Testing Eubank's Optional Verb-Raising in L2 Grammars of Korean Speakers
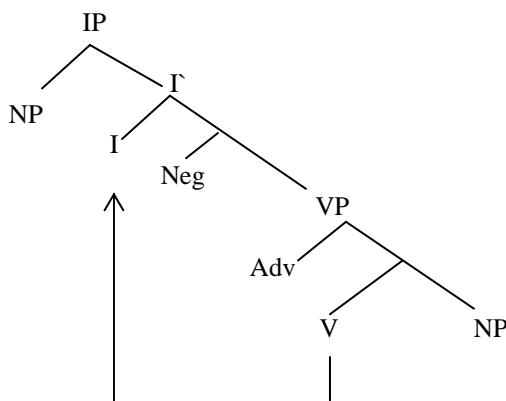
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1. Introduction

This paper is to test optional verb-raising in L2 grammars of Korean in order to reexamine Eubank's proposal. Eubank and his colleagues (1997) reported optional verb-raising during the course of L2 acquisition. Following Beck (1997), they have suggested, accordingly, that L2 knowledge of functional categories associated with feature strength is permanently impaired even if learners eventually acquire overt agreement morphology.

Numerous attempts have been made to discover a link between verbal inflectional morphology for subject-verb agreement and syntactic verb placement. Under the current linguistic analyses, it is assumed that featural properties associated with functional categories trigger certain kinds of syntactic movement. In this sense, syntactic verb-raising is, somehow, linked to the relevant strength of functional heads such as T[tense] and AGR[eement] within IP (Pollock, 1985; Chomsky, 1995). For example, in [+strong] feature languages (e.g., French), overt verb-raising from its base position to INFL occurs in finite clauses, yielding the order S-V-A-O as in (1a). Consequently, an adverb appears between the verb and its complement. The order SAVO, which is the result of failure to raise, is ungrammatical in French, as in (1b).

(1)

a.	Marie	regarde	souvent	la télévison (S-V-A-O)
	Mary	watches	often	television

b.	*Marie	souvent	regarde	la télévison (*S-A-V-O)
	Mary	often	watches	television

Meanwhile, in [-strong] feature languages (e.g., English), the thematic verb should remain inside VP at PF and raise at LF, resulting in the order S-A-V-O, in which the adverb appears between the subject and the verb, as in (2).

(2)

IP
NP ⌐Γ
I VP
Adv
V NP
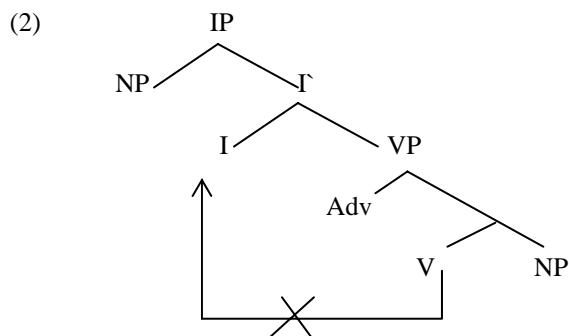
a. Mary often watches television. (S-A-V-O)
b. *Mary watches often television. (*S-V-A-O)

There are three major hypotheses in relation to verb-raising in second language acquisition. First, the Valueless Features Hypothesis proposed by Eubank et al. (1996, 1997) holds that L2 feature strength associated with functional projections is inert or valueless until learners acquire actual L2 agreement paradigms. Next, the Local Impairment Hypothesis argues that L2 knowledge of morphosyntactic features is permanently impaired during the course of maturation. Verb placement would always be a problem for L2 learners (Beck, 1998). Lastly, the Separation Hypothesis posits that L2 knowledge of syntactic verb placement is not impaired and develops independently of the acquisition of overt morphology (Schwartz & Sprouse 1996; Lardiere, 1998; White, 2003).

