

Underlying Bases for Reduplicated and Sound Symbolic Words in Korean: The so-called emphatic suffixation revisited*

Hyung-Soo Kim
(Jeonju University)

Kim, Hyung-Soo. 2006. Underlying Bases for Reduplicated and Sound Symbolic Words in Korean: The so-called emphatic suffixation revisited. *Korean Journal of Linguistics*, 31-2, 207-232. This paper reanalyzes the so-called emphatic suffixation in Korean, with a focus on the base and suffixal forms used in previous analyses. Jun (1994) analyzes these cases under his rule of Metrical Weight Consistency, but there is no independent evidence for the redundant base-final /l/ in his underlying structure of *talkak* < **talkal-lak* "rattling". In this paper, a new morphological analysis is provided by investigating 1) the stem-suffix correlations stipulated by Jun and 2) the patterns of affixation and alternation in ideophones such as *talkak*, *talkak*, and *talkatak*. It is argued that these three near-synonymous ideophones share the same underlying stem **talki-* and the surface variants are a combined result of affixation and three independent phonological rules: /i/-truncation (*talkak* < **talki-ak*), /t/-to-/l/ lenition (*talkak* < **talki-tak*) and dissimilation of KCVK# → CVK# (*talkatak* < **talkak-tak*). Some comments on recent Optimality-Theoretic analyses and their weaknesses are made as well as a remark on the ramifications of the analysis. (Jeonju University)

Key words: abstract underlying representation, partial reduplication, emphatic suffixation, sound symbolism, Korean phonology and morphology.

1. Introduction

Reduplication in sound symbolic words has been one of the most recurrent topics in Korean phonology and morphology. From the early years of traditional grammar and phonemics to the recent works of Optimality Theory (OT hereafter), it has captured the

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attention and imagination of many phonologists and morphologists, let alone the grammarians of various theoretical persuasions, both traditional and generative.¹ While the aims in each of these camps may be different, all were without doubt drawn by the peculiar behavior of sound symbolic words so prevalent in Korean. This paper adds to the list of previous works by examining an issue that has been left virtually untouched until now: how to establish the underlying base and suffixal forms for the reduplicated and sound symbolic words of Korean. One may initially regard this as a nonissue, thinking that the problem has already been resolved by the debate in the seventies on abstract underlying representation between Kiparsky (1968) and Hyman (1970). But as Hyman has noted in his textbook (Hyman 1975), it is still an unresolved issue in phonology that deserves reexamination, for, as will be illustrated below, the problem is a real one in the analysis of the so-called emphatic suffixation in Korean.²

Consider, for example, the sound symbolic data in (1), which fall into three classes according to method of partial extension:

(1) Sound symbolic words extended by reduplication or suffixation

a. Partial suffixing reduplication

<u>base</u>	<u>reduplicated</u>	
culuk	cululuk	"sound of rain falling"
t'alij	t'alilij	"ringing"
asak	asasak	"crisp"
otok	ototok	"with a crunching sound"

b. Extension with the suffixes of $-tVK^3$

<u>base</u>	<u>extended by the suffix $-tVK$</u>	
talkak	talkatak	"rattling"

1 Most of the previous works are summarized in C-W. Kim (1998) and H-S. Kim (2003, 2005) except the recent ones, which appear in the reference of this paper.

2 Cf. Hyman (1975:90): "Just how abstract phonology is remains a question that has yet to be answered in a manner satisfactory to all". Note also H-S. Kim (2002) for a similar attitude towards the abstractness issue.

3 The symbol $-tVK$ abbreviates the four suffixes that begin with /t/ and end with a velar consonant /k/ or /ŋ/: $-tak$, $-tək$, $-taŋ$, and $-təŋ$. The capital 'K' thus stands for velar consonants while the quality of the suffixal vowel (i.e. 'V') depends on the rules of vowel harmony.

təlkək	təlkətək	"rattling"
calphək	calphatak	"squelching"
cəlpħək	cəlpħətək	"squelching"
p'ikək	p'ikətək	"creaking"
pəlləŋ	pəllətəŋ	"wide on one's back"

c. Extension with the suffixes other than *-tVK*

base	<u>extended by CVK-suffixation</u>	
talkil	talkilak	"rattling"
təlkil	təlkilək	"rattling"
k'omcil	k'omcilak	"budging"
k'umul	k'umulək	"moving slowly"
ulkis	ulkilak	"colorful"
mancis	mancicak	"fumbling"
məŋkic	məŋkicak	"moping around"
məmus	məmucək	"hesitating"

(1a) represents the 'regular' partial suffixing reduplication in Korean, which repeats the final *CVC*, or depending on your point of view, *CV* (with the final velar consonant extrametrical), of the base on the left.⁴ (1b) and (1c), on the other hand, are examples of what has often been referred to under such names as emphatic suffixation (Ahn 2002), irregular reduplication (C-W. Kim 1998) or suffixation of a dummy syllable (Jun 1994). These are generally thought to be formed by attaching various suffixes of the type *-CVK* to the base forms on the left. The reason for making a distinction between (1b) and (1c) is that in (1b) the suffixation involves copying the base-final syllable with its onset always replaced by /t/, while in (1c) there is no indication of similar copying but only simple affixation. We may thus characterize each of the three groups in (1) as examples of partial reduplication (1a), reduplication with fixed segmentism (1b)⁵, and nonreduplicative affixation (1c).

Despite these diverse origins, Jun (1994) has claimed that all of the

4 The details do not concern here other than the fact that we will assume with Jun (1994) that Korean partial suffixing reduplication copies the final heavy syllable of the base. See H-S. Kim (2003) for the arguments leading to this position and the details concerning the reduplicative template in Korean.

5 Cf. Alderete et al. (1999). See below for further details regarding this term.

above examples fall under the scope of what he terms Metrical Weight Consistency (MWC hereafter):

(2) Metrical Weight Consistency (Jun 1994:79)

The number of feet in the output of partial extension must be identical to that in the input.

