquisition: The state of the art*. New York: Cambridge University Press.
- Berman, A. (1973). A constraint on tough-movement. *Chicago Linguistic Society*, 9, 34-43.
- Bongaerts, T. (1983). The comprehension of three complex English structures by Dutch learners. *Language Learning*, 33(12), 159-182.
- Bresnan, J. (1971). Sentence stress and syntactic transformations. *Language*, 47, 257-281.
- Brown, J. D. (1991). Statistics as a foreign language—part 1: What to look for in reading statistical language studies. *TESOL Quarterly*, 25(4), 569-603.
- Chomsky, C. (1969). *The acquisition of syntax in children from 5 to 10*. Cambridge, MA: MIT Press.
- Cook, V. J. (1973). The comparison of language development in native children and foreign adults. *IRAL*, 11(1), 13-28.
- Cromer, R. F. (1970). Children are nice to understand: Surface structure clues for the recovery of a deep structure. *British Journal of Psychology*, 61(3), 397-408.
- d'Anglejan, A., & Tucker, G. R. (1975). The acquisition of complex English structures by adult learners. *Language Learning*, 25(2), 281-296.
- Gass, S. (1987). The resolution of conflicts among competing systems: A bidirectional perspective. *Applied Psycholinguistics*, 8, 329-350.
- Gass, S. (1989). How do learners resolve linguistic conflicts? In S. Gass & J. Schachter (Eds.), *Linguistic perspectives on second language acquisition* (pp. 183-200). Cambridge: Cambridge University Press.
- Harrington, M. (1987). Processing transfer: Language-specific processing strategies as a source of interlanguage variation. *Applied Psycholinguistics*, 8, 351-377.
- Kilborn, K., & Cooreman, A. (1987). Sentence interpretation strategies in adult Dutch-English bilinguals. *Applied Psycholinguistics*, 8, 415-431.
- MacWhinney, B. (1987a). The competition model. In B. MacWhinney (Ed.), *Mechanisms of language acquisition* (pp. 249-308). Hillsdale, NJ: Lawrence Erlbaum Associates.

- MacWhinney, B. (1987b). Applying the competition model to bilingualism. *Applied Psycholinguistics*, 8, 315-327.
- MacWhinney, B., & Bates, E. (Eds.). (1989). *The crosslinguistic study of sentence processing*. New York: Cambridge University Press.
- McDonald, J. L. (1987). Sentence interpretation in bilingual speakers of English and Dutch. *Applied Psycholinguistics*, 8, 379-413.
- Sasaki, Y. (1991). English and Japanese interlanguage comprehension strategies: An analysis based on the competition model. *Applied Psycholinguistics*, 12, 47-73.
- Sasaki, Y. (1994). Paths of processing strategy transfers in learning Japanese and English as foreign language: A competition model approach. *SSLA*, 16(1), 43-72.
- Schmidt, R. (1995). Consciousness and foreign language learning: A tutorial on the role of attention and awareness in learning. In R. Schmidt (Ed.), *Attention and awareness in foreign language learning* (pp. 1-63). Honolulu: University of Hawaii, Second Language Teaching & Curriculum Center.
- Wulfeck, B. B., Juarez, L., Bates, E., & Kilborn, K. (1986). Sentence interpretation strategies in healthy and aphasic bilingual adults. In J. Vaid (Ed.), *Language processing in bilinguals: Psycho-linguistic and neuropsychological perspectives* (pp. 199-220). Hillsdale, NJ: Erlbaum Associates.
- Yamaoka, T. (1988). A semantic and prototype discussion of the 'be easy to V' structure: A possible explanation of its acquisition process. *Applied Linguistics*, 9(4), 385-401.

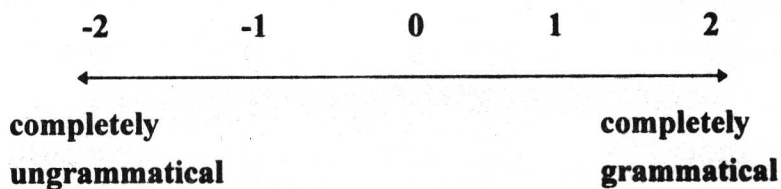
## APPENDIX

**Please read the following instruction!***Sentence intuitions for grammaticality judgment*

People have a linguistic ability in their native languages to distinguish grammatical sentences from ungrammatical ones without any grammar training. For example, in English you may judge that the first sentence below is a grammatical English sentence, while the second one is not.

- 1) John is likely to win the race.
- 2) John is probable to win the race.

On the following pages is a list of sentences. We want you to tell us for each one whether you think it sounds grammatical in English. Please read each sentence carefully before you answer. **Concentrate on the structure of the sentence.** Rate the grammaticality of each sentence using five-point rating scale. In case you have no clear feeling for whether they are grammatically possible or not, mark zero (0).



1. The book is interesting to read.  
-2 -1 0 1 2
2. A good impression is difficult to make.  
-2 -1 0 1 2
3. This violin is easy to play sonatas on.  
-2 -1 0 1 2
4. Mary is hard to understand sometimes.  
-2 -1 0 1 2

5. John was sad to have been rejected.

-2 -1 0 1 2

6. The story books are amusing to be read by children.

-2 -1 0 1 2

7. John was fun to go fishing.

-2 -1 0 1 2

8. John is willing to become famous.

-2 -1 0 1 2

9. John is interesting to listen to.

-2 -1 0 1 2

10. My mother is eager to meet you.

-2 -1 0 1 2

11. John is easy to eat rice with chopsticks.

-2 -1 0 1 2

12. Jack was hard to meet the President.

-2 -1 0 1 2

13. That school is not fun to go to.

-2 -1 0 1 2

14. Mary was amusing to play the guitar.

-2 -1 0 1 2

15. The place is interesting to be visited.

-2 -1 0 1 2

16. Mary is happy to be visited by her friends.

-2 -1 0 1 2

17. A wine glass is easy to be broken.

-2 -1 0 1 2

18. Mary was difficult to be accepted by that group.

-2 -1 0 1 2

19. Movies are fun to watch.

-2 -1 0 1 2

20. Some children are amusing to play with.

-2 -1 0 1 2

21. Mary is anxious to go.

-2 -1 0 1 2

22. John is easy to see in a game of hide-and-seek.

-2 -1 0 1 2

23. John was interesting to go into politics.

-2 -1 0 1 2

24. John is difficult to get along with.

-2 -1 0 1 2

25. The computer is hard to be installed.

-2 -1 0 1 2

26. Mistakes are not fun to be made.

-2 -1 0 1 2

27. Good gossip is amusing to share.

-2 -1 0 1 2

28. Everybody was anxious to know her name.

-2 -1 0 1 2

29. The bag is difficult to carry four books.

-2 -1 0 1 2

30. The seller was eager to finalize the deal.

-2 -1 0 1 2

31. Jack is easy to write letters to.

-2 -1 0 1 2

32. The problem is hard to deal with.

-2 -1 0 1 2

33. The girl was fun to dance with John.

-2 -1 0 1 2

34. Jack was glad to return.

-2 -1 0 1 2

35. Mary is fun to tease.

-2 -1 0 1 2

36. The theater is easy to be filled with people.

-2 -1 0 1 2

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