In order to revisit Eubank's proposal, this study investigates the interlanguage grammar of adult Korean speakers learning English, where both L1 and L2 both prohibit verb-raising. Specifically, this paper seeks to address the issues of how syntactic structures and verbal inflection are developed and of whether defective morphology necessarily reflects the lack of syntactic representations. Accordingly, the second section discusses the properties of the learners' L1 (Korean) and L2 (English) regarding verb placement and verbal morphology. The three section reports an experimental study of Korean speakers' acquisition of English verb placement and overt morphological realization. The results of Eubank et al. (1997) are reanalyzed in the fourth section. Finally, the last section concludes the paper.

2. Properties of English and Korean: Verb placement and verbal inflection

In this section, the properties of L2 English and L1 Korean in relation to verb placement and verbal inflection are discussed. As far as feature strength associated with INFL is concerned, as Table 1[1] indicates, Korean and English share the strength of feature associated with INFL: namely, [-strong] feature, despite the fact that the two languages differ with respect to headedness parameters. That is, both languages prohibit the raising of a lexical verb in finite clauses, as in (3).

Table 1. Adverb placement between French, English and Korean

Word Order	French	English (L2)	Korean (L1)
S-Adv-V-O	No	Yes	Yes (S-A-O-V)
S-V-Adv-O	Yes	No	No (S-O-V-A)

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[1] The table of Yuan (2001) is modified for the purpose of this study.

(3) a. Meri-ka   TV-lul   caju   pon-ta   (S-O-A-V)

      Mary-Nom   TV-Acc   often   watch-Decl

    'Mary often watches TV'

    b. *Meri-ka   TV-lul   pon-ta   caju   (*S-O-V-A)

       Mary-Nom   TV-Acc   watch-Decl   often

With respect to verbal inflectional paradigms, as in Table 2, both English and Korean have a morphological distinction between nonpast and past (*-ed* in English; *-ess* in Korean). However, unlike English, which has {*-s*} for 3rd person singular and {-ø: null morpheme} for elsewhere, Korean does not have an agreement morpheme. That is, Korean lacks verbal agreement for person, number and gender.

Table 2. Difference and similarity in verbal inflection between English and Korean

Morphological Marker	English	Korean
Agreement	Yes (3rd person/singular)	No
Tense (Past)	Yes	Yes

In this study of Korean-speaking learners' acquisition of overt morphology and verb placement, we sought to address the following hypotheses that are formulated based on Eubank's proposals.

Hypothesis 1: Learners' general L2 proficiency level will predict the acquisition of agreement paradigms. The more proficient learners will show more accurate use of agreement forms than the less proficient learners.

Hypothesis 2: The more proficient learners will prohibit thematic verb-raising, and thus will make a significant distinction between S-A-V-O and S-V-A-O stimuli. However, the less proficient learners will allow thematic verb-raising optionally and, consequently, there will be no significant difference between S-A-V-O and S-V-A-O structures.

Hypothesis 3: If Hypothesis 2 is not bourn out, then the strength values of features are permanently impaired. Accordingly, regardless of proficiency level, L2 learners will have optional verb-raising, and as a result, both less and more proficient learners will make no significant difference between S-A-V-O and S-V-A-O orders.

3. Methodology

3.1. Subjects

The participants in the experimental group consisted of 28 adult Korean native speakers. They resided in South Korea, and their ages ranged from 19 to 35 years with the average age of 24 (23;8). The majority of them were undergraduate and graduate students of a Korean college. The subjects began learning English in a junior high school in Korea (mean age = 11.9), and they have studied it formally since then. Twenty-five native speakers of English served as a control group.

3.2. Materials and Procedures

In this study, two tasks (an oral translation task and a grammaticality judgment task) were administered to explore their knowledge of L2 (ir)regular verbal morphology and verb-raising, respectively. In addition to the main tasks, a placement test (a subset of TOEFL) was used to classify the subjects of the experimental group into two proficiency levels of English.

In the oral translation task similar to that used by Eubank, subjects were asked to translate Korean sentences orally into English after each sentence was presented via audiotape. This task comprised 25 items including 4 distractors; testing items require third person singular –s (n=10) or non-past auxiliary/copular be (n=11) in obligatory contexts, as in (4-5). Unlike in Eubank, learners'

correct use of auxiliary/copular *be* was taken into accounted in addition to learners' production of the third person singular *–s*. Correctly used suppletive forms also provide evidence for the acquisition of agreement paradigms.