Simply assuming the forms on the left as underlying bases, Jun argues that in all of the examples in (1), the final consonant of the base drops in the partially extended forms on the right to comply with his rule of MWC:

(3)				
	[culuk] _ϕ	[tal] _ϕ [kak] _ϕ	[tal] _ϕ [kil] _ϕ	
	[culuk] _ϕ -luk	"	"	reduplication
	"	[tal] _ϕ [kak] _ϕ -tak	[tal] _ϕ [kil] _ϕ -lak	suffixation
	[cululuk] _ϕ	[tal] _ϕ [katak] _ϕ	[tal] _ϕ [kilak] _ϕ	MWC

Jun has maintained that a heavy syllable with precedent light syllables counts as one foot regardless of their number. He argues that the final consonant of the base is not 'extrametrical' as MacCarthy and Prince (1986; M&P hereafter) have proposed but drops in the partial extensions to keep the same number of feet between the inputs and the outputs. His motivation for treating the three groups of ideophones together, even in the face of their different origin, is clear: the extended forms carry the same denotative meaning, so it would be ideal if they receive a uniform analysis under the principle of MWC, as in (3).

A number of problems with Jun's MWC have been discussed in previous analyses, which we will not go over here.⁶ What interests us are the underlying base and suffix forms that Jun posits to arrive at his rule. For example, Jun simply derives *talkak* from **talkil-lak* by MWC, without explaining how he established his underlying base **talkil-* and the suffix **-lak*. Raising this question is legitimate for several reasons; First, **talkil* is not an independent entry recognized in dictionaries.⁷ This contrasts with such pairs as *talkak/talkatak* and

⁶ See C-W. Kim (1998) and H-S. Kim (2003) for details of these problems.

⁷ For the Korean sound symbolic data, I have mainly relied on *Pyojun Gwuge Dae Sajeon*

k'omcil/k'omcilak, where the presumed bases, *talkak* and *k'omcil*, do occur as independent sound symbolic stems, either as an adverb (*talkak*) or as an independent stem in fully reduplicated form (*k'omcil'omcil*). But **talkəl* occurs in neither capacity, i.e. neither ¢talkəl , nor ¢talkəltalkəl .⁸

Second, consider (4) below, which are forms extracted from (1b) and (1c):

(4)	<u>base</u>	<u>extended form</u>	
	talkak	talkatak	"rattling"
	təlkək	təlkətək	"rattling"
	talkil	talkilak	"rattling"
	təlkil	təlkilək	"rattling"

Vowel harmony accounts for the vocalic variations in the first two and the last two rows of examples. Note that the same string of segments, /talk/ or its harmonic counterpart, /təlk/, appears in every sound symbolic form, suggesting that it is this string, or its modification, that makes up the sound symbolic base for 'rattle' in Korean. But Jun has simply assumed the forms on the left as underlying bases for the extended forms on the right, ignoring the fact that sound symbolic data sets such as *talkak/talkəlak/talkatak* share a common underlying stem.

Finally, note examples such as *k'omcil/k'omcilak* in (1c), where *k'omcil* is an independent stem, indicating that the suffix here is not *-lak* as has been assumed by Jun but *-ak* as has been suggested in some of the previous analyses.⁹

It is clear from the foregoing discussion that determining the correct underlying base and suffix forms is not a simple matter, especially for the examples in (1c); it is indeed a complex task requiring a careful examination of morphological and etymological patterns of sound symbolism in Korean. In the following section, we will therefore examine closely Jun's (1994) stem-suffix segment correlations, which have been the backbone of his MWC analysis. We will evaluate the viability of his claims, with a focus on his underlying base and suffix

(The Standard Unabridged Dictionary of Korean) published by The National Institute of Korean Language Research.

⁸ The symbol ¢ indicates an incorrect form: 'c' for 'correct' and '/' for 'not'.

⁹ Cf. J-H. Kim (1997) and C-W. Kim (1998).

forms, offering alternative proposals where necessary. This is then followed in section three by presentation of recent OT analyses in which two opposing approaches to emphatic suffixation are compared and reevaluated with the insights of section two. We note especially that the two approaches arise in part as a result of their different views on how the emphatic suffixation examples should be analyzed morphologically. This then is one ramification of the paper highlighted in the concluding remark, the importance of setting up a correct underlying representation in phonological analysis.

2. Emphatic suffixation and Jun's (1994) stem-suffix correlations

Relying on You (1985), Jun (1994) argues that there exist two interesting correspondence relations between the base and the extended sound symbolic words of (1b) and (1c). The first of these relations holds between the final consonants of the stem and the CVC-suffix attached to it and is thus called 'coda-coda correlation.' According to Jun's survey, 'suffixes which are attached to stems with a velar consonant in their final coda always take the identical velar coda':

(5) Coda-coda correlation (Jun 1994:73)

<u>stem-final codas</u>	<u>suffix</u>
/k/	/tVk/
/ŋ/	/tVŋ/

Even though Jun has obviously formulated this coda-coda correlation for the *-tVK* examples in (1b), the same relation also holds in partially reduplicated examples in (1a) above. The reason is that the coda-coda correlation is in fact one of the conditions on partial reduplication, (6a) below.

- (6) Conditions on partial suffixing reduplication in Korean (cf. H-S. Kim 2005)¹⁰
- a. The base, if it is to end in a consonant, should end in one of

¹⁰ While the first condition is observed across all bases including monosyllabic ones, e. g. *p'aŋ* → *p'apaŋ* "with a bang", the last two conditions apply to disyllabic bases only.

- the velar consonants /k/ or /ŋ/.
- b. The reduplicating syllable of the base should have one of the coronal consonants /t, c, s, l/ as its onset.
 - c. All of the syllables preceding the reduplicating syllable must be light.

This partially justifies why the examples of the *-tVK* extensions in (1b) are considered by some analysts such as Chung (1999) and Cho (1999) to be a special type of partial reduplication, as examples of what Alderete et al. (1999) have termed 'reduplication with fixed segmentism'.¹¹

The same correlation (5) above, however, does not hold for examples in (1c) where there is no match between the codas of the base and the suffix, e. g. *talkəl/talkəlak*, *mancis/mancicak*, etc. This is why a distinction is often made (by analysts such as Cho 1999) between the groups of (1b) and (1c): (1b) at least has the resemblance of partial reduplication while (1c) is simply nonreduplicative affixation. But Jun (1994), despite these differences, has insisted on including these examples with those of (1a) and (1b), under the purview of his MWC. And this inclusion has continued in the OT analyses of Ahn (2000, 2002) and H-Y. Lee (2003) with constraints such as *Ident(foot)* and *Dep-OO(foot)*. We see then one of the differences between the two opposing groups of OT analyses, to be discussed in the next section: One group, which includes Chung (1999) and Cho (1999), sees (1b) in the same domain with (1a), as examples of partial reduplication, while the other group, which includes Ahn (2000, 2002) and Lee (2003), sees (1b) in the same domain with (1c) and (1a), all as examples of partial extension governed by MWC.

