

The Early Acquisition of Korean Morphology: A Case Study

Sue Young Kim

(The Training Program for Speech Pathologists, Yonsei University College of Medicine)

Sue Young Kim. The Early Acquisition of Korean Morphology: A Case Study. *Korean Journal of Communication Disorders*, 2, 89-118. The acquisition of verb and noun morphology in Korean was investigated longitudinally in one child from age 1;7 to 2;4. The findings revealed early production of a wide range of grammatical morphemes including the first 50 verb and noun suffixes. The agglutinating morphology and stress characteristics of Korean seemed to contribute to this early development. However, because the child had not yet acquired a number of Korean morphemes by the conclusion of the study, it is possible that the acquisition of morphology does not proceed as rapidly in Korean as in other agglutinating languages. Factors that might account for the differences in acquisition rate are discussed.

I. Introduction

In recent years, investigators have paid increasing attention to the acquisition of Korean. In addition to the practical value of such data (e.g. serving as normative information in the assessment of Korean children at risk), evidence on Korean acquisition can play a useful role in the development of theories of language acquisition in general. For example, investigations comparing Korean- and Japanese-speaking children have enabled researchers to separate acquisition patterns attributable to the typological characteristics of a language from those due to the idiosyncratic characteristics of the language (Clancy, Lee & Zoh, 1986). Also more recently, linguists have applied different theories to explain Korean children's acquisition of case marking system: the case-tier theory (Chung, 1994) and the role and reference theory (Park, 1995).

The previous investigations have dealt with various aspects of Korean acquisition: sentence-ending (=SE) suffixes¹ (Choi, 1986, 1988a, 1991; C. Lee, 1993; H. S. Lee, 1985, 1993), negation (Choi, 1988b; Choi & Zubin, 1985; Hahn, 1981), word order (S. W. Cho, 1981; S. Y. Kim, 1993), noun suffixes¹ (Choi, 1993; Chung, 1993, 1994; Han, 1993; Lee & Pae, 1989; Pae, 1997; Park, 1995), grammatical subjects (Clancy, 1984, 1995), wh-questions (Clancy, 1989a, 1989b; S. Kim, 1995), complementation (Y. Kim, 1985), relativization (Clancy, Lee & Zoh, 1986; Y. Kim, 1987; K.-O. Lee, 1990), reflexives/ pronouns/ anaphora (S. W. Cho, 1985, 1991, 1993; H. Lee & Wexler, 1987; K.-O. Lee, 1993), argument ellipsis (Clancy, 1993, 1994), deontic conditionals (Akatsuka & Clancy, 1993), the grammatical status of *ke(s)* (Y. Kim, 1993; Whitman, 1993), and lexical development (Au, Dapretto & Song, 1994; Choi, 1997; Choi &

Bowerman, 1991; Choi & Gopnik, 1995; Gopnik & Choi, 1990, 1995; Y. Kim, 1995a, 1995b; H. Lee, 1993; I.-H. Lee, 1993; O'Grady, 1993; Pae, 1993). Although these studies of Korean acquisition can offer important insights into the nature of language development, the bulk of the data for the early stages of development comes from a relatively small number of children. If we exclude the few studies that used rather unsystematic preliminary data collection method such as occasional diary-note keeping or just one-time one-hour sampling per child, 13 children have by far provided the data base for longitudinal studies dealing with features of Korean acquired before age 3;0.

In this context, the present study was designed to add to the available data by providing a comprehensive view of one child's early acquisition of morphology. Specifically, I present a longitudinal study of the child's use of 50 early morphemes from age 1;7 to 2;4. The results of the study will be discussed both in terms of previous findings on Korean as well as in terms of their implications for processing strategies presumed to operate across languages.

II. General Characteristics of Korean Morphology

Korean is an SOV language with an agglutinating morphology. Consistent with its typology, Korean makes use of verbal suffixes, noun suffixes, and preposed adjectives and relative clauses. Verbs and nouns are not marked for person, number, or gender, and there is no agreement between the subject and verb. Word order is flexible, and extensive ellipsis of nouns and noun suffixes occurs in colloquial speech when their referents can be inferred from context. These general properties of Korean have much in common with Japanese (Clancy, 1985; Y. Kim, 1997). The following description of Korean verb and noun morphology is by no means exhaustive. The coverage is restricted only to those features relevant to my analysis of data.

1. Verb morphology

The verb morphemes in Korean mark such grammatical notions as sentence modality, tense, voice, aspect, and conjunction. Minimally a verb stem will have at least one bound morpheme.

(1) Sentence-ending morphemes

SE morphemes convey sentence mood (indicative, imperative, interrogative, positive) and different styles of speech (intimate, familiar, plain, polite, formal). Some SE morphemes also convey pragmatic notions (e.g. *-cyana* for seeking agreement), which have

been viewed as epistemic and deontic modality by some linguists (Choi, 1988a; H. S. Lee, 1993). Korean differs from Japanese in that, in the former, SE morphemes are obligatory, more numerous, and have less of a 'pragmatic/emotional component' (Choi, 1988a) than in Japanese.

(2) Tense morphemes

The tense morpheme in Korean appears in word-medial position, such as *-ess-* for past, *-keyss-* for future, and *-(nu)n-* for present. Tense can also be marked through the copula structure *-i-* attached to the 'bound' noun *ke(s)* to express future intention or probability (*-(u)l ke(s)-i-*), present description (*-nun ke(s)-i-*) and past description (*-(u)n ke(s)-i-*). Y. Kim (1997) treats this '*ke(s) i-*' construction as one of the complement-taking predicates. However, it is my view that in early child Korean it should be analyzed as a special type of tense and/or modality-related morphemes (C. Lee, 1993).

The past morpheme *-ess-* is not highly transparent. It has three allomorphs (*/əs/*, */as/*, */jəs/*²) that are determined by the vowel of the verb stem. Furthermore, if the following suffix begins with a consonant, the */s/* is produced as [t]. The word-medial and phonetically variable nature of the Korean past morpheme makes it quite different from its Japanese counterpart *-ta*. In Japanese, the past morpheme can appear in sentence-final position and is phonetically stable.