(4) The father drinks coffee every morning. (n=10)
(5) That hat is big and red. (n=11)

In the grammaticality judgment task, the subjects were given a sentence with either a raised verb like (6a) and (6c) or an unraised verb like (6b). The participants rated the extent to which each sentence was acceptable on a 5-point scale, ranging from 1 (Not Okay) to 5 (Okay).

(6) Grammaticality Judgment Task (N= 45):

a. Grammatical SAVO item (n=10)
The maid carefully ironed the shirt.

b. Ungrammatical SVAO item (n=10)
 *The maid ironed carefully the shirt.

c. Grammatical SVAP item (n=5)
 The child walked slowly to school.

4. Results

In this section, I will present the result of the placement test. Then I will present the results of main tasks, that is, the oral translation task and the grammaticality judgment task.

On the basis of the cut-off point (21 out of 30), subjects (n=18) whose scores ranged from 8 to 18 were identified as intermediate, and subjects (n=10) whose scores ranged 21 to 28 were identified as advanced. As can be seen in Table 3, an independent sample t-test indicates a significant difference between two groups. That is, in the proficiency level test, the intermediate learners were significantly different from the advanced. This result demonstrates that the cut-off point (21 correct answers out of 30) of the placement test was a reasonable criterion for the placement of the subjects in two discrete levels.

Table 3. Results of independent sample *t*-test in the placement test

df	*t*	*P*
26	8.79	.000***

Note: *p< .05   **p<.01   ***p< .001

Table 4 presents the results of the oral translation task. As mentioned earlier, the Korean-speaking learners' rates of regular affixal 3sg *–s* for a lexical verb and auxiliary/copular *be* for all persons in obligatory contexts were examined in order to find out whether the learners had acquired target language agreement paradigms. A total of ten contexts required the non-past third person marker on lexical main verbs, and eleven contexts called for copular suppletive forms. Whenever participants produced an appropriate agreement morpheme in the nonpast finite contexts, they got one score; thus the perfect score was ten for the 3rd singular person marking and eleven for the suppletive forms.

Table 4. Mean, SD, Ranges of agreement marking in obligatory contexts

| Agreement Type | Intermediate (n=18) | | | Advanced (n=10) | | |
	Mean	SD	Range	Mean	SD	Range
3sg lexical verb	1.6	2.17	(0-9)	4.9	3.51	(0-9)
Copular/be	10.78	0.55	(9-11)	10.8	0.42	(10-11)

As Table 4 presents, the mean rate of the regular agreement morpheme supplied by learners in the advanced group ($M = 4.9$) was higher than the rate by learners in the intermediate group ($M = 1.6$). There was a statistically significant difference between the two learner groups in agreement marking on lexical main verbs ($p > 0.01$). However, as far as the suppletive forms are concerned, the intermediate learners' performance ($M = 10.78$) was very similar to that of the advanced learners ($M = 10.8$). Both intermediate and advanced learners correctly supplied auxiliary/copular *be* forms for all persons at a rate of around 98%.

Importantly, in relation to the regular affixation –*s*, the group results do not always correspond to the individual data. Table 5 presents a summary of the number of tokens of correct usage of the agreement paradigms of adult Korean speakers.

Table 5. Agreement marking in obligatory contexts: individual scores

Group	Subjects	Lexical main verbs, 3sg-*s* suppliance/context (n=10)	All persons of aux/cop 'be' suppliance (n=11)
Advanced	1	9	11
	2	6	10
	3	9	11
	4	7	11
	5	7	11
	6	7	11
	7	2	11
	8	1	11
	9	1	10
	10	0	11
Intermediate	11	9	11
	12	1	11
	13	0	11
	14	3	11
	15	1	11
	16	0	10
	17	0	11
	18	2	11
	19	0	11
	20	1	11
	21	3	11
	22	2	11
	23	2	11
	24	0	9
	25	0	11
	26	3	10
	27	2	11
	28	0	11

The range of total scores which six of the advanced learners received in this task was from 6 to 9, but the remaining four advanced learners' score range (0-2) falls within the normal range found in the intermediate group. Around 80% of the learners' production rate of verbal affixation did not reach a critical target level, namely, 70% (set by Eubank).