Jun's second correspondence relation refers to the correlation between the coda of the stem and the onset of its suffix and is thus called coda-onset correlation:

(7) Coda-onset correlation (Jun 1994:74)

<u>stem-final coda</u>	<u>onset of the suffix</u>
/k/ or /ŋ/	/t/
/l/	/l/
/s/ or /c/	/c/

¹¹ See Chung (1999), Cho (1999), and H-S. Kim (2005) who, unlike the two preceding analysts, argues that the type of the fixed segment is morphological rather than phonological.

Unlike his first correlation whose observance is explained as part of the condition on partial reduplication in Korean, it is difficult to explain why a correspondence relation (7) should hold in Korean sound symbolic words. Jun (1994:74) has also expressed puzzlement over the above correlations:

"The segment correlations ... are rather curious. I have no answer to the question of why the suffixation processes produce these special segment correlations. However, if the same segment correlations exist across all Korean onomatopoeic and mimetic words, the curious pattern would be very regular, although still unexplained."

His attempt to generalize the correlations to all Korean ideophones has, however, focused only on words with /t, l, c/ as the onset, excluding the examples with /p, m, s, k/ in the onset position. It is thus not extensive enough to be a generalization representative of all Korean ideophones.¹²

If the coda-coda correlation suggests that examples such as (1a) are really 'reduplicative', the coda-onset correlation between /k/ or /ŋ/ and /t/ (the first row of (7)) suggests that examples in (1b) are of fixed segmentism type, for it says that whenever there is a base with a final velar coda, which constitutes part of the general conditions on partial suffixing reduplication in Korean, the onset of the extended suffix is fixed to /t/, as in *talkak/talkatak*, *p'ikək/p'ikətək*, *pəlləŋ/pəllətəŋ*, etc.

Our main concern, however, is with the remaining two rows of the correlation, because their reanalysis clearly shows how a phonological

¹² Note that in spite of his claim for its 'regularity', the coda-onset correlation (7) has many exceptions, as can be verified by Jun's (1994:73) base-suffix segment correlations:

word-final syllable	stem-final coda						total
	m	s	c	n	l	k	
tVk				4		37	41
tVŋ							19
IVk						41	41
IVŋ						38	38
cVk	3	10	11		8	6	38
cVŋ			2				2

In this table, not only /ŋ/ and /k/ but also /n/ in stem-final position correspond to the onset /t/, and nearly all codas except /n/ and /ŋ/ correspond to the onset /c/.

analysis crucially depends on one's postulation of the underlying base and suffix, resulting in a completely different analysis and theoretical position. Let us then consider these correlations one by one in separate subsections, focusing our attention on the underlying base forms and the attendant analysis.

2.1. The correlation of stem-final /l/ and the onset /l/ of the suffix

This correspondence obviously refers to examples such as *talklak* in (1c), which Jun has analyzed as being based on *talkl*, from underlying **talki l-lak*. The base final consonant drops by his rule of 'Metrical Weight Consistency': $[tal]_{\phi}[kil]_{\phi} \rightarrow [tal]_{\phi}[kil]_{\phi}\text{-lak}$ (by partial extension) $\rightarrow [tal]_{\phi}[ki lak]_{\phi}$ (by MWC). However, positing this underlying base does not explain its relation to sound symbolic words such as *talkak*, *talkatak*, which are also related to each other by his MWC rule: $[talkak]_{\phi} \rightarrow [talkak]_{\phi}\text{-tak}$ (by partial extension) $\rightarrow [talkatak]_{\phi}$ (by MWC). That the bases for these sound symbolic words are related to one another is suggested by the pattern of their occurrence in the following examples:

(8) Sound symbolic words with the suffixes of *-lVK* and *-tVK*

base	<i>-lVK</i> -affixation	<i>-tVK</i> -affixation	
talkak	talki-lak	talka-tak	"rattling"
təlkək	təlki-lək	təlkə-tək	"rattling"
talkaŋ	talki-laŋ	talka-taŋ	"rattling"
təlkəŋ	təlki-ləŋ	təlkə-təŋ	"rattling"
tɛŋkaŋ	tɛŋki-laŋ	tɛŋka-taŋ	"ringing"
tɛŋkəŋ	tɛŋki-ləŋ	tɛŋkə-təŋ	"ringing"
calkak	calki-lak	calka-tak	"with a cling"
calkaŋ	calki-laŋ	calka-taŋ	"with a cling"
wɛŋgaŋ	wɛŋgi-laŋ	wɛŋga-taŋ	"with a jangle"
cɛŋkaŋ	cɛŋki-laŋ	cɛŋka-taŋ	"with a clank"

Jun has simply assumed separate underlying bases for the second and third column examples, with the liquid-final base in the former (i.e. **talki l-lak*, etc.) but with the velar-final base in the latter (i.e. **talkak-tak*, **talkaŋ-taŋ*, etc.). But the pattern of affixation in these examples reveals that the examples in each row are etymologically related and thus

should come from the same underlying stem.