One very interesting aspect of Korean tense is that the present tense is marked by *-(nu)n-* for the SE suffixes *-ta* or *-tay*, while other SE suffixes take zero-marking for the present tense.

(3) Prenominal morphemes

For certain non-sentence-final verbs, other types of word-final suffixes are used instead of SE morphemes. One of these is the 'prenominal' suffix. An example of a prenominal suffix is the relative clause marker. The relative clause marker is attached to the embedded verb, and because this verb immediately precedes the head noun, the marker is prenominal. The relative clause marker is not preceded by a tense morpheme because the particular relative clause marker selected is dependent upon the tense expressed. It should be noted that Japanese and Korean are very similar in their relative clause structure, but that only Korean makes use of a relative clause suffix.

Another common prenominal suffix is attached to adjectives that immediately precede nouns. Suffixes of this type are considered to be part of verb morphology because in Korean the adjective is merged with 'to be.' Furthermore, as with relative clause markers, a separate form is used for each tense.

(4) Continuative morphemes

The ‘continuative’ morphemes combine two verbs in sequence to convey aspectual or modal nuances, to form the progressive, or to create compound verbs. In linguistics literature there have been much debate regarding the nature of these continuative morphemes and their grammatical structures. They have been treated either as an INFL (Choe, 1988), as a COMP (J.-O. Cho, 1988; Y. Y. Cho & Sells, 1995; Y. Kim, 1997), or as a dummy morpheme (S. Lee, 1992, 1993). Although a more theoretical and comprehensive analyses are warranted for the explanation of all the morphemes of this type, the most plausible arguments seem to be the ‘serial verb’ analysis by S. Lee (1992, 1993)³ and the ‘lexically attached affixal complementizer’ analysis by Y. Y. Cho & Sells (1995)⁴. Following their line of arguments and also the analysis of the comparable structure in Japanese by Clancy (1985), I adopt Clancy’s (1985) term ‘continuative’ morpheme for these ‘serial verb’ type morphemes *-e*, *ko*, *ci-*, and *-key*.

(5) Conjunctive morphemes

Conjunctive suffixes are attached to the verb in the first of two conjoined clauses and take either present or past tense morpheme. They mark such semantic relations as conjunction, sequence, condition, reason, or purpose.

(6) The ‘*nun*’ puzzle in Korean morphology

The SE, prenominal, and conjunctive suffixes can express tense in different ways. Of the three morphemes *-nun-*, *-un-*, and *-n-*, the right form should be selected depending on the verb type (verb, adjective, existential verb, copula), verb suffix type (SE, prenominal, conjunctive), verb-final phoneme (vowel, consonant), and tense (present, past). There exists a high degree of complexity due to the extensive overlapping and inconsistency as is illustrated in Table 1. For the lack of a better term, I would call this as ‘*nun*’ puzzle in Korean morphology.

Table 1. The ‘*nun*’ puzzle in Korean morphology

	SE Suffix <i>-ta</i> , <i>-tay</i>			Prenominal Suffix		
V ^a present	V(-v) ^b	+ <i>n</i>	+ <i>ta/ tay</i>	V(-v)	+ <i>nun</i>	N
	V(-c) ^b	+ <i>nun</i>	+ <i>ta/ tay</i>	V(-c)	+ <i>nun</i>	N
past	V(-v)	+ <i>ess</i>	+ <i>ta/ tay</i>	V(-v)	+ <u><i>n</i></u>	N
	V(-c)	+ <i>ess</i>	+ <i>ta/ tay</i>	V(-c)	+ <u><i>un</i></u>	N
A ^a present	A(-v)	+ Φ	+ <i>ta/ tay</i>	A(-v)	+ <u><i>n</i></u>	N

	A(-c)	+ \emptyset	+ <i>ta/ tay</i>	A(-c)	+ <u><i>un</i></u>	N
past	A(-v)	+ <i>ess</i>	+ <i>ta/ tay</i>	A(-v)	+(<i>ess</i>) <u>+<i>ten</i></u> ^c	N
	A(-c)	+ <i>ess</i>	+ <i>ta/ tay</i>	A(-c)	+(<i>ess</i>) <u>+<i>ten</i></u>	N

^a V = verb, A = adjective; ^b V(-v) = verb which ends with a vowel, V(-c) = verb which ends with a consonant; ^c Because there is no past tense pronominal morpheme for adjectives, *-ten* (reflective pronominal suffix) can be used to denote past tense.

The situation is even more complex because the CON/TOP noun suffix *-nun* can be contracted to *-n* after a noun that ends with a vowel and thus shares the same three allomorphs '*nun, un, n*' as is illustrated below.

N(-v) + <i>nun</i> (uncontracted)	e.g.	<i>na-nun</i>	I-CON/TOP	'as for me'
<i>n</i> (contracted)		<i>na-n</i>	I-CON/TOP	'as for me'
N(-c) + <i>un</i> (uncontracted)		<i>cip-un</i>	bear-CON/TOP	'as for the house'

The complications in the 'nun' puzzle can be summarized as follows:

- (a) Verbs and adjectives take different tense forms.
- (b) In pronominal and relative clause suffixes, verb past and adjective present take the same forms (underlined in Table 1).
- (c) The existential verbs (*iss-*, *eps-*) and copula (*i-*, *ani-*) sometimes behave like an adjective and other times like a verb.
- (d) Some conjunctive morphemes (e.g. *-(nu)ntey*) take pronominal-like allomorphs for present tense and SE-like allomorphs for past tense.
- (e) Some SE suffixes (e.g. *-ci, ca, cyana, ney*) take zero marking for present tense.

2. Noun morphology

Korean has a rich noun morphology, with approximately 50 noun suffixes. Noun suffixes are used to mark notions such as subject, object, dative, comitative, location, direction, source, and vocative. As in Japanese, ellipsis of noun suffixes is frequent in Korean colloquial speech.

III. Method

1. Subjects

The child serving as the subject in this study was SS, a boy age 1;7 at the outset of the observational period. SS was the child of a Korean father and mother who had just

moved to the U.S. for a temporary stay because the father was enrolled in a graduate school. The mother was SS's principal caregiver. SS had no brothers or sisters, and Korean was the only language spoken in the home. English was heard on occasion on the playground or when the parents encountered a non-Korean-speaking acquaintance. However, until the last month of the study, SS's linguistic environment could be considered to be monolingual. During the final month of the investigation, SS began attending a nursery school in which English was the only language spoken.

