

## **Accuracy order of grammatical morphemes of Korean EFL learners: Disparities among the same L1 groups\***

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Seog, Daria Soon-Young. 2015. Accuracy Order of Grammatical Morphemes of Korean EFL Learners: Disparities among the Same L1 Groups. *Linguistic Research* 32 (Special Edition), 151-171. Studies questioning the proposed invariant natural order of second language (L2) morpheme acquisition have reported evidence of strong first language (L1) effects on the acquisition order of L2 English grammatical morphemes. In view of these findings, the current study investigated disparities in the morpheme acquisition orders of different groups with the same L1 Korean background. First, this study examined 173 writing samples written by Korean elementary school students learning English as a foreign language (EFL) to investigate the acquisition order of eight grammatical morphemes. Afterwards, the revealed order was compared to the findings from previous studies conducted with L1 Korean groups. The results showed that the acquisition order of the Korean EFL learners of this study did not support the natural order. Furthermore, comparison of findings to previous studies revealed disparities among the L1 Korean groups learning English indicating the need for investigation into methodology as well as other external determinants in addition to L1 transfer. (Kyungpook National University)

**Keywords** Korean EFL writing, morpheme acquisition, natural order, accuracy rate, L1 transfer

### **1. Introduction**

Order of morpheme acquisition studies in 1970s focused on uncovering a distinct consistent order in which L1 and L2 learners of English acquire proficient usage of grammatical morphemes. The recognized starting point was the longitudinal study of three children learning English as their first language by Brown (1973). He identified and investigated the development of fourteen grammatical morphemes that the three

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\* I am very grateful to the anonymous reviewers for their valuable comments.

children acquired in a distinct order.

Soon after, Dulay and Burt (1973) investigated the grammatical morpheme acquisition order of young English as a second language (ESL) learners and found that ESL learners also exhibited a distinct acquisition order. Although there were differences in L1 and L2 morpheme acquisition orders, the conclusion was that L2 acquisition was similar to L1 acquisition. Furthermore, Dulay and Burt (1974) provided evidence suggesting an existence of a universal natural order of morpheme acquisition regardless of age, L1 background, amount or duration of ESL instruction, or English exposure. Researchers reported additional data supporting Dulay and Burt's findings. In review of these studies conducted in 1973 to 1977, Krashen (1977) proposed the "Natural Order" of morpheme acquisition for second language (p. 149).

Since then, many studies on L2 acquisition order of English grammatical morphemes have provided contradictory results suggesting that different variables may be influencing the order of acquisition in different contexts and situations. Multi-determinant studies have revealed that in explaining morpheme order disparities, the effects of combinations of determinants need to be examined (e.g., Goldschneider & DeKeyser, 2001; Kwon, 2005; Schenck & Choi, 2013). Nevertheless, it is clear that one undeniably significant predictor of L2 English morpheme acquisition order is the learner's native language. Accordingly, L1 transfer has played a large role in explaining deviations between the morpheme acquisition orders of different L1 groups and the natural order (e.g., Hakuta, 1976; Pak, 1987; Shin & Milroy, 1999; Luk & Shirai, 2009; Weitze, 2009; Murakami, 2011).

The current study investigated the disparities in the morpheme orders among different groups with same L1 Korean background. The results of this study suggest that external determinants other than L1, such as EFL versus ESL contexts, as well as possible methodology issues impacting calculation of data may greatly influence the morpheme order. The investigation consisted of the following: 1) review of relevant previous studies; 2) examination of writing samples produced in-class by Korean elementary school students learning English in an EFL setting; 3) identification of the acquisition order of the written data; 4) comparison and analysis of current findings to those of previous studies; 5) conclusions and implications of the study.

## **2. Literature review**

The first section provides an overview of previous studies conducted on the acquisition order of functors by L1 and L2 learners leading to the proposed natural order.<sup>1</sup> The second section reviews relevant studies investigating L1 effects on acquisition of L2 English morphemes. The last section covers studies concerning multi-determinant effects.

### **2.1 Morpheme acquisition order: L1 and L2 studies**

Brown's (1973) groundbreaking longitudinal study of three American preschool children learning English as their native language revealed a distinct order of acquisition of fourteen English morphemes based on suppliance in obligatory contexts (SOC). Although the children did not acquire the morphemes at the same rate or at the same age, the order in which they developed proficient use of the morphemes in their spontaneous speech was remarkably similar. The findings from Brown's study, with supporting evidence from the cross-sectional study by de Villiers and de Villiers (1973), established the baseline for future morpheme order studies.