Three facts of Korean, two phonological and one morphological, are worth noting in this connection. First and foremost is the fact that the suffix *-lVK* in, e.g. *talkilak* "rattling" seems to be in regular alternation with the suffix *-tVK* in, e.g. *talkatak* "rattling", for, 1) the two ideophones basically have the same meaning, except the subtle differences in nuance and 2) there is regular alternation in Korean between /t/ and /l/ as exemplified by the so-called /t/-irregular predicates:

(9) /t/-irregular predicates in Korean¹³

<u>Infinitive</u>	<u>Continuative</u>	
tɪt-ta	tɪl-ə	"hear"
kət-ta	kəl-ə	"walk"

In these examples, /t/ occurs in nonintervocalic 'elsewhere' position but /l/ in intervocalic position. Since the bases of the forms extended by *-tVK* suffix always end in a velar consonant (i.e. *talkatak* < **talkak+tak*), while those extended by *-lVK* suffix occur with a stem that ends in a vowel (i.e. *talkilak*), this gives an argument to derive the *-lVK* suffix from the corresponding *-tVK* suffix by a rule such as $t \rightarrow l / V_V$ (i.e. *talkilak* < **talkitak*) as in the following derivation:

(10)

talki-tak	talkak-tak	
talkilak	"	$t \rightarrow l / V_V$
"	talkatak	dissimilation: $KCVK\# \rightarrow CVK\#$ ¹⁴

13 This class of verbs contrast with the /t/-'regular' predicates such as, e.g. Inf. *t'it-ta*, Cont. *t'it-ə* "tear apart" where no alternation of /t/ occurs. Note that the change of intervocalic /t/ to /l/ is still a plausible rule despite these exceptions because it is observed in many languages as part of the universal lenition routine. It is just that the precise underlying condition for this rule has not been discovered yet in Korean. An easy way out, of course, would be to write a synchronic rule such as $l \rightarrow t / _C$, but I have refrained from doing that, in the hope that by correctly defining the process as lenition someone will eventually suggest a revealing explanation of the phenomenon.

14 As mentioned above, this elision of the base-final consonant in partial reduplication has been the topic of some controversy in recent OT analyses, with one group assuming extrametricality of the base-final consonant and CV-infixing internal reduplication, i.e. *talka-ta-k* but the other, copying of the final heavy syllable of the base and elision of its final coda by MWC, i.e. $[tal]_{\phi}[kak]_{\phi} \rightarrow [tal]_{\phi}[kak]_{\phi-tak}$ (by partial extension) $\rightarrow [tal]_{\phi}[katak]_{\phi}$ (by MWC). Here, I give a third alternative in which the final consonant of the base drops

Once we realize that *talkatak* and *talkɨlak* share the same underlying suffix, the next question, then, is how the stems of *talkak-* and *talkɨ-* are related. To answer this question, we refer to another well-known phonological rule in Korean, the elision of /i/, which occurs for vowels in hiatus:

(11) /i/-truncation in Korean:

<u>Infinitive</u>	<u>Continuative</u>	
s'i-ta	s'ə <*s'i-ə	"write"
thi-ta	thə <*thi-ə	"open"

Also noteworthy in relation to this rule is the fact that *-ak/ək* and *-aŋ/əŋ* are diminutive suffixes often observed in sound symbolic words, as illustrated in the following examples from Martin (1992:416-20):

(12) Examples of *-VK* as diminutive suffix

<u>base</u>	<u>diminutive</u>	
k'omcil	k'omcil-ak	"budging"
k'umul	k'umul-ək	"moving sluggishly"
kantil	kantil-aŋ	"wobbling, swaying"
p'alk-ah-ta	p'alk-aŋ	"red"

These two facts combined suggest that the base forms in the first column of (8), e.g. *talkak*, are really derivatives from an underlying stem with a minimal vowel /i/ and a diminutive suffix *-VK*: **talkɨ-ak* > *talkak*, etc. This underlying stem, we can see, occurs in the second column of (8) with the suffix *-lVK*, originally from **-tVK* by a rule changing intervocalic /t/ to /l/ as we have established earlier: **talkɨ-tak* > *talkɨ-lak*, etc. The examples in the third column, e.g. *talkatak*, on the other hand, are certainly extensions on the bases in the first column by the suffix *-tVK*, as every previous analysis has assumed. The following derivation illustrates the underlying morphological structure of these sound symbolic words and the rules involved:

by a dissimilation rule. See H-S. Kim (2003) and the references therein for critique of previous analyses and detailed arguments for this rule.

(13) Derivation of *talkak*, *talkəlak*, and *talkatak*:

talki-ak	talki-tak	talkak-tak	
talkak	"	"	/i/-truncation: i → Ø/_+V
"	talkilak	"	lenition: t → l/V_V
"	"	talkatak	dissimilation: KCVK# → CVK#

Viewed in this way, it is clear that the forms in the same rows of (8) are related to one another, sharing the same underlying stem, e.g. **talki-*, etc. This is in contrast to Jun's analysis where e.g. *talkəl-*, a form unattested as a sound symbolic word in Korean, is considered to be the base of *talki-lak* <**talkəl-lak* while offering no further explanation of the relationship between the two stipulated bases of **talkəl* and *talkak*.

A slightly different pattern is observed in the following examples:

(14)

<u>-VK</u>	<u>-l¹⁵</u>	<u>-lVK</u>	
k'omcak	k'omcil	k'omcilak	"budging"
k'εcak	k'εcil	k'εcilak	"listless"
achaŋ	achil	achilaŋ	"sauntering"
kantak	kantil	kantilak	"dangling"
k'ətək	k'ətīl	k'ətīlək	"swaggering"

These examples are like those in (8) in that they have the same underlying stem with the final vowel /i/. They differ, however, in several respects: 1) The minimal vowel, unless it drops in hiatus with a suffixal vowel as in the first column (i.e. **k'omci-ak* > *k'omcak*), is fronted when it is preceded by a palatal consonant such as /c, ch/, as in e.g. *k'omcil* <**k'omci-l*, *achilaŋ* <**achi-laŋ*, etc¹⁶; 2) The sound symbolic words in the second column (with the suffix -l) occur independently (unlike the presumed bases such as, e.g. **talkəl-*, etc. which are not independent words), thus giving an argument to analyze the third column examples, e.g. *k'omcilak*, as deriving from this base by attaching the diminutive suffix -VK, i.e. **k'omci-l-ak*; 3) Even though the examples in the first column all end in a velar consonant /k/ or /ŋ/,

15 For a detailed discussion of this suffix, consult P-K. Lee (1979:115), Song (1992:197) and H-H. Lee (1987:139).

16 Note the same palatalization of /i/ posited by K-O. Kim (1977) for Korean ideophones.

and thus meet the first condition on partial reduplication in (6), no partial reduplication or extension by the suffix *-tVK* has occurred, i.e. no ʕk'ɛcacak , ʕk'omcatak , etc.¹⁷

These observations as a whole suggest that Jun's assumption of coda-onset correlation in such examples as *talkɨ-lak* < **talkɨ-lak*, *k'omci-lak* < **k'omcil-lak* cannot be maintained. The problem is that he has two liquid consonants in the underlying representation where one would have sufficed. If we eliminate the first liquid in the stem-final position, then we would have forms such as **talkɨ-lak*, **k'omci-lak*, etc. in the underlying representation, which necessitate no further rule of MWC. Similarly, if we eliminate the second, suffix-initial liquid /l/, then we would have underlying forms such as **k'omcil-ak*, etc., justifying the diminutive suffix *-VK* and again eliminating the need for the MWC rule. This redundant representation of liquid consonant in the underlying morphological structure, then, has justified Jun's /l/-to-/l/ coda-onset correlation, and like other redundancies in phonological analysis, it should not be represented as part of the underlying structure.