2. Procedure

SS was visited in the home biweekly from age 1;7 to 2;4. The duration of each visit ranged from 60 to 90 minutes. During each of these sessions, SS interacted with his mother and the investigator in play activities. SS's speech was recorded using a Panasonic RQ-J36 cassette recorder and Sony ECM 150 microphone.

3. Analysis

The two samples obtained during each calendar month were collapsed to form a single sample. This action created larger samples that facilitated the identification of

Table 2. SS's chronological age (CA), number of spontaneous utterances, and MLU in words during each sampling period of the study

CA (yr;mos)	Number of utterances	MLU ^w
1;7	105	1.04
1;8	170	1.28
1;9	289	1.15
1;10	354	1.50
1;11	315	1.87
2;0	346	2.36
2;1	346	2.06
2;2	377	1.98
2;3	409	2.21
2;4	757	2.07

developmental trends, and seemed justified because no two samples within the same calendar month revealed dramatic differences in SS's use of any feature under study. The number of

spontaneous utterances in each of the collapsed samples, and SS's mean length of utterance in words (MLU^w) in these samples can be seen in Table 2.

The structure of Korean does not lend itself to the identification of obligatory contexts. For these reasons, I have adopted the analysis procedure of Choi (1988a), with some modifications.⁵ For each (collapsed) sample I identified the number of different words (types) to which each morpheme was attached as well as the total number of words (tokens) to which it was attached. I then examined the cumulative number of word types with which the morpheme was used across samples. I considered a morpheme to be productive if it reached the point of having been attached to five different word types.

IV. Results

1. Verb morphology

A summary of SS's use of verb morphology appears in Table 3. In this table, each morpheme is listed by the age at which the criterion for presumed productivity was reached.

(1) SE morphemes

In Table 3 it can be seen that 11 SE morphemes reached the level of productivity by age 2;4. The first three of these were productive prior to age 1;10, when SS's MLU was below 1.50 words. Many single-word utterances included these morphemes, such as:

- | | | |
|-------|--------------------|------------------|
| (1;7) | <i>wul-e</i> | '(He) cries' |
| | cry-DEC.AS | |
| (1;8) | <i>chac-ess-ta</i> | '(I) found (it)' |
| | find-PAST-DEC.UN | |
| (1;6) | <i>ppay-e!</i> | 'Pull (it) out!' |
| | pull out-IMP | |

By using *-ta* SS was expressing self-exclamation on some newly-discovered information. An interesting feature of *-ta* was that until age 2;1 it had been used almost exclusively with either present-tense existential verbs or verbs in the past tense. In the latter case *V-ess-ta* denoted either completion or result of an action as the following examples illustrate:

- | | | |
|--------|-----------------------|--------------------------------|
| (1;11) | <i>ta po-ess-ta</i> | '(I) have finished (the book)' |
| | all see-PAST-DEC.UN | |
| (2;0) | <i>tteleci-ess-ta</i> | '(It) has fallen' |
| | fall-PAST-DEC.UN | |

Table 3. Age at which verb morphemes met the criterion for productivity⁶

CA SE	Tense	Prenominal	Continuative	Conjunctive
1;7	-e (DECAS)			
1;8	-ess- (PAST)			
1;9	-ta (DEC.UN)			
	-e! (IMP)			
1;10				
1;11	-(u)l ke(s)-i- (FUT.INTN)			
2;0	-nun ke(s)-i- (PRES.DES)	-(u)n (ADJ.PRES)	-e cwu- (CONT give)	
2;1	-tay (RPT)			-ko (CONJ.SEQ)
2;2	-ca (PROP)	-(nu)n- (PRES)	-nun (REL.PRES)	-nuntey (CONJ.BAC)
	-e? (INT)			
2;3	-(u)llay (VOL)		-e po- (CONT try)	-(u)byeko (CONJ.INT)
	-cyana (DECAG)			
2;4	-(u)lkkey (INTN)			
	-ney (DECDS)			
	-ci? (INT.CF)			
BEYOND^a				
	-(e)la! (IMP.PL)	-(u)n ke(s)-i (PAST.DES)	-ci mal- (CONT don't)	-(e)se (CONJ.CNT)
	-ci (DEC.CF)		-ko iss- (CONT exist)	-(u)myen (CONJ.CON)
	-tay? (INT.RPT)		-e twu- (CONT leave)	-(u)le (CONJ.PUR)
	-(u)lkka? (INT.OP)		-e peli- (CONT discard)	-taka (CONJ.INR)
				-(e)se (CONJ.RSN)

^a These morphemes listed under 'BEYOND' were used by SS but have not reached criterion until age 2;4.

From age 2;1 *-ta* was increasingly used with verbs in the present tense but adjectives were still rarely attached to it. On the other hand, *-e* showed a different pattern of usage in terms of the verb types it was attached to. It rarely was used with the existential verbs *iss-* and *eps-* but was commonly used with verbs and adjectives both in the present and in the past tense.

The remaining SE morphemes acquired by SS were usually used in multi-word utterances. These did not reach the criterion of productivity until age 2;0 or later. Some

examples include the following:

- (2;1) *beybi aphu-tay* ‘(Someone) says (the) baby is sick’
 baby be:sick-RPT
- (2;3) *Seongsoo i-ke(s) po-llay* ‘Seongsoo (=I) will see this’
 Seongsoo this.thing see-VOL

The data on SS’s use of SE morphemes suggest early and extensive use of these forms. However, in spoken Korean there are approximately 30 SE morphemes. Consequently, one cannot conclude that SS had acquired the full set of SE morphemes. Among the morphemes missing from SS’s speech were *-eyo* for the familiar style and all four that are used in formal address such as *-(su)pnita*.