In regards to L2 studies, Dulay and Burt (1973) revealed an L2 acquisition order, different from the L1 order, in their examination of speech samples collected using the Bilingual Syntax Measure (BSM) from 151 Spanish-speaking children learning English in California and New York.<sup>2</sup> Moreover, Dulay and Burt (1974) not only confirmed their previous findings but also showed that L1 did not affect the acquisition order by comparing the results of 60 Spanish-speaking children and 55 Chinese-speaking children attending different schools in New York. Table 1 represents the L2 acquisition order findings from Dulay and Burt's (1974) study. They reported that the progressive *-ing*, plural *-s*, and third person singular *-s* morphemes tended to be acquired in a similar order as the L1 acquisition order while the past irregular tense and possessive *'s* were acquired late and contractible

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<sup>1</sup> Brown (1973) defines functors as equivalent to grammatical morphemes. Likewise, the terms functor and morpheme are used interchangeably in this paper.

<sup>2</sup> The BSM test is designed to test L2 proficiency in young children by eliciting responses in L2 using 7 cartoon pictures and 33 questions so that the structures in the children's responses could be calculated for L2 proficiency.

forms of the copula and auxiliary were acquired earlier in contrast to the L1 acquisition order.

Table 1. Order of acquisition for ESL learners (Dulay & Burt, 1974)

Rank	Morpheme
1	Plural <i>-s</i>
2	Present progressive <i>-ing</i>
3	Copula <i>be</i>
4	Auxiliary <i>be</i>
5	Articles <i>a/an and the</i>
6	Irregular past tense
7	Regular past tense <i>-ed</i>
8	Third person singular present tense <i>-s</i>
9	Possessive <i>'s</i>

Morpheme order studies in the 1970s continued to provide support for the claim of a consistent acquisition order for L2 learners of English (e.g., Bailey, Madden, & Krashen, 1974; Larsen-Freeman, 1975; Fathman, 1975). Through extensive analysis of the many L2 morpheme acquisition studies conducted in the '70s, Krashen (1977) modified Dulay and Burt's (1974) original L2 morpheme acquisition order and grouped the morphemes together to propose the Natural Order Hypothesis (NOH). Krashen supported the idea that grammatical morpheme acquisition occurs in a predictable order for L1 learners as well as L2 learners albeit the orders are different for L1 and L2 acquisition. Figure 1, from Krashen (1977; see also Krashen, 1982, Ch. 2), displays the hierarchical morpheme order groups Krashen proposed as the average order of grammatical morpheme acquisition for ESL learners regardless of the learners' age or L1 background. Krashen stated that in general, the order of acquisition will progress from group to group for L2 English learners and that he makes no claims about a specific order within the groups.

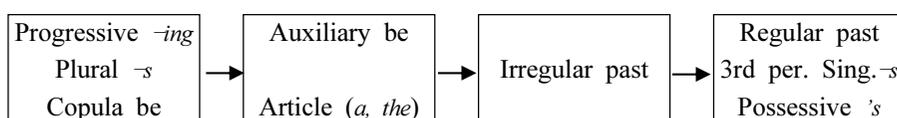


Figure 1. Natural order of morpheme acquisition proposed by Krashen (1977)

## 2.2 Morpheme acquisition order: L1 effects

Among the first of the studies that reported data contradicting the natural order of morpheme acquisition was Hakuta's (1976) longitudinal case study of a Japanese child learning English as a second language. Hakuta reported evidence of L1 Japanese transfer on to acquisition of two L2 English grammatical morphemes, plural *-s* and possessive *'s*. The acquisition order of the two morphemes were in reverse of the natural order; the subject acquired the possessive *'s* very early and the plural *-s* very late. Hakuta explained that the order was reversed due to the existence of the obligatory possessive particle *-no* and the nonexistence of a plural marker in Japanese.