2.2. The correlation of stem-final /s/ or /c/ and the onset /c/ of the suffix

The examples that belong to this correlation are in the lower half of (1c), which are repeated in an expanded presentation here:

(15)

<u>base</u>	<u>extended by</u>	<u>CVK-suffixation</u>
ulkɨs	ulkɨlak	"colorful"
mancɨs	mancɨcak	"fumbling"
?mɔŋkɨc	mɔŋkɨcak	"moping around"
məmɨs	məmɨcək	"hesitating"

17 This is because reduplication and suffixation of *-tVK*, both of which are morphological processes, have not occurred to these examples yet. Note that bases such as *k'ɛcak* meet all the conditions on partial suffixing reduplication in (6) while bases such as *k'omcak* meet only the first condition. This is why we expect partial reduplication for the former (cf. *culuk/cululuk*) but *-tVK* suffixation for the latter (cf. *talkak/talkatak*). Note also that some of the bases in (1b), e.g. *p'ikək*, lack the form with the *-tVK* suffix, i.e. no ʕp'ikɨlak , etc. because unlike *k'omcak* and *talkak*, they do not contain the suffix *-VK*, thus no underlying bases of the type ʕp'ikɨ , etc. For further explanation of this and other peculiarities regarding the bases in (1b) and (1c), consult H-S. Kim (2005).

kəchis	kəchicək	"hampering"
k'upus	k'upucəŋ	"rather bent"
mik'in	mik'itəŋ	"slippery"

These examples are curious because the presumed bases in the first column all have final /s/ or /c/ but the onsets of the presumed suffixes all show /c/ (except the first and last ones which will be explained in section 2.3). As long as the base-final consonant is /c/ as in the example *məŋkic*, one would see no further problem because this would actually support the claim that *məŋkicək* is simply an extended form from the same base by attaching the diminutive suffix -VK, and the redundant correlation between the stem-final /c/ and the onset /c/ of the suffix in Jun's underlying representation, e.g. **məŋkic-cək* > *məŋkicək* is easily explained. But the problem is that the base-final consonant is not always the same as the suffix-initial consonant because in most of the above examples, there appears to be an alternation between /s/ and /c/.

As in the preceding section, there are also some matters to be cleared up before we get into the actual analysis. First, as the question mark in front of it indicates, the presumed base *məŋkic* is not a form that can be found in dictionaries. The dictionaries I have consulted all give instead *məŋkɨs* with the base-final /s/ as in the other examples. So the correspondence between the stem-final consonant and the onset of the suffix, if it ever exists, is really between /s/ and /c/.¹⁸

Second, even this revision of the correlatives does not tell the whole story of the correlation because the alternation here is not really between /s/ and /c/ but between [t] and /c/, for all of the above /s/-final bases are pronounced as [t] in word-final position, due to the well-known neutralization rule in Korean. Interesting in this regard is the fact that not only /s/ but also /c/ neutralizes to [t] in word final and pre-consonantal position in Korean, as the following examples illustrate:

18 I have found one example in the dictionary with the base-final /c/, *əkic/əkicək* "walking listlessly", which shows that the suffix here is -VK, despite the possibility of assuming *-CVK suffixation in such examples as *mancicək* (cf. *manci-ta* "touch").

(16) Coda neutralization in Korean:

___#	___C (-kwa "and")	___V (nominative)
nas[nat]	nas-kwa[natkwa]	nas-i[naʃi] "sickle"
nac[nac]	nac-kwa[natkwa]	nac-i[naʃɨ] "day"

This strongly suggests that there is really no correspondence that could be properly called coda-onset correlation in the above examples of (15) because it is also simple affixation of the diminutive suffix that has occurred in **mancic-ak > mancicak*, the only difference here being that neutralization of word-final /c/ to [t] has occurred in the base form: **mancic > manci[t]* but *mancic-ak*.

Whence arises, then, the orthographic 's' in *mancis*? To answer this question, we may consider the etymological and orthographic history of the modern Korean word *soŋkos* [soŋgot] "gimlet", which began its life as a compound of *sol-* "narrow, thin" and *koc* "wimble," appearing in the fifteenth century Korean as *solhōc* ~ *solhōs* "gimlet" with the regular weakening of /k/ to [h] after the liquid.¹⁹ What is interesting for our purpose is that the history of this word reveals the same orthographic alternation of 'c' and 's' in its word final position. From *Hunminčengum*, the 15th century document proclaiming the ingenious invention of the Korean alphabet, we know that only eight consonants could appear in the syllable final position of Middle Korean (MK). These were /k, ŋ, t, n, p, m, s, l/.²⁰ We note that this number is one more than what obtains in the syllable coda position of modern Korean, in which only seven can appear. The one consonant missing in modern Korean is, interestingly enough, /s/. This means that MK had a neutralization rule slightly different from that of modern Korean. The main difference was that MK /c/ and /ch/ were neutralized to /s/, and no further neutralization to /t/ had occurred. The orthographic variation between 'c' and 's' in MK *solhōc* ~ *solhōs* then reflects this MK neutralization.

As we pass into the 16th century, however, the form with the modern orthography, *soŋkos*, begins to emerge, which is traditionally explained

19 The etymological information given here is from Hong (2004). See also the etymological dictionaries of Yu (1971) and M-S. Kim (1997).