(2) Tense morphemes

The pattern of SS’s acquisition of tense morphemes can be seen in Table 4. The past morpheme *-ess-* was acquired first, at age 1;8. At age 1;11, SS showed use of the form *-(u)l ke(s)-i-*, which signals (immediate) future intention. Until age 2;3, SS’s use of this form was limited to statements about his own impending actions. The present tense descriptive form *-nun ke(s)-i-* was used productively at age 2;0. And interestingly, *-(nu)n-* (PRES with *-ta/-tay*) was acquired after the past or future forms.

- (1;8) *aphu-ess-e* ‘(I) was sick’
 be:sick-PAST-DEC.AS
- (1;11) *haymbek mek-ul ke(s)-i-e* ‘(I) will eat hamburger’
 hamburger eat-FUT.INT-DEC.AS
- (2;0) *Seongsoo khola mek-nun ke(s)-i-e* ‘Seongsoo is having coke’
 Seongsoo coke eat-PRES.DES-DEC.AS
- (2;2) *wuywu mek-nun-ta* ‘(He) drinks milk’
 milk eat-PRES-DEC.UN

Table 4. SS’s use of tense morphemes^a

CA	<i>-ess-</i> PAST	<i>-(u)l ke(s)-i-</i> FUT	<i>-nun ke(s)-i-</i> PRES.DES	<i>-(nu)n-</i> PRES with <i>-ta/-tay</i>	<i>-(un) ke(s)-i-</i> PAST.DES
1;7	1/1 ^b				
1;8	<u>22/6</u>				
1;9					
1;10					
1;11		<u>10/6</u>			
2;0			<u>26/8</u>		2/2

2;1	3/2	2/2
2;2	<u>26/11</u>	2/2
2;3		2/2
2;4		2/2

^aEntries are provided only up to (and including) the age at which criterion was met.

^bThe number left to the slash denotes the number of cumulative word tokens and the number right to the slash denotes the number of cumulative word types to which the specific morpheme was attached.

^cThe underline specifies the level at which each morpheme reached the productivity criterion.

Probably the most striking aspect of SS's acquisition of tense morphemes is that for two of the forms acquired, *-(u)l ke(s)-i-* and *-nun ke(s)-i-*, no use was seen until the age level at which they met the productivity criterion. Certainly the slopes of these acquisition curves were exaggerated by the fact that the sample for each month was actually the sum of two smaller samples obtained two weeks apart. Nevertheless, it is noteworthy that there was not a trace of these two morphemes in prior months and the acquisition of these two morpheme constructions is rather abrupt as can be seen in Table 4. On the other hand, SS showed only minimal use of *-(u)n ke(s)-i-* (PAST.DES) during the study. In addition, one other Korean tense morpheme, the form *-keyss-* (FUT), was not used at all by SS.

(3) Prenominal suffixes

Of the seven prenominal suffixes in Korean, SS showed use of two. One interesting aspect of SS's early use of *-(u)n* is that, although this form was attached to a variety of adjectives, the following noun was always one of the 'bound' nouns, *ke(s)* 'thing' or *tey* 'place.' At ages 2;1 and 2;2, when other nouns followed the adjective plus suffix, the bound morpheme *ke(s)* was retained. The redundant use of *tey* did not occur in the data. At age 2;3, this redundant use of *ke(s)* ceased.

(1;11)	<i>khu-n</i>	<i>ke(s)</i>		'(a) big thing'
	be:big-ADJ.PRES	thing		
(2;1)	* <i>khu-n</i>	<i>ke(s)</i>	<i>koki</i>	*'(a) big thing fish'
	be:big-ADJ.PRES	thing	fish	
(2;2)	* <i>yepu-n</i>	<i>ke(s)</i>	<i>pwungya</i>	*'(a) pretty thing car'
	be:pretty-ADJ.PRES	thing	bruum=car	
(2;3)	<i>ccokumah-n</i>	<i>pwungya</i>		'(a) very small car'
	be:very:small-ADJ.PRES	bruum=car		

The pattern of SS's acquisition of the relative clause marker was similar to that of the adjectival suffix, with the difference that the former was acquired at a later age. Just like the

adjectival suffix, the relative clause marker began to be used with *ke(s)* or *tey* as displayed by the first example below. Unlike the case with the adjectival suffix, the redundant use of *ke(s)* or *tey* with a relative clause suffix did not occur in the data. At age 2;3 there were two utterances in which SS was using a lexical head noun correctly for the relative clause construction. The second utterance illustrated below is an example of such a case.

(2;2) [pointing to the car lane in a big toy garage]

i-ke(s) pwungya ka-nun tey

this:thing bruum=car go-REL.PRES place

'This (is a) place where (the) car(s) go'

(2;3) *ung, bwungya ka-nun kil-i-e*

yes, bruum=car go-REL.PRES street-be-DEC.AS

'Yes, (This) is the street where car(s) go'

(4) Continuative morphemes

SS made use of six continuative morphemes and reached criterion on two: *-e cwu-* at age 2;3, and *-e po-* at age 2;3.

(2;0) *emma, ha-e cwu-e i-ke(s)!* 'Mommy, please do this for me!'

mommy do-CONT give-IMP this-thing

(2;3) *napi chac-e po-ca* 'Let's try to find (a) butterfly'

butterfly find-CONT try-PROP

(5) Conjunctive morphemes

SS's use of three conjunctive suffixes reached the level of productivity during the course of the study. Five other conjunctive morphemes were used only to a limited degree. Considering that spoken Korean has approximately 60 conjunctive suffixes, it is clear that SS's development in this regard was still quite restricted at age 2;4. Examples of utterances containing conjunctive forms included the following:

(2;1) *pwungya tha-ko haymbeke cip-ey ka-l ke(s)-i-e*

bruum=car ride-CONJ.SEQ hamburger house-DIR go-FUT.INT-DEC

'(I) will ride a car and go to a hamburger house'

SS occasionally expressed conjoining relations with one of the SE suffixes as follows:

(2;1) *yeki-ta *ppangha-e (=ppangha-ese) aphu-e*

here-LOC.SP do:bang-DEC.AS be:sick-DEC.AS

*'(Because it) crashes here, (it) hurts'

(2;3) *tto eti *ka-ci (=ka-se) nol-ci?*

also where go-INT.CF play-INT.CF

*'By the way, where (shall we) go? play?'