Luk and Shirai (2009), in a review article of SLA research, compared the results of morpheme studies conducted with native speakers of Chinese, Japanese, Korean, and Spanish. Their investigation revealed that the order of L2 English morpheme acquisition differed from the proposed natural order depending on the existence or nonexistence of a similar particle or marker in the learner's L1. Table 2 shows the comparison results for only the Korean L1 groups.<sup>3</sup>

Table 2. Results of studies with Korean L1 learners of English compared with the natural order (Luk & Shirai, 2009)

Morphemes	Study			
	Krashen's natural order	Pak (1987)		Shin & Milroy (1999)
		Children	Adults	
Progressive	1	1	1	1
Plural	1	8	8	9
Copula	1	2	2	3
Auxiliary	4	3	3	5
Article	4	6	6	7
Past-irregular	6	7	5	6
Past-regular	7	5	7	4
Third person	7	9	9	8
Possessive	7	4	4	2

With the Korean L1 groups, Luk and Shirai (2009) reported that Korean L1

<sup>3</sup> For other L1 native speaker comparisons, see Luk and Shirai (2009) for details.

speakers acquired articles and plural *-s* later and possessive *'s* earlier than the proposed natural order as they had predicted. For Korean learners of English, L1 transfer facilitated the acquisition of the possessive *'s* morpheme while impeding the acquisition of the article and the plural *-s* morphemes.

Murakami (2011) examined over 3,000 essays produced by seven L1 (Japanese, Korean, Spanish, Russian, Turkish, German, and French) groups in the Cambridge Learner Corpus for accurate use of six morphemes: articles, past tense *-ed*, plural *-s*, possessive *'s*, progressive *-ing*, and third person *-s*. According to Murakami, there were clear differences in the acquisition order of articles between the groups whose L1s have articles (Spanish, German, and French) and those whose L1s do not (Japanese, Korean, Russian, and Turkish). In addition to the article acquisition results, Murakami also observed a lower accuracy order in plural *-s* and a higher accuracy order in possessive *'s* by L1 Japanese and Korean groups supporting Luk and Shirai's (2009) findings. Table 3 lists the L1 Korean group's morpheme acquisition order from Murakami's (2011) study.<sup>4</sup>

Table 3. Clustered order of TLU scores for L1 Korean (Murakami, 2011)<sup>5</sup>

Clustered Order	Morpheme
1	past tense <i>-ed</i> present progressive <i>-ing</i>
2	plural <i>-s</i> possessive <i>'s</i> third person <i>-s</i>
3	articles

Both Luk and Shirai (2009) and Murakami (2011) concluded that the learner's

<sup>4</sup> For the complete representation of the clustered order of target-like use (TLU) scores for all seven targeted L1s, see Murakami (2011).

<sup>5</sup> Murakami (2011) employed Pica's (1983) TLU formula to calculate accuracy.

$$TLU = \frac{\text{number of correct suppliance}}{\text{number of obligatory contexts} + \text{number of overgeneralization errors}}$$

Furthermore, in his representation of the acquisition order, he clustered the morphemes with similar TLU scores using the bootstrapping technique to counter the criticism that morpheme order studies misrepresent the accuracy distance between the ranked morphemes to be the same, a 1% difference can appear the same as a 50% difference.

Bootstrapping is a statistical resampling technique used to gain insights into the population of a given sample. For a detailed description of how it works, see Murakami (2011).

L1 undeniably has strong effects on the acquisition order of English grammatical morphemes resulting in marked deviations from the proposed natural order. Accordingly, they also concurred in their rejection of the notion of a universal order of acquisition as posited by Krashen (1977).

### 2.3 Morpheme acquisition order: Multi-determinant studies

One of the foundational studies investigating multiple factors to explain variations in the morpheme orders was the study by Goldschneider and DeKeyser (2001). In a meta-analysis of twelve previous studies, they examined five determinants (perceptual salience, semantic complexity, morphophonological regularity, syntactic category, and frequency) for possible effects on acquisition of six functors (present progressive *-ing*; 3rd person singular present *-s*; articles *a*, *an*, *the*; plural *-s*; possessive *'s*; regular past *-ed*). They reported that a considerable portion of the variance in the L2 grammatical morphemes acquisition order can be explained by the five determinants. In not being able to account for all the variance, Goldschneider and DeKeyser expressed the importance of testing other predictors, external to the properties of the functors (such as L1 transfer), for possible effects.