20 See Ledyard (1998) for an English version of *Hunminčengum*. It is remarkable that the document recognizes the possible reuse of initial consonants in the syllable final position and yet claims that 'it will suffice to use only these eight letters for the terminal phonemes.' See Ledyard (1998:306) and K-M. Lee (1980:70) for further details.

as arising from the same compound but with insertion of the prenominal /n/:

- (17)
- | | | |
|-----------|-------|----------------------|
| sol-n-kos | | |
| sonkos | l --> | Ø/___n ²¹ |
| soŋkos | | assimilation |

Furthermore, from the 17th century, we begin to have orthographic *soŋkot*, along with *soŋkos* and *sol.os*,²² indicating that it is around this time that the modern neutralization of /s/ to [t] has begun to occur. Thus the change of coda /c/ in the development of *soŋko[t]* parallels the development of the same coda in *manci[t]*:

- (18)
- | | | | |
|--------|--------|----------|---------------------------------|
| soŋkoc | mancic | mancicak | |
| soŋkos | mancis | " | MK neutralization of /c/ to /s/ |
| soŋkot | mancit | " | NK neutralization of /s/ to [t] |

The 's' in *soŋkos* and *mancis* is then the orthographic remains of the old MK neutralization rule.

2.3. Explanation of *ulkiś/ulkiłak* and *mik'ŋ/mik'ŋ*

Now we come to an explanation of these two pairs of sound symbolic words, which at first glance may appear to support Jun's rule of MWC, for, a stem-final consonant indeed seems to disappear in a suffixally extended form, i.e. **ulkiś-lak* > *ulkiłak* and **mik'ŋ-təŋ* > *mik'ŋ*. These examples, however, receive alternative explanations in this section.

Two peculiarities stand out among these examples regarding Jun's correlation rules. As we recall, according to the coda-coda correlation,

21 Recall *sonamu* < **sol-namu* "pine tree" discussed above. This is part of the rule that drops /l/ before all coronal consonants in Korean, e.g. *mitaci* < **mil-taci* "sliding door" (cf. *mil-ta* "push", *tat-ta* "close"; note the palatalization in *taci* < **tat-i*).

22 The dot here indicates a break in the syllabary of MK orthography, which in turn suggests a latent syllable initial consonant [ŋ] for which MK had no symbol of its own. Without this syllable break, the preceding liquid would have been syllabified with the vowel in the next syllable, as is the case in many languages.

the suffix /tVŋ/ is attached to a stem whose coda is also the identical velar consonant /ŋ/. But this correlation rule has been violated in the pair *mik'ɨn/mik'ɨtəŋ*. Similarly, the coda-onset correlation stipulates that the onset of the suffix is /l/ when the coda of the stem is also /l/. But this rule is violated in the pair *ulkɨs/ulkɨlak*. Thus one should ask why these examples are as they are, unlike the other examples in (15), which all seem to follow Jun's correlation patterns.

Another point that we should note is that the rule of MWC, which supposedly drops the stem-final /n/ in examples such as *mik'ɨtəŋ* < **mik'ɨn-təŋ* does not work in the following examples:

(19) Exceptions to MWC

base	extended by -tVK suffix	
sokon	sokon-tak	"whispering"
sukun	sukun-tək	"whispering"
tokin	tokin-tak	"palpitating"

This indicates that not only the MWC rule presumed to occur in the pair *mik'ɨn/mik'ɨtəŋ* is incorrect but also the base itself has been wrongly posited. An obvious alternative base that comes to mind is *mik'ɨl-* 'slippery', whose stem-final consonant can drop, not by MWC but by the well-known rule of liquid elision before coronal consonants, as we have seen in the above derivation of *soŋgos* from **sol-n-koc* in (17). So **mik'ɨl-təŋ* > *mik'ɨtəŋ* by the same rule of liquid elision.

Under this analysis, the underlying stem meaning 'slippery' is **mik'ɨ* appearing with the -n suffix in *mik'ɨn-* but with the -l suffix in *mik'ɨl-*. According to Martin (1962, 1992), the nasal suffix denotes 'lightness' and occurs in examples such as *kapun-* 'light, nimble',²³ while the liquid suffix denotes 'smoothness', e.g. *k'omcil* < **k'omcɨl* (cf. *k'omcak* < **k'omcɨ* -ak). Since /n/ does not drop before /t/ in Korean, there is no reason to assume **mik'ɨn* as the underlying base, while there is a good reason, in the form of an independent phonological rule dropping /l/ before coronal consonants, to believe in the underlying representation **mik'ɨl-təŋ*.

Similarly, for the *ulkɨs/ulkɨlak* pair we could assume **ulkɨ* as the bare stem, with the suffix -s in *ulkɨs* but with the suffix -lVK in *ulkɨlak*. Martin (1962, 181) says this -s suffix denotes 'fineness' in sound symbolic

23 The stem without the -n suffixation occurs in e.g. *kapyəp-ta* 'light'.

words, e.g. *kapus* "rather light" (cf. *kapun* "light" above with the *-n* suffix). Since there is no coda-coda correspondence nor coda-onset correspondence in this pair, we cannot relate the two sound symbolic words in any phonologically meaningful way, despite the claim made by the MWC rule that the base-final consonant of *ulkís* drops in *ulkí-lak* to keep the same number of metrical feet in the output forms. The obvious semantic unity between these two words is, then, a corollary of the fact that they share the same underlying stem **ulkí-*, albeit with different suffixes.²⁴

Having provided alternative explanations of the above two pairs of sound symbolic words, we should now consider another obvious alternative that an attentive reader may suggest for **mik'ín/mik'ítəŋ*. Instead of **mik'íl-* as the underlying base, why not just say that the bare stem **mik'í-* underlies both forms, with suffixation of *-n* in *mik'ín* but of *-təŋ* in *mik'ítəŋ*, as we have done with the explanation of the pair *ulkís/ulkálak*? Such an analysis could even claim to have an added advantage, for no further rule is required to derive the output form from its input.

This alternative, however, does not work, for two reasons. First, as mentioned earlier the *-tVK* suffix is usually attached to an independent stem; for example, *talkatak* is based on the independent stem *talkak*, as is *pəllətəŋ* on *pəlləŋ*. By independent stem, we mean not only those that can occur as an independent sound symbolic word but also those that form an independent stem under full reduplication. Thus though *mik'íl* or *mik'ín* cannot stand as independent words, their full reduplications, *mik'ílmik'íl* and *mik'ínmik'ín* do occur as independent adverbs, while as a bound stem, the bare stem *mik'í-* cannot stand alone unless supported by a suffix, nor can it undergo full reduplication to **mik'ímik'í*. The nature of the suffixation in *mik'ítəŋ* thus supports its underlying form **mik'íl-təŋ*.