(6) Errors regarding the 'nun' puzzle

Related to the 'nun' puzzle mentioned above, the following errors were abundant from age 2;2.

(a) For adjectives with *-tay*, present tense is redundantly marked.

(2;2) *pay *pwulu-n-tay (=pwulu-tay)*

stomach be:full-RPT

'(He) says (he) is full'

Incorrect form *-un-* was used for *-nun-* for present tense verbs.

(2;4) *yay-ney-twu *mek-un-tay (=mek-nun-tay)*

this:child-PL eat-RPT

'These children says they eat also'

(b) For relative suffix, verb present form was substituted by adjective present form.

(2;4) [looking for sugar while eating a rice cake]

*ike(s) *ccik-un (=ccik-nun) ke(s) etta noh-a?*

this:thing dip-REL.PRES thing where put-INT

'Where (do I) put the thing that (I) dip (this) in?'

(= Where is the thing that I dip this rice cake in?)

(c) The existential verb was incorrectly treated as a verb rather than an adjective for a prenominal suffix.

(2;3) *yay . . . akka ccaykccayki *iss-un (=iss-ten) ke(s)*

this:child . . . before bird exist-REL.PAST thing

'this . . . bird that was (here) before'

Copula was treated incorrectly as a verb and was marked for present tense by *-n-*.

(2;4) **pay-(i)-n-ta (=pay-(i)-ta)* '(It) is (a) boat'

boat-(is)-PRES-DEC.UN

(d) For past tense of *-(n)untey*, the prenominal-like form was incorrectly used instead of the SE-like form.

(2;4) *yoki pang-ey ca-taka *no(l)-ntey (=no-nuntey) yeki-se mek-ess-e*

here room-LOC sleep-CONJ.INR play-CONJ.BAC here-LOC eat-PAST-DECAS

'After (I) slept in (this) room, (I) played and (I) ate here'

(e) For the SE suffix *-ci?* present tense was incorrectly marked by *-n-*.

(2;3) *yay eti *ka-n-ci (=ka-ci)?*

this:child where go-INT.CF

'(I wonder) where this child is going?!

2. Noun morphology

A summary of SS's use of noun suffixes appears in Table 5. Of the fourteen noun suffixes SS used during the course of the study, nine reached the criterion for productivity. For most of these, acquisition was gradual.

Table 5. Age at which noun morphemes met the criterion for productivity

CA	Noun Morpheme	
1;7		
1;8		
1;9		
1;10		
1;11	- <i>ey</i>	LOC.ST
	- (<i>n</i>) <i>un</i>	CON/TOP
2;0	- <i>ka/i</i>	SUBJ
2;1		
2;2	- <i>ey</i>	DIR
	- <i>to</i>	'also'
2;3	- (<i>i</i>) <i>lang</i>	COM
	- (<i>ey</i>) <i>se</i>	SRCE
2;4	- (<i>ey</i>) <i>se</i>	LOC.AC
	- (<i>u</i>) <i>lo</i>	DIR.SP
BEYOND ^a	- (<i>ey</i>) <i>ta(ka)</i>	LOC.SP
	- (<i>i</i>) <i>ya</i>	VOC
	- <i>tul</i>	PL
	- <i>man</i>	'only'
	- <i>hanthey</i>	DAT

^a These morphemes were used by SS but have not reached criterion until age 2;4.

As Table 5 displays, the earliest acquired noun suffixes were -*ey* and -(*n*)*un*. The locative suffix -*ey* is used with stative verbs. During the observational period SS used this suffix almost exclusively either with existential verbs *iss-*, *eps-* or without any verb form.

(1;10) *twuy-ey eps-e* '(There) is nothing in the back'

- behind-LOC.ST not:exist-DEC.AS
 (1;11) *mith-ey iss-ta* ‘(It) is under (it)’
 under-LOC.ST exist-DEC.UN
 (1;7) *coki-ey* ‘over there’
 over:there-LOC.ST

However, even after *-ey* reached criterion at 1;11, SS produced several errors. It was substituted for the subject suffix *-ka/i*, or was incorrectly used in naming situation. Later on SS also used it incorrectly for action-like verbs.

- (1;11) *eps-e *ip-ey (=ip-i)* *‘(It) does not have at (a) mouth’
 not:exist mouth-LOC.ST
 (2;0) [in naming a puppy house in a picture book]
 **m engm engcip-ey (=m engm engcip/m engm engcip-i-e)*
 puppy house-LOC.ST
 *‘(It’s) at (a) puppy house’
 (2;4) *yoki pang-ey (=pang-eyse) ca-taka . . .* *‘after (I) slept in this room . . .’
 here room-LOC.ST sleep- CONJ.INR

Two other locative suffixes *-(ey)se* and *-(ey)ta(ka)* occur in the data but only the former reached the criterion at 2;4. While *-(ey)se* is used with action verbs, *-(ey)ta(ka)* is used with verbs marking manipulation of objects at smaller or more specific places (e.g. *noh-put*). Interestingly, after SS reached the level of productivity with *-(ey)se* at age 2;3, this form occasionally substituted for the earlier-acquired *-ey*. Other types of errors were also noted for *-(ey)se*.

- (2;3) **yeki-se (=yeki(ey)) salam eps-ta* *‘(There) is no man here’
 here-LOC man not:exist-DEC.UN
 (2;4) M: *kyay-twu kkoc-e po-e!* ‘Try to put it (there) also!’
 that:child-‘also’ put-CONT try-IMP
 SS: **eti-se (=eti-ta)?* *‘Where at?’
 where-LOC.AC
 (2;4) M: *salam-un kuli-lo tha-ko*
 people-CON/TOP that:way-DIR.SP ride-CONJ.SEQ
 SS: **eti-se (=eti-lo)?* *‘Where at?’
 where-LOC.AC

Although *-ka/i* and *-(n)un* reached productivity criterion at ages 1;11 and 2;0, respectively, the following errors were not infrequent in subsequent samples.