Schenck and Choi (2013) conducted a comprehensive examination of multiple determinant effects on morpheme acquisition in an EFL context. They examined the timed writing test responses from 26 Korean middle school learners of English in Korea to investigate their acquisition of 16 grammatical features. The resulting acquisition order was investigated for individual as well as cumulative effects of the following putative causal variables: frequency, morphosyntactic variability, syntactic complexity, semantic complexity, phonological salience, and L1 transfer. Schenck & Choi reported notable differences in the Korean EFL acquisition order compared to the Processability Model and Natural Order Hypothesis even though the results of the Spearman rank correlations yielded high correlation values.<sup>6</sup> In contrast with the Processability Model, the South Korean EFL acquisition order revealed that verbal negation emerged earlier than the plural *-s* feature and the phrasal verb did not appear in the students' written data. As for the Natural Order, the disparities were

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<sup>6</sup> Spearman rank correlations of Korean EFL acquisition order to the Processability Model and Natural Order Hypothesis yielded values of  $r_s = .699$  ( $p = .036$ ) and  $r_s = .778$  ( $p = .014$ ), respectively (Schenck & Choi, 2011).

that the progressive auxiliary morpheme appeared earlier between the copula and plural *-s* feature and the article appeared between the possessive *'s* and third person singular. Table 4 shows the acquisition order obtained for the Korean EFL learners.

Table 4. Acquisition order of Korean EFL learners (Schenck & Choi, 2013)

Grammatical Feature	Acquisition Percentage
1) Verbal negation	97.44
2) Copula	91.96
3) Progressive auxiliary total	85.45
4) Plural <i>-s</i>	85.24
5) Do question inversion	84.42
6) Wh copula question inversion	77.05
7) Yes/no auxiliary question inversion	77.04
8) Progressive <i>-ing</i>	74.97
9) Past irregular	72.60
10) Possessive <i>'s</i>	63.27
11) Article	62.36
12) Third person singular <i>-s</i>	57.79
13) Wh auxiliary question inversion	38.53
14) Past regular	32.69
15) Cancel inversion	5.77
16) Phrasal verb separation	0.00

As for the determining factors, Schenck & Choi (2013) reported that results of the Spearman rank correlations of the Korean EFL acquisition order to individual determinants revealed a strong correlation with input frequency ( $r_s = .699$ ;  $p = .003$ ) and L1 similarity ( $r_s = .639$ ;  $p = .008$ ).<sup>7</sup> However, they also noted that some of the discrepancies needed other causal variables for full explanations. With supporting multiple regression value of  $R = .77$ , Schenck & Choi concluded that “While analysis of individual causes may explain some of the disparities of acquisition order, all six causes analyzed within this paper appear to synergistically influence the acquisition process” (2013, p. 52).

In view of the selected studies discussed in this paper, one obvious realization is

<sup>7</sup> For details see Table 3 Spearman rank correlations of EFL acquisition order to individual causes of acquisition and Table 4 Comparison of acquisition order to the Korean L1, frequency in an EFL context, and frequency in and ESL (Schenck & Choi, 2011, p. 51).

that many more studies are needed in order to arrive at any generalizations or conclusions about the acquisition order. Therefore, in hopes of providing additional findings valuable to understanding the morpheme acquisition process, this study investigated the accuracy order of grammatical morphemes in preexisting Korean EFL written data and compared the results to the findings of previous studies.

### **3. Research questions**

Although morpheme studies have been influential in making advancements toward elucidating the language acquisition process, there are still much to be answered. In an attempt to clarify and explicate some of the discrepancies, the following research questions were posed:

- (1) Does the Korean EFL learners' acquisition order found in this study confirm the natural order?
- (2) How does the Korean EFL learners' acquisition order found in this study compare with that of previous studies in ESL and EFL contexts?

## **4. Method**

### **4.1 Participants and data**

All participants were Korean elementary school students in the intermediate level classes at the Kyungpook National University (KNU) EFL program.<sup>8</sup> As Table 5 shows, 173 writing samples produced by 105 students during the program's routine writing sessions were used for this study.<sup>9</sup> A total of 4,360 sentences with 39,402 words were manually checked for accurate use of the eight morphemes commonly used in previous morpheme order studies. Table 6 lists the eight morphemes

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<sup>8</sup> The students are placed in to different level classes through assessment of student performance and achievement during class and on KNU level tests.

<sup>9</sup> The writing samples are the property of the Department of English Education, Teachers College, Kyungpook National University. The writing samples were permitted for use in this study as a courtesy.

investigated in this study with examples found in the actual students' writing samples.

Table 5. Distribution of students and their writing samples

Number of	Writing samples submitted				Total
	1	2	3	4	
Students	53	37	14	1	105
Writing samples	53	74	42	4	173

Table 6. Investigated morphemes with examples from the writing samples

	Morpheme	Example sentences
1	plural <i>-s</i>	The birds <i>sang</i> , too.
2	progressive <i>-ing</i>	I'm <i>drawing</i> the big trees.
3	copula <i>be</i>	He <i>is</i> very tired.
4	auxiliary <i>be</i>	They <i>are</i> eating and talking.
5	irregular past tense	I <i>saw</i> the shiny moon.
6	Regular past tense <i>-ed</i>	Sarah <i>laughed</i> loudly.
7	third person <i>-s</i>	But nobody <i>wants</i> to help me.
8	possessive <i>'s</i>	It looks like Lenna's face.