24 But the pair is special in that the base and the extended form appear only in quasi-full reduplications, i.e. *ulkíspulkís* and *ulkálakpulkálak* "colorful". Moreover, as a reviewer has pointed out, the suffix of the latter form seems to occur (as *-lak* after vowels and /l/, but as *-álak* elsewhere) in, e.g. *o-lak ka-lak* "coming and going" and *cuk-álak sal-lak* "on the verge of dying or living". This connective ending is most likely to be a grammaticalization of the suffix **tak/lak*, even though more study is needed to verify this claim. It is interesting that Martin (1992:851-2) also notes the possibility of this suffix being a lenition version of *-tak*, which he cites as a dialectal variant. I would like to thank the reviewer for elucidating this origin of the suffixation in *ulkálak*.

Second, as we have seen above, the suffix *-tVK* is in regular alternation with the suffix *-lVK*, the former attached to a stem with a final consonant but the latter to a stem with a final vowel. So, if the base in *mik'itəŋ* is simply **mik'it*, then we should expect the suffix to appear with the allomorph *-ləŋ*, as in *təlkiləŋ*. The fact that it does not, i.e. no **mik'iləŋ*, also supports the base **mik'il*. Consider the following derivation:

(20)	<i>mik'il-təŋ</i>	<i>təlkəŋ-təŋ</i>	<i>təlki-təŋ</i>	
	"	"	<i>təlki-ləŋ</i>	$t \rightarrow l / V_V$
	<i>mik'itəŋ</i>	"	"	$l \rightarrow \emptyset / _C_{[+coronal]}$
	"	<i>təlkətəŋ</i>	"	$KCVK\# \rightarrow CVK\#$

3. Recent OT analysis of emphatic suffixation: two opposing views

Having provided alternative explanations for Jun's (1994) stem-suffix correlations, we now turn to recent OT analyses of emphatic suffixation. Here, we may divide the analyses into two opposing groups, according to how you analyze the examples in (1b) and (1c). Let us illustrate the two positions by using *culuk/cululuk*, *talkak/talkatak*, and *talkəl/talkəlak* as examples representative of (1a), (1b) and (1c) respectively.

The first group, to which belong, for example Chung (1999) and Cho (1999)²⁵ essentially follows M&P's (1986) analysis of Korean partial reduplication as internal, CV-infixing reduplication and treats (1b) as a special case of (1a), as a case of reduplication with 'phonological' fixed segmentism (cf. Alderete et al. 1999), while (1c) is judged to be a case of simple nonreduplicative affixation of *-lVK* and *-cVK*. Some analysts in this group, e.g. J-H. Kim (1997) and Cho (1999), have assumed the suffixes in (1c) may be just *-VK*. Thus according to this group, the underlying base and suffix forms of the examples in (1) are: *culu-lu-k* < **culu(k)-RED*,²⁶ *talka-ta-k* < **talka(k)-RED*, but *talkəlak* < **talkit-lak* or **talkəl-ak*. This group, however, has failed to recognize that the suffix *-tVK* in *talkatak* is indeed the same suffix that occurs as *-lVK* in *talkəlak*. The

²⁵ Perhaps also J-H. Kim (1997) and S. Kim (1996).

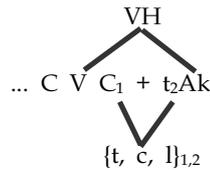
²⁶ The velar 'k' in parenthesis indicates its extrametricality.

discovery of this allomorphic variation is important because it evinces the affixational origin of the *-tVK* suffix, making the reduplicative fixed segmentism in (1b) 'morphological' rather than phonological.

The second group, to which belong Ahn (2000, 2002) and H-Y. Lee (2003), essentially follows Jun's (1994) analysis of CVC-reduplication of the base-final syllable with elision of the stem final C by MWC and argues that the emphatic suffixes in (1b) and (1c) are predictable phonologically, being allomorphs of the same suffix *-tAK*.

Note, for example, that Ahn (2002:15), basing his analysis on Jun's (1994) coda-onset correspondence in (5) above,²⁷ proposes that the emphatic suffixation in (1b) and (1c) 'is a case of consonantal coalescence in which a suffix initial segment is merged with a root-final segment as a single consonant' as illustrated in (21).

(21) Consonant coalescence (Ahn 2002:15)



To determine which consonant emerges as the surface onset Ahn proposes two constraints: 1) *IDENT(Ft)*, which requires 'the foot count of the output be identical to that of the input', and 2) *Faith-root*, which says that 'identity of root segments of the input is to be preserved in the output'. Consider the following tableau for *k'omcilak*:

²⁷ But Ahn cites /n/ (in lieu of /ŋ/) as the stem-final coda corresponding to the suffix onset /t/. This revision is difficult to follow, because 1) we have only 4 tokens of /n/ but 19 tokens of /ŋ/ in Jun's (1994) original survey (cf. footnote no. 12 above) and 2) the revised correlation loses the generalization that it is the velar codas that co-occur with the suffix *-tVK*. We have already mentioned that the /n/ tokens are exceptions to MWC in (19).

(22) Tableau for *k'omcilak*:

/k'omcil ₁ +t ₂ Ak/	VH	IDENT (Ft)	Faith-root (place-lat)	Max	Linearity
a.(k'om)(cil ₁)-(c ₂ ək)	*!	*!			
b.(k'om)(cil ₁)-(l ₂ ak)		*!			
c.(k'om)(cil ₁)-(t ₂ ak)		*!			
d.(k'om)(ci-t ₂ ak)			*!		
e.(k'om)(ci-c ₂ ak)			*!		*
☐ f.(k'om)(ci-l ₂ ak)					*
g.(k'om)(ci-l ₂ ak)				*	

Thus according to Ahn's analysis, the underlying base and suffixal forms of the examples in (1) are: *cululuk* < **culuk-RED*, *talkatak* < **talkak₁-t₂Ak*, and *talkalak* < **talk₁-t₂Ak*.