- (a) *-ka/i* deleted when its occurrence was obligatory from context:
 (2;0) Examiner: *emma-to tuli-ess-eyo?* ‘Did mom give (it) also?’

mommy-also give-PAST-INT.FM

SS: **Seongsoo-φ* (=Seongsoo-ka) *cwu-ess-e* *'Seongsoo gave it'
 Seongsoo give-PAST-DEC.AS

(b) -ka/i (ey)se

(2;2) **yeki-se* (≡*yeki-ka*) *haymbeŋcɨp-iya* *'This place is at (a) hamburger house'
 this:place-LOC.AC hamburger:house-COP

(c) -ka/i (n)un

(2;1) M: *nwu-ka wuncenha-e?* 'Who is driving?'
 who-SUBJ drive-INT

SS: **yay-nun* (≡*yay-ka*) *'As for this child'
 this:child-CON/TOP

(d) -(n)un -ka/i

(2;4) M: *kathi mantul-ca* 'Let's make (it) together'
 together make-PROP

SS: *aniya, *Seongsoo-ka* (=Seongsoo-nun) *an mantul-llay*
 no, Seongsoo-SUBJ not make-VOL
 *'No, Seongsoo (me) won't make (it)'

(e) -lang -ka/i

(2;1) M: *nwukwu-lang ha-l ke(s)-i-e ppikkapwu?*
 whom-COM do-FUT.INT-INT peekaboo
 'With whom are you going to do peekaboo?'

SS: **appa-ka* (≡*appa-lang*) *'Daddy (will)'
 daddy-SUBJ

(f) -to -(n)un

(2;4) [looking at a picture book] SS: *nwun eps-ta nwun*
 eye not:exist-DECUN eye
 '(There) is no eye'

M: *kwuy-nun?* SS: **kwuy-nun* (≡*kwuy-to*) *eps-e*
 ear-CON/TOP ear-CON/TOP not:exist-DECAS
 'What about ear?' *'As for the ear, (there) is none'

M: *tto p-un?* SS: **p-un* (≡*p-to*) *eps-e*
 and mouth-CON/TOP mouth-CON/TOP not:exist-DECAS
 'And what about mouth?' *'As for the mouth, (there) is none'

M: *p-to eps-e?! kho-nun?* SS: *kho-to eps-e*
 mouth-also not:exist-INT?! nose-CON/TOP nose-also not:exist-DECAS
 'There is no mouth, either?! What about nose?' '(There) is no nose, either'

(g) -(n)un -to

(2;4) [when he cannot get the ladder of the fire engine moving]

SS: *i-ke(s) an toy-ney*

this-thing not work-DEC.DS

'This thing doesn't work'

[while he's moving the ladder of another car]

SS: **i-ke-to-n (=i-ke-nun) toy-ney*

this-thing-'also'-CON/TOP work-DEC.DS

*'But as for this, it also works'

M: *ung?*

SS: [while moving the same ladder]

yes?

**i-ke-to (=i-ke-nun) toy-ney*

'Sorry?'

this-thing-also work-DEC.DS

*'This also works'

Although the noun suffix ellipsis is permissible, there are cases where a particular noun suffix is required depending on the context. In addition to the *-ka/i* deletion mentioned above, SS sometimes made deletion errors with noun suffixes *-ey* (DIR) and *-lang* in these obligatory context.

(2;4) **molay (=molay-ey) ka-ess-e*

*'(I) went (the) sandbox'

sand

go-PAST-DEC.AS

(2;4) **sensaengnim (=sensaengnim-ilang) an no-llay*

*'(I) won't play (the) teacher'

teacher

not play-VOL

The overall order of acquisition of early noun suffixes can be summarized as follows:

LOC.ST

SUBJ

DIR

LOC.AC

CON/TOP

'also'

DIR.SP

COM

SRCE

IV. Discussion

Before turning to the implications of these findings for present notions of universal language acquisition processing strategies, I should comment on how these results relate to previous findings on Korean. SS's early use of the SE morphemes *-e* (DEC), *-ta*, and *-e!* (IMP) accord well with findings reported by Choi (1986, 1988a, 1991) and Y. Kim (1997). Choi noted that these three morphemes were acquired first in her data, a finding of considerable importance given that these morphemes express 'epistemic modality,' that is, the degree of certainty that the speaker has about the proposition as a whole. Earlier work had suggested that epistemic modality is acquired after 'deontic modality,' which deals with the ability, desire, or obligation of the agent of the sentence toward the event in the proposition. Choi

reported that the first two SE morphemes that concerned deontic modality in her data, *-(u)llay* and *-(u)lkkey*, emerged after several morphemes denoting epistemic modality had already appeared. As can be seen in Table 3, the same held true for my subject, SS.

More recently, C. Lee (1993) reported that the first SE suffix in his data was *-e!* occurring around age 1;0 to 1;3. However, it is not clear whether he considered the first emergence or productive use as the occurrence of a morpheme. On the other hand, Y. Kim (1997) presents *-e* as the first acquired SE suffix denoting either declarative or interrogative mood. However, considering that my subject acquired *-e!* (INT) at a rather later stage (age 2;2) than *-e* (DEC.AS, at age 1;7), these two SE suffixes should be treated as homophonous but two separate morphemes. Although Y. Kim (1997) also reported that *-ta* was used typically with adjective expressions, my subject's use of this suffix with adjectives was very limited until the final phase of the study.

Both Choi (1991) and Y. Kim (1997) reported that the SE suffix *-ta* was used to denote some newly-discovered information in the subjects' here-and-now and that it was used most frequently with the existential verbs. The present finding also confirms these previous results. As was mentioned by Choi (1990), these results suggest that the acquisition of this suffix *-ta* at around age 1;9 may be closely related with the children's cognitive development of object-permanence concept.

According to the data reported by Y. Kim (1987), Korean children show an ability to produce well-formed prenominal adjective and relative clause constructions at the same time. In accounting for this finding, Kim noted that there were structural parallels between the two constructions, and phonological similarities among some of the suffixes required. In the present study, well-formed prenominal adjectives and relative clauses did not appear simultaneously. The first appearance of the relative clause marker as well as its criterion-level use lagged behind the equivalent milestones for the prenominal adjective suffix by approximately two months. However, even in the present study, the acquisition of the relative clause marker occurred at a young age (criterion at 2;2). Such a finding lends credence to the view of Clancy, Lee and Zoh (1986) that the presence of a relative clause suffixes in Korean but not Japanese gives Korean children an advantage over Japanese children on tasks of interpreting the meaning of relative clause constructions. Given that these tasks are typically presented to six-year-olds, it is clear from my results that Korean children have had ample time to acquire the use of these suffixes in their own speech.