Concerning the investigated morphemes, unlike Dulay & Burt's (1974) study which excluded the long (*-es*) forms, both the short (*-s*) and the long (*-es*) forms were included in the plural *-s* count in line with Murakami's (2011) study. However, as expected, the short form was observed much more frequently than the long form. For the progressive *-ing* count, gerunds were not included as in previous studies.

## 4.2 Scoring procedures and analysis

The present study employed accuracy of usage to infer acquisition in accordance with previous studies. Additionally, the 90% accuracy rate to define the state of acquisition as outlined by Dulay and Burt's (1974) criterion of acquisition was also adopted.

Two steps were involved in calculating the accuracy rate to infer acquisition: first the quantifying and scoring of the grammatical morphemes' accurate usage and then the calculation for accuracy rate or acquisition percentage. For scoring, the

targeted morphemes were manually checked for accurate use in the writing samples and assigned point values according to Dulay and Burt's (1973) scoring system with minor modifications as illustrated in Table 7. While Dulay and Burt (1973) scored the morphemes on the following three types in obligatory contexts: 1) Correct functor supplied = 1.0 point (she's *dancing*); 2) Misformed functor supplied = 0.5 (she's *dances*); and 3) No functor supplied = 0 (she's *dance\_*), the modified version included another type of misformed morpheme such as "*sanged*" and overuse or oversuppliance of a morpheme in non-obligatory contexts (NOC) such as "He *is* knows her."

Table 7. Modified point value chart

Morpheme use	Score	Example: irregular past
Correct	1.0	They left yesterday.
Misformed	0.5	They Leaved/lefted yesterday.
Underuse	0.0	They leave yesterday.
Overuse	0.0	They didn't left yesterday.

As for calculation of accuracy or acquisition, previous studies employed either Brown's (1973) concept of suppliance in obligatory context (SOC) or Pica's (1983) target-like use (TLU) analysis as shown in Figure 2 and 3, respectively. Although most of the previous natural order studies used the SOC scoring method, Pica's TLU scoring is considered to be a better measure of L2 acquisition since it accounts for and penalizes for overgeneralization and overuse of a morpheme in non-obligatory contexts (NOC) (Lightbown, Spada, & Wallace, 1980; Pica, 1983; Long & Sato, 1984; Goldschneider and DeKeyser, 2001; Murakami, 2011). Pica's TLU formula still has the problem of involving native-like usage comparisons; however, it does address the potential interlanguage (IL) overuse errors that occur when a learner supplies the morphemes inappropriately in non-obligatory contexts (NOC).

$$SOC = \frac{n \text{ correct } SOC + (n \text{ misformed } SOC \times 0.5)}{n \text{ total obligatory contexts}}$$

Figure 2. Brown's (1973) SOC formula to calculate accurate use of morphemes

$$TLU = \frac{n \text{ correct } SOC}{n \text{ obligatory contexts} + n \text{ suppliance in } NOC}$$

Figure 3. Pica's (1983) TLU formula to calculate accurate use of morphemes

For the current study, the accuracy rate was calculated using a combination of Pica's (1983) TLU formula and Dulay and Burt's (1973) SOC formula. Accounting for misformed suppliance in obligatory contexts and overuse or oversuppliance of morphemes in NOC allows for a way to consider the learner's IL in to the calculations. Figure 4 represents the equation (with IL considerations configured in) used in this study to calculate the accuracy rate.

$$\text{Accuracy Rate} = \frac{n \text{ correct } SOC + (n \text{ misformed } SOC \times 0.5)}{n \text{ obligatory contexts} + n \text{ suppliance in } NOC} \times 100$$

Figure 4. Accuracy rate formula

Once all the calculations were completed, the revealed accuracy rate or acquisition percentages were ranked and ordered. The resulting acquisition order was compared statistically with Krashen's natural order (1977) and the L1 Korean EFL order reported in Schenck and Choi's (2013) study using the Spearman rank order correlation coefficients and examined for similarities and discrepancies in comparison with the acquisition orders of two multi-L1 studies, three ESL L1 Korean studies, and one EFL L1 Korean study.