Figure 1. Overt Morphology
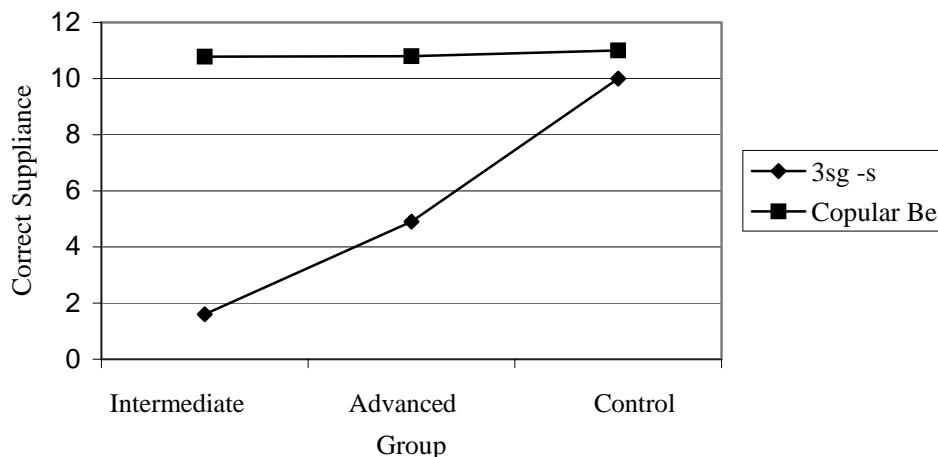
As can be seen in Figure 1, regardless of their L2 proficiency levels, L2 learners had difficulty in marking 3rd person singular –s, while they were good at supplying auxiliary/copular be in obligatory contexts.

Let me go to the results of the grammaticality judgment task. In Table 6, the results of a one-way of variance (ANOVA) are presented for the raised and unraised verb structures.

Table 6. Results of the ANOVA in the grammaticality judgments for verb-raising (between three groups: intermediate, advanced, and control)

Sentence type	df	F	P
*SVAO	2,49	29.98	.000***
SAVO	2,49	12.39	.000***
SVAP	2,49	12.37	.000***

Note: *$p < .05$ **$p < .01$ ***$p < .001$

The analyses exhibit a significant difference between the three groups for the three sentence types. The post-hoc Scheffé test reveals that, with regard to judgments of the ungrammatical construction, the three groups differed significantly from each other. That is, the two Korean-speaking groups were significantly different from the control group. A significant difference was also observed in performance between the intermediate and the advanced groups. As far as the grammatical structures of SAVO and SVAP are concerned, the nonnative speaker groups were significantly different from the native speaker group. However, the learner' groups did not significantly diverge from each other.

At first glance, it seems to be the case that the judgments of the nonnative speakers are divergent from those of the native speakers in relation to verb placement. Like Eubank and his colleagues, one could assume that the learners' knowledge of feature strength associated with verb-raising is deficient. However, when taking a closer look at the learners' relative performance between SAVO and *SVAO stimuli, and between *SVAO and SVAP stimuli, it is not the case.

Table 7. Results of the paired-samples t-test on differences between *SVAO and SAVO order and between *SVAO and SVAPP

Structure	Intermediate			Advanced			Control		
	Mean	*df*	*t*	Mean	*df*	*t*	Mean	*df*	*t*
*SVAO-SAVO	-0.88	17	-4.97***	-1.67	9	-7.47***	-3.145	21	-26.65***
*SVAO-SVAPP	-0.67	17	-3.93**	-1.28	9	-4.15**	-3.122	17	-18.92***

Note: *p< .05   **p<.01   ***p< .001

As in Table 7, within groups, the learners show significantly different judgments between the sentences with *SVAO order and with SAVO order as well as between *SVAO and SVAP constructions.