One very interesting and common error with the prenominal and relative clause suffixes was the redundant use of the 'bound' morpheme *ke(s)*. Regarding the grammatical status of *ke(s)* in relative clause constructions, Y. Kim (1997) presents interesting arguments against the COMP analysis by Whitman, K.-O. Lee & Lust (1991) and Whitman

(1993). As one of her arguments, she included the semantically restricted nature of *ke(s)*. While I agree with her about the pronominal head analysis of *ke(s)* in relative clause constructions, I present the comparable grammatical status of *tey* as an additional supporting evidence for the pronominal head analysis. In early child Korean, not only *ke(s)* but also *tey* are used as redundant pronominal heads, and their occurrence is mutually exclusive. That is, *ke(s)* cannot be used for those relative clauses which take *tey* as their pronominal head. This mutually-exclusive distribution pattern can be another evidence why *ke(s)* should be categorized as a pronominal head in relative clause constructions rather than as a comp.

Clancy (1984) pointed out that young Korean children's early use of the noun suffix *-ka/i* can serve as a metric by which one can measure the degree to which children's initial notion of subject turns on semantic factors such as animacy or agency. In Clancy's study, the first use of this suffix appeared in sentences referring to human subjects; only somewhat later did the two children in the study apply the suffix to animate subjects. In the present investigation, SS attached this suffix to a word representing an animate agent in his first and only use of this form at age 1;11. At age 2;0, two of the six words to which *-ka/i* was attached were inanimates that were serving other than an agentive role. This suffix was attached to several additional words representing inanimates during the next month. Although these data are only suggestive, they hint at the possibility that Korean children's early grammatical categories may not be severely restricted in their semantic scope.

One interesting finding about noun suffix acquisition in the present study is the extensive error patterns of these morphemes even after they reached the productivity criterion. Although a more stringent criterion was used in the present study as a measure for productivity, the results about error patterns suggest that despite its usefulness as an efficient tool for identifying the overall trend of acquisition, using such a criterion alone may not represent the more in-depth acquisition pattern of the extensive usage of a particular morpheme. As was illustrated by the example error utterances, Korean as a discourse-oriented language utilizes noun suffixes not only to incorporate the grammatical notions such as subject or dative but also to carry a great degree of pragmatic bearing. In other words, correct use of a noun suffix requires the speakers in-depth pragmatic skills such as understanding the listener's perspective and the comprehensive discourse information. This kind of pragmatic perspectives should thus be carefully utilized in setting up experimental designs for collecting more specific normative data and also in devising diagnostic tools and treatment materials for language-impaired children at risk.

The data from the present study add to existing findings in pointing out that Korean children acquire many features of morphology at a young age. Yet the acquisition of Korean morphology does not appear to be as rapid as that seen in other agglutinating

languages, such as Turkish (Aksu-Koc & Slobin, 1985) and Tamil (Ragbhavendra & Leonard, 1989). A plausible explanation for this finding is that, in contrast to the morphemes in these other languages, the Korean morphemes under study: (1) were not all obligatory; (2) included several homophonous forms (notably, [nɪn] occurs in several verbs and one noun morpheme); (3) included certain morphemes that can be reduced to single consonants, rendering them less perceptible, and, possibly, less pronounceable; and (4) involved a high degree of complexity in some paradigm.

It is not clear that the homophony among Korean morphemes always served as the detriment of SS's rate of acquisition. In particular, the earliest continuative constructions acquired by SS contain *-e*. This form bears a physical, positional (verb-final), and pragmatic (request) similarity to the earlier-acquired sentence-ending morpheme *-e!* (IMP). Thus, SS's familiarity with this SE morpheme may have facilitated his acquisition of the continuative morphemes. In this sense, my Korean data mimic the early use of the *V-te V* continuative construction in Japanese described by Clancy (1985).

Perhaps the most interesting finding in the present investigation is SS's early use of the tense morphemes. These morphemes occur in word-medial position, and according to prevailing views on universal operating principles (Slobin, 1973, 1985), their medial position makes them less likely to be perceived and hypothesized by young children than morphemes located at the end or beginning of words. Yet these morphemes were acquired as early as their counterparts in a structurally-similar language, Japanese, even though, in Japanese, they can and often do appear in word- (and sentence-) final position (Clancy, 1985). Such a finding seems especially surprising considering that the earliest tense morpheme acquired by SS, *-ess-*, is not especially transparent: this morpheme has three allomorphs and undergoes a change from /s/ to [t] in certain phonetic contexts.

It seems highly possible that the stress characteristics of Korean contributed to the ease with which SS acquired word-medial morphemes. Unlike 'stress-timed' languages such as English in which syllables in a multisyllable rhythm group can be highly compressed, Korean shows much less compression of syllables in these contexts. For this reason, word-medial syllabic morphemes do not appear to be as phonetically reduced as in some languages, making the child's task of perceiving and hypothesizing these morphemes more manageable.

However, another related result is the intriguing nature of the *-nun-*, *-un-*, *-n-*, word-medial tense morphemes for SE, prenominal, and conjunctive suffixes, which I termed as 'nun' puzzle. Although these three morphemes may carry more transparent acoustic values than the past morpheme *-ess-*, it certainly would be a puzzling task for young Korean children to figure out all the complexities involved in the paradigm. It would be very

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important to investigate the developmental pattern for the total system involving this 'nun' puzzle. Especially, considering the Korean speaking specifically-language-impaired children, who might experience more difficulties with grammatical morphemes carrying rapidly-changing acoustic information, it would be a very impending task to devise a simplified and highlighted version of this paradigm to help them sort out the hidden regularities within the seemingly inconsistent pattern.