## 5. Results and discussion

Once the written data was manually checked and labeled according to the morpheme's accurate use, the frequencies were tallied as shown in Table 8. The most frequently supplied morpheme was the past irregular tense, while the least frequent one was the 3rd person singular *-s*.

Table 8. Frequencies of 8 grammatical morphemes

Morphemes (Functors)	<i>n</i> correct suppliance	<i>n</i> misformed suppliance	<i>n</i> under & over suppliance	<i>n</i> Total occurrences
Copula <i>be</i>	1015	50	24	1089
Plural <i>-s</i>	719	6	60	785
Past irregular	1138	44	99	1281
Past regular <i>-ed</i>	464	29	49	542
Progressive <i>-ing</i>	317	2	62	381
Possessive <i>'s</i>	177	54	30	261
Auxiliary <i>be</i>	293	30	140	463
3rd person sing. <i>-s</i>	87	1	56	144

Table 9 lists the acquisition order of the Korean elementary school students for the eight morphemes in this study. According to the ranked order, the students had the least difficulty with the copula, plural *-s*, and past irregular morphemes with the acquisition percentages reaching above the 90% accuracy rate to be regarded as acquired according to the guidelines set forth by Dulay and Burt (1974). In contrast, the possessive *'s*, 3<sup>rd</sup> person singular *-s*, and auxiliary had the lowest acquisition percentages.

Table 9. Acquisition order of the Korean EFL elementary school students

Rank	Morphemes (Functors)	Acquisition Percentage
1	Copula <i>be</i>	95.50
2	Plural <i>-s</i>	91.97
3	Past irregular	90.55
4	Past regular <i>-ed</i>	88.28
5	Progressive <i>-ing</i>	83.46
6	Possessive <i>'s</i>	78.16
7	Auxiliary <i>be</i>	66.52
8	3rd person sing. <i>-s</i>	60.76

Table 10. Spearman rank order correlations of Seog' s (2015) study to Krashen' s (1977) Natural Order and Schenck &amp; Choi' s (2013) study

	Krashen NOH (1977)	Schenck & Choi (2013)
Correlation Coefficient	0.576*	0.429*
Sig. (2-tailed)	0.135	0.289
N	8	8

\* Correlation is significant at the .05 level (2-tailed).

As Table 10 indicates, the correlations were not statistically significant. Results of the Spearman rank order correlation coefficients of the Korean EFL elementary school students' acquisition order to Krashen's (1977) NOH and that of Schenck and Choi's (2013) study revealed a moderate correlation with values of ( $r_s = .576$ ;  $p = .135$ ) and ( $r_s = .429$ ;  $p = .289$ ), respectively. In answering the first research question, the Korean EFL learners' acquisition order found in this study does not fully support the natural order even though the well-established deviant morpheme, articles, was excluded from the investigation. What was surprising was that the comparison to the Korean EFL order found in Schenck and Choi's study yielded a lower correlation value. Table 11 represents the comparison of the natural order, the L1 Korean acquisition orders reported by the studies in the literature review section, and the findings from the current study.

Table 11. Acquisition order comparison

Morphemes/ Funcutors	ESL					EFL		
	Multi-L1s		Studies with L1 Korean learners			Mono-L1 Korean		
	Dulay & Burt (1974)	Krashen natural order (1977) <sup>†</sup>	Pak (1987)		Shin & Milroy (1999)	Mura- kami (2011)* <sup>†</sup>	Schenck & Choi (2013)**	Seog (2015)
			Children	Adults				
Progressive <i>-ing</i>	2	1	1	1	1	1	4 (8)	5
Plural <i>-s</i>	1	1	7	7	8	3	3 (4)	2
Copula <i>be</i>	3	1	2	2	3		1 (2)	1
Auxiliary <i>be</i>	4	4	3	3	5		2 (3)	7
Past-irregular	5	6	6	5	6		5 (9)	3
Past-regular <i>-ed</i>	6	7	5	6	4	1	8 (14)	4
Third person <i>-s</i>	7	7	8	8	7	3	7 (12)	8
Possessive <i>'s</i>	8	7	4	4	2	3	6 (10)	6

\* The unranked morphemes were not investigated in the original study.

\*\* A total of 16 morphemes were rank ordered in Schenck & Choi's (2013) study. The rank in the parentheses are the original rank of the 16 morphemes reported in Schenck & Choi's study.