Figure 2. Judgments on Unraised and Raied Verbs
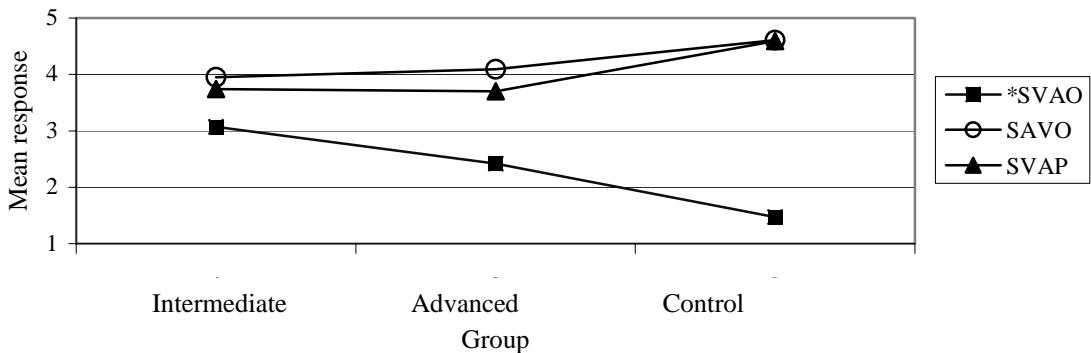
As Figure 2 illustrates, in transitive sentence types involving an adverb, the L2 learners robustly rejected the raising of a main lexical verb past an adverb, whereas they accepted sentences where the lexical verb remained in its base position. Even when the intransitive sentence type SVAP contrasts with the ungrammatical item *SVAO, which shares the surface structure (SVA) with the order SVAP, the less and more proficient learners alike made a clear distinction between the two structures. As expected, this asymmetry between raised and unraised verbs was also found in native speakers' judgments.

5. Reconsideration of Eubank et al. (1997)

Before making a conclusion, let us revisit the study of Eubank (1997). In their study, Chinese-speaking learners were divided into an agreement and a no-agreement group as a result of an oral translation task (on the 70% criterion). A truth-value judgment task was used to test the learners' optional verb-raising.   The truth-value judgment task comprised 8 testing items, with each item preceded by a short narrative. The Chinese-speaking learners were asked to indicate whether each sentence was true or false in the context of the narrative. The researchers assumed that the main items were ambiguous only for those who had a grammar with optional verb-raising. For example, in (7), the learners who have an optional raising grammar were expected to respond either 'true' or 'false' to

the given sentence. On the other hand, those learners who did not were expected to answer only 'false'.

(7) *Tom loves to draw pictures of monkeys in the zoo. Tom likes his pictures to be perfect, so he always draws them very slowly and carefully. All the monkeys always jump up and down really fast.*

Tom draws slowly jumping monkeys (Eubank et al., 1997, p. 177)

The results of the truth-value judgment task are reproduced in Table 8. Based on Table 8, Eubank's chi-square analyses (nativeness by responses on raised items) showed that nonnative speakers in both agreement and no-agreement groups were significantly different from native speakers. Eubank and his colleagues concluded that the adult L2ers had optional verb-raising in their grammars regardless of their acquisition of surface morphology. And they claim that these findings support Beck's proposal that impairment to verbal features within IP accounts for L2ers' optional raising, and the L2 learners' deficient knowledge of feature strength associated with verb-raising is permanent.

Table 8. Means of a truth-value judgment task on raised items (Eubank et al., 1997, pp. 183-184)

	No-agreement group	Agreement group	Control group
False	137 (69.5%)	98 (81.7%)	204 (91.0%)
True	60 (30.4%)	22 (18.3%)	20 (9.0%)

Note that, despite the wide divergences between the nonnative and native speakers on raised items, the learners noticeably favored 'false' (81.7% and 69.5% by the agreement and the no-agreement groups, respectively) over 'true' (18.3% and 30.4%). The relevant chi-square reanalysis also indicates that both agreement and no-agreement groups strongly preferred the correct answer 'False' to the incorrect answer 'True' ($X^2 = 26.75$, $p < 0.001$; $X^2 = 15.65$, $p < 0.001$ respectively) in relation to raised items. As expected, the same preferences are also found in the native speakers ($X^2 = 90.91$, $p < 0.001$). If the nonnative speakers permit verb-raising optionally as the authors argue, the nonnative speakers' responses on the raised items should not have shown any preference for one response over the other. It is not clear why Eubank et al. did not take into account these important response patterns.