In summary, the data from SS's acquisition of Korean morphology provide another illustration of the intricate balance that exists among factors presumed to influence children's language learning. The rich and agglutinating morphology of Korean seemed to promote SS's early start in acquiring the morphological system of the language. Certain aspects of this agglutinating morphology were probably rendered more accessible by the nature of stress in Korean. SS's acquisition of word-medial morphemes, especially, seemed to benefit from the fact that these morphemes preserve its syllabicity even in natural connected speech. On the other hand, if SS's development is representative of Korean children in general, I must conclude that the acquisition of Korean is somewhat more challenging than that of other previously-studied agglutinating languages. I suspect this is because many of the morphemes that the Korean child must learn are in fact optional, and that there is a fair degree of homophony and complexity among these morphemes. Together the findings are encouraging in that they show that despite Korean's own particular characteristics, the acquisition of its morphology can be described by combining those processing factors identified before: rich and agglutinating morphology, syllable-timed language characteristics, morphological paradigms with highly optional, homophonous, and complex features, and heavily discourse-oriented nature of Korean as an underlying language typology.

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Notes

¹Terms like ‘verb/noun suffixes’ or ‘verb/noun morphemes’ would be more appropriate than ‘inflection’ or ‘case markers/particles’ because of the agglutinating nature of Korean morphology.

²The allomorph /jəs/ is attached to the verbs that have *ha-* stem, such as *kongpwuha-* ‘to study.’

³By presenting several interesting and convincing arguments against the INFL or COMP analyses, S. Lee treats *-e* as a dummy morpheme.

⁴They classify these complementizers into 4 types (COMP1 to COMP4). It is my view that among these 4 types only COMP4 and some forms of COMP2 should be categorized into COMP. However, this discussion is beyond the scope of the present study.

⁵Choi (1988a; 1991) identified three different word types as a criterion for acquisition of morphemes.

⁶In the tables and examples, abbreviations will be used to denote the grammatical role served by each suffix. These abbreviations are defined in the Appendix.

Appendix

List of abbreviations used for grammatical roles of morphemes studied

ADJ.PRES	Prenominal Adjective Suffix (Present Tense)	- <i>(u)n.....</i>
COM	Comitative Noun Suffix	- <i>(i)lang</i>
CON/TOP	Contrastive/Topic Noun Suffix	- <i>(n)un</i> or <i>n</i>
CONJ.BAC	Conjunctive Suffix for Setting up the Background ('and/but')	- <i>nuntey</i>
CONJ.CON	Conjunctive Suffix for Conditional	- <i>(u)myen</i>
CONJ.COT	Conjunctive Suffix for Giving Context	- <i>(e)se</i>
CONJ.INT	Conjunctive Suffix for marking Intention	- <i>(u)hyeko</i>
CONJ.INR	Conjunctive Suffix for Interrupted Action	- <i>taka</i>
CONJ.PUR	Conjunctive Suffix for Purpose	- <i>(u)le</i>
CONJ.RSN	Conjunctive Suffix for marking Reason	- <i>(e)se</i>
CONJ.SEQ	Conjunctive Suffix for marking Sequence	- <i>ko</i>
CONT	Continuative Verb Suffix	- <i>e, -ka, -ci, -key</i>
DAT	Dative Noun Suffix	- <i>hanthey, -(ey)key</i>
DEC.AG	Declarative Sentence-Ending Suffix for Seeking Agreement	- <i>cyana</i>
DEC.AS	Declarative Sentence-Ending Suffix for Assimilated Information	- <i>e</i>
DEC.CF	Declarative Sentence-Ending Suffix for Confirmation	- <i>ci</i>
DEC.DS	Declarative Sentence-Ending Suffix for Discovery	- <i>ney</i>
DEC.UN	Declarative Sentence-Ending Suffix for Unassimilated Information	- <i>ta</i>
DIR	Directional Noun Suffix	- <i>ey</i>
DIR.SP	Directional Noun Suffix for Specific Space	- <i>(u)lo</i>
FUT	Future Tense	- <i>keyss-</i>
FUT.INT	Future Tense marking Intention Probability	- <i>(u)l ke(s)-i-</i>
IMP	Imperative Sentence-Ending Suffix	- <i>e!</i>
IMP.PL	Imperative Sentence-Ending Suffix for Plain Style	- <i>ela!</i>
INT	Interrogative Sentence-Ending Suffix	- <i>e?</i>
INT.CF	Interrogative Sentence-Ending Suffix for Confirmation	- <i>ci?</i>
INT.FM	Interrogative Sentence-Ending Suffix for Familiar Style	- <i>eyo?</i>
INT.OP	Interrogative Sentence-Ending Suffix for Asking Opinion	- <i>(u)lka!</i>
INT.RPT	Interrogative Sentence-Ending Suffix for Reportative Speech	- <i>tay?</i>
INTN	Intentional Sentence-Ending Suffix	- <i>(u)lkey</i>
LOC.ST	Locative Noun Suffix for Stative Verbs	- <i>ey</i>
LOC.AC	Locative Noun Suffix for Action Verbs	- <i>(ey)se</i>
LOC.SP	Locative Noun Suffix for Verbs marking Specific Place	- <i>(ey)ta(ka)</i>

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OBJ	Object Noun Suffix	- <i>(l)ul</i>
PAST	Past Tense	- <i>ess-</i>
PAST.DES	Past Tense for Description	- <i>(u)n ke(s)-i-</i>
PL	Plural Noun Suffix	- <i>tul-</i>
PRES	Present Tense for - <i>ta</i> and - <i>tay</i>	- <i>(nu)n-</i>
PRES.DES	Present Tense for Description	- <i>nun ke(s)-i-</i>
PROP	Propositive Sentence-Ending Suffix	- <i>ca</i>
RPT	Reportative Sentence-Ending Suffix	- <i>tay</i>
REL.FUT	Relative Clause Suffix (FUTURE TENSE)	- <i>(u)l</i>
REL.PAST	Relative Clause Suffix (PAST TENSE)	- <i>(u)n</i>
REL.PRES	Relative Clause Suffix (PRESENT TENSE)	- <i>nun</i>
SRCE	Source Noun Suffix	- <i>(ey)se</i>
SUBJ	Subject Noun Suffix	- <i>ka' i</i>
VOC	Vocative Noun Suffix	- <i>(i)ya</i>
VOL	Volitional Sentence-Ending Suffix	- <i>(u)lkay</i>