<sup>†</sup> The accuracy orders were grouped or clustered in the original studies.

Looking at the comparison of the acquisition orders in Table 11, ESL and EFL differences can be noted immediately. The progressive *-ing* appeared later in the EFL acquisition order whereas it is one of the first to emerge in the ESL acquisition orders. A partial explanation for the disparity may be attributed to the difference that can arise from using oral versus written production data. For such reasons, Goldschneider and DeKeyser (2001), for their meta-analysis, selected only the 12 that used oral production data out of 25 studies stating that "it was crucial to combine only comparable types" (2001, p. 15). Larsen-Freeman (1975) reported that a different order was revealed for her written task. Others also agree that spoken and written data may result in different findings (e.g., Krashen, 1977; Ellis, 1994).

A more conspicuous and unexpected discrepancy was with the plural *-s* morpheme. The plural *-s* morpheme was acquired late in the L1 Korean ESL groups while, in contrast, it was acquired early in the L1 Korean EFL groups. In fact, plural

-s in the L1 Korean EFL acquisition orders from both the Schenck and Choi's (2013) study and the current study behaved in accordance to the proposed natural order.

According to Luk and Shirai's (2009) review article, the L1 Korean groups in the ESL context acquired the plural -s morpheme much later than proposed by the NOH due to L1 negative transfer (p. 733). While many studies considered the Korean plural marker dissimilar to the English plural -s morpheme in their explanation of the discrepancies in the acquisition order of the plural -s morpheme compared to the natural order (e.g., Pak, 1987; Shin & Milroy, 1999; Kwon, 2005; Weitze et al., 2009; Luk & Shirai, 2009, Murakami, 2011), Schenk and Choi (2013) considered the English plural -s and the Korean plural suffix to be similar giving the highest point 2 on a 0, 1, or 2 scale for presenting L1 similarity (Table 4, p. 51). Schenk and Choi's (2013) only mention of the plural -s morpheme is in the following statement: "Most features that emerge within the first half of the EFL sequence, for example, such as the copula, plural, and progressive, tend to be present in the Korean language" (p. 52).

The article, plural -s, and possessive 's are the most discussed morphemes in natural order studies when relating to L1 transfer effects for L1 Korean learners of English. For clarification, the following is a brief mention of some facts about the Korean language concerning the three morphemes: 1) Korean does not have an article system; 2) Korean has a morpheme *-tul* which functions like a plural marker; however, its use is optional and very restricted; and 3) Korean has a genitive marker *-uy*, which functions the same way as the possessive 's in English. Accordingly, for the article and possessive 's morphemes, studies have shown a general consensus in that for L1 Korean learners of English, L1 transfer facilitates the acquisition of the possessive 's morpheme while impeding the acquisition of the article. The general explanation, also in agreement, was that a similar possessive 's system exists in the Korean language while an article system does not exist in Korean.

However, in contrast to the many studies in the ESL setting that report a late acquisition of plural -s morpheme, Table 11 shows that L1 Korean EFL groups acquired the plural -s morpheme early as in the natural order. A discussion of whether Korean and English have a similar plural -s system or not is beyond the scope of this paper. Nonetheless, as mentioned above, a partial explanation could be that since plural -s is not obligatorily marked in Korean as in English, the confusion

or the differences may hinder acquisition as in the ESL orders, whereas the similarities in the two languages' plural system accompanied by other determinants such as instruction and input frequency may facilitate acquisition as in the EFL orders.

The results of the current study also revealed that the past-regular *-ed* and past-irregular morphemes were acquired earlier than in the previous studies. One possible reason for the disparities is that the number of different verbs present in the writing samples investigated in this study was very low. Table 12 and 13 show the most occurring past-regular and past-irregular verbs, respectively, in the writing samples. For the past-regular verbs, the nine verbs in Table 12 make up 69.93% of the total 542 occurrences. Even more notably, the four verbs shown in Table 13 make up 65.65% of the total 1281 past-irregular occurrences. Further comparison was not possible since the current researcher did not have the necessary details of the previous studies.