Table 9. Means of at truth-value judgment task on raised and unraised items (Eubank et al., 1997, p. 83)

Items	Native speaker		Nonnative speaker	
	False	True	False	True
Unraised	112 (100%)	0 (0%)	150 (94.9%)	8 (5.1%)
Raised	204 (91.0%)	20 (9.0%)	235 (74.1%)	82 (25.9%)

On the basis of Table 9, which is also drawn from Eubank et al.'s study, another chi-square reanalysis (verb placement by each group's responses) was conducted. These results demonstrate that both native and nonnative speakers made asymmetric judgments between raised and unraised stimuli ($X^2 = 10.63$, $p < 0.01$; $X^2 = 29.72$, $p < 0.001$, respectively). That is, like the native speakers, the nonnative speakers' responses significantly relied on whether the verb was raised or not. These findings indicate that the L2ers in Eubank's study were indeed sensitive to verb placement. Unfortunately, unraised items were treated as distractions and excluded from analysis in the study by Eubank. Eubank and his colleagues should have included the L2ers' responses on the unraised items for consideration and investigated the differences in their judgments between raised and unraised constructions. This would give us a clearer picture of the adult learners' knowledge of feature values.

Furthermore, the authors claimed that the individual data were consistent with the group data; that is, the NNS (Nonnative speakers of English)-NS (native speakers of English) discrepancy involving verb placement. However, the individual data in fact reveal that the nonnative speakers' knowledge was not radically divergent from native speakers' knowledge. Specifically, 53% and 36% of the learners in the agreement and the no-agreement groups respectively, were within the range (0 to 1) of performances attested by native speakers; that is, the nonnative speakers correctly rejected the related items at a rate of 90-100%, like the native speakers. This shows that the NNS-NS divergences fall into no discernible pattern. Thus, the nonnative speakers appear to be equipped with mechanisms for determining the feature values of a target language, in contrast to the claim of Eubank and his colleagues. Another piece of evidence against Eubank et al.'s argument is the fact that the particular item a majority of learners made a error on was the same one that native speakers favored as a raised verb: 'Tom draws slowly jumping monkeys'. Indeed, the authors consent to this view by stating that "Interestingly, 10 of 20 True responses from native speakers on raised items were on a single item … In fact, the nonnative findings are somewhat similar" (p. 183, note 9).

Taken together, the points I discussed above make clear the need to reconsider Eubank et al.'s generalization, which holds that interlanguage grammar suffers from permanent grammatical deficiency involving feature values. This also indicates that the results of Eubank actually provide converging evidence of my study.

5. Conclusion

A major finding of this study is that nonnative speakers' performance was significantly worse than that of native speakers in relation to verb-raising. However, intermediate as well as advanced learners demonstrated significant differences in their judgments between raised and unraised verbs; that is, the learners were likely to accept the grammatical structures while they were likely to reject the ungrammatical structures. This asymmetry was also observed in native speakers' judgments (as expected). Statistical reanalysis of L2 learners' data obtained from the study of Eubank et al. (1997) showed that the L2 learners treated raised and unraised stimuli as significantly asymmetric as well. Meanwhile, in this current study, the results of the oral translation task indicated that the majority of adult learners suffered from frequent omission of non-past 3sg marking. Nevertheless, they did successfully supply auxiliary/copular forms for all persons.

This paper concludes that despite overall suppression in adult learners' performance involving lexical verb and adverb placements, the adult L2 learners in this study as well as the study of Eubank et al. attain significant sensitivity to the discrepancy in grammaticality between unraised and raised verbs. Moreover, as far as the L2 learners' accurate use of suppletive forms is concerned, an agreement feature-checking mechanism appears to be operative in learners' grammars. Hence these findings call for a reconsideration of Eubank's view on optionality in verb-raising in L2 grammars.

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