Table 12. Most used past-regular verbs

	Past-regular Verb	Number of occurrences
1	arrived	76
2	played	63
3	finished	54
4	called	42
5	started	41
6	asked	32
7	looked	26
8	wanted	23
9	talked	22
Total		379

Table 13. Most used past-irregular verbs

	Past-irregular Verb	Number of occurrences
1	said	410
2	went	203
3	ate	134
4	saw	94
Total		841

On a different note, methodology may have also influenced the disparity between the ESL and the EFL groups, viz. ESL groups were mainly scored on spoken data while the EFL groups were scored on written data. In dealing with spoken data, other issues may play a role in influencing the acquisition orders. As in Dulay and Burt's (1974) study, they had to exclude cases of back-to-back "s's" from the tally

due to the impossibility of determining where the “s” belonged (p. 42). For some learners, plural *-s* might be omitted in their spoken data due to difficulty in pronunciation. All in all, if the L1 morpheme is not clearly similar or clearly different from that of L2, other variables may play a more influential role in determining the acquisition order, consequently affecting the degree of L1 transfer.

Finally, one very important, markedly distinct deviation was also revealed from the comparison of the acquisition orders. At first, the findings from the current study seemed to confirm the natural order with the copula, plural *-s*, possessive *'s*, and 3<sup>rd</sup> person singular *-s* behaving as predicted by the natural order. However, a closer look reveals that the auxiliary *be* and progressive *-ing* morphemes markedly deviate from the natural order. The auxiliary *be* and progressive *-ing* appear much later than in the natural order or in the other ESL studies. Even for the two EFL groups, the acquisition order of the auxiliary *be* differed greatly; the auxiliary *be* ranked 2<sup>nd</sup> out of 8 morphemes in Schenck and Choi's (2013) study compared to 7<sup>th</sup> out of 8 in the current study.

In this regard, reasons for the disparity could be that the current study included overuse into the accuracy rate calculations which caused the acquisition percent to be much lower. Especially with the auxiliary *be* morpheme, excessive overuse in non-obligatory contexts was present in the written data. According to Choi (2013), L1 Korean learners in the EFL setting tend to use the verb *be* excessively in the initial stage of acquisition. After checking 1,235 error sentences, he reported that the overuse results from a combination of L1 transfer effect and the learners' developmental stage.

Findings revealed that the grammatical morpheme acquisition order of the L1 Korean EFL learners of this study did not confirm the natural order. In addition, comparison results disclosed several notable disparities between the current study's L1 Korean EFL acquisition order and the natural order, between the ESL orders and the EFL orders, as well as between the two L1 Korean EFL orders. Each case needs further investigation to identify and confirm the multiple determinants that can account for the deviations in the orders. The current study has been insightful in pointing out the need for configuring in the potential learners' IL productions in to the calculations for accuracy since the resulting acquisition orders can deviate significantly as in the case of the abovementioned auxiliary morpheme.

## 6. Conclusion

As mentioned in the preceding section, the acquisition order of the Korean EFL learners of the current study did not support the natural order. Moreover, the comparison of the resulting acquisition order from this study to that of previous studies revealed discrepancies among the L1 Korean groups learning English. The disparities were apparent not only between EFL and ESL groups, but also between different EFL groups indicating the need for further investigation into methodology as well as other external determinants that may possibly influence the morpheme acquisition order.

Morpheme order studies have been crucial in broadening our understanding of the language acquisition process. Furthermore, previous studies have been influential in guiding current and future research towards generalizability. The importance and the need for additional research targeting different L1s and L2s to check for discrepancies, to identify the influential determinants, to provide explanations with investigation into multi-determinant effects has been made clear. Nonetheless, before new studies can be conducted, there is an urgent need to address some of the criticism generated over the years, viz. the problem with Comparative Fallacy (Bley-Vroman, 1983), the omission of oversuppliance in the scoring method (Lightbown, Spada, & Wallace, 1980; Pica, 1983; Long & Sato, 1984), the inability to deal with avoidance issues in the calculation for accuracy, and the lack of consideration of the full range of a learner's IL productions.

The current study used a modified equation to calculate the accuracy rate. However, it needs to be refined since it does not account for all of the possible productions that may occur in a learner's IL. The full range of possible forms need to be identified, categorized, and assigned point values. Additionally, the matter of avoidance needs to be addressed; a way to identify and quantify avoidance issues since looking at SOC for underuse cannot account for all the avoided forms in the L2 learners' productions. Simply ignoring, omitting, or conducting studies on partially processed data can misrepresent the acquisition order and process.

At least with the scoring and calculation standardized in some way, full attention can be redirected again towards the very important and needed investigation of multi-determinant effects on the morpheme acquisition order. Stabilizing the methodology variables will empower morpheme order studies to become a valuable

tool in understanding the language acquisition processes with unlimited implications for second language teaching and acquisition.

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