As is evident from the input forms and the constraints set up, Ahn's analysis continues with Jun's assumptions of MWC and coda-onset correlation. We have argued at length in the preceding section, however, that there is no basis to assume **k'omcil-lak* or **k'omcil-tak* as the input for *k'omcilak*, for 1) the fact that *k'omcil* occurs as an independent base of *k'omcilak* argues for **k'omcil-ak*, rendering the suffixal onset in the input no longer necessary; 2) the fact that *k'omcak*, *k'omcil*, and *k'omcilak* share the same meaning 'budging' shows that the common underlying stem in this triplet is *k'omcɨ*, *k'omcilak* simply being a derivative with the suffix *-lak*, its underlying structure, **k'omcɨ-l-ak*, no longer calling for the base-final /l/. This alternative morphological analysis renders the consonant coalescence (22) no longer necessary, since it posits only one of the two liquids in the input structure.

Similarly, Ahn (2002:16) posits **mancis₁-t₂ak* as the input for *mancicak*, under the assumption that the emphatic suffixes, *-tVK*, *-lVK*, and *-cVK*, are all allomorphs of the same morpheme **-tVK*. But like Jun's analysis, this assumption crucially depends on the morphological analysis that recognizes a redundant consonant in the base or the suffix. The triplet *mancak*, *mancis*, and *mancicak* shows that the common stem here is *mancɨ*, appearing with the respective suffixes of *-ak* and *-s* (from **-c*) in the first two examples, and combination of the two in the last example: *mancɨ-c-ak*. Again, the analysis renders Ahn's consonant coalescence (22) no longer necessary.

Finally, for an argument against subsuming the suffixes of *-lak* and

-cak as allomorphs, compare *k'omcilak* and *mancicak*, where the two putative suffixes occur after the same vowel /i/, nullifying any possibility of complementary distribution. This contrasts with the suffixes in *talkatak* and *talkalak*, where the former occurs after a consonant, i.e. **talkak-tak*, but the latter after a vowel, i.e. **talki-lak*. Such complementarity in distribution makes it plausible that the two suffixes are indeed allomorphs of the same suffix. Where the second group has erred is thus in extending this idea of allomorphy to the presumed suffixes of *-cVK*, in observance of Jun's (1994) redundant coda-onset correlations.²⁸

The alternative analysis proposed in this paper then argues for the following: 1) The examples of (1c) are formed by nonreduplicative affixation, as viewed by the first group; 2) The examples of (1b) are characteristically reduplicative as in (1a), also in agreement with the first group, but they share the same suffix with *-lVK* examples of (1c), indicating that the type of the fixed segment in (1b) is not phonological as claimed by the first group but rather morphological; 3) Some of the underlying stems in (1b) and (1c) end with the vowel /i/, without the redundant final consonant of the base as assumed by second group. Thus according to this alternative proposal, the input forms of (1) are: *culuk* <**culuk-RED*, *talkak*<**talkak-RED-/t/*, *talkalak*<**talki-tak*, and *talkak*<**talki-ak*.

4. Ramifications of the analysis: going back to the basics

Let us close, as a concluding remark, with the following summary of the preceding analysis and its ramifications on phonological theory in general:

1) Three sound symbolic words of the type *talkak*, *talkalak*, and *talkatak* share the same underlying stem **talki* 'rattle', which appears as its original form in *talki-lak* but as an /i/-truncated form in *talkak* and *talkatak*, with the latter derived from the former by affixation of *-tak* and dissimilation of *KCVK#* → *CVK#*: **talkak-tak* > *talkatak*.

²⁸ Despite his elaborate proposals for coda-onset correlations, Jun (1994) has made no remark to the effect that the emphatic suffixes, i.e. *-tVK*, *-lVK* and *-cVK*, are allomorphs of the same morpheme, merely using his survey as a partial support for the MWC rule. It is only in later analyses of Ahn (2002) and H-Y. Lee (2003) that the allomorphy claim is made, even though the latter does not offer any analysis to support his claim.

2) The suffixes in *talka-tak* and *talkɨ-lak* are allomorphs of the same underlying suffix **-tak*, the lenited /l/ appearing in the intervocalic position but the original /t/ in nonintervocalic position: *talkatak* < **talkak-tak* and *talkɨlak* < **talkɨ-tak*.

3) The underlying base for sound symbolic pairs such as *mancis/mancicak* is **mancic-* appearing with the diminutive suffix *-ak* in *mancic-ak* but with word final neutralization of /c/ to [t] in *mancis*[mancit], the orthographic 's' being the remnant of the Middle Korean change of /c/ to /s/ by the same neutralization.

4) A bare stem *ulkɨ* underlies the sound symbolic pair *ulkɨs/ulkɨlak* with affixation of *-s* in the former but of **-tak* in the latter. Similarly, a bare stem *mik'ɨ* underlies the sound symbolic triplet *mik'ɨn/mik'ɨl/mik'ɨtɔŋ*, with the respective affixation of *-n* and *-l* in the former two examples but with affixation of *-tɔŋ* to the expanded stem *mik'ɨl* in the latter form in which /l/ drops in contact with a coronal consonant /t/: *mik'ɨl-tɔŋ* > *mik'ɨtɔŋ*.

5) The combined effect of the above statements is nullification of Jun's (1994) coda-onset correlations, his underlying base and suffix forms, and his rule of Metrical Weight Consistency.

6) An examination of recent Optimality-Theoretic analysis reveals two opposing groups of analysts regarding emphatic suffixation in Korean: Chung (1999) and Cho (1999) view, e.g. *talkatak* as 'reduplication with phonological fixed segmentism' (cf. Alderete et al. 1999), while Ahn (2000, 2002) and H-Y. Lee (2003) assume the emphatic suffixes, *-tVK*, *-lVK*, and *-cVK*, to be allomorphs from the same suffix **-tVK*. A third position is argued for in this paper, in which only the suffixes *-tak* and *-lak* are allomorphic variants (cf. (2) above) and the type of fixed segment in, e.g. *talkatak*, is not 'phonological' but 'morphological', being affixational in origin.

Now, if there is one ramification that emerges from the above summary, it is this: your analysis is as good as the underlying form posited. Since the different base and suffix forms often yield different morphological as well as phonological analysis, it is imperative for the analyst to probe into all avenues to find the correct (sometimes even abstract) input form, and one way to do this is to support it with independent evidence, by referring to the rules that already exist in the language. This has, of course, been well-known since the early days of generative phonology, but somehow the magnitude of its importance

seems to have been lost amid the debates on issues such as linear vs. nonlinear analysis, the learnability problem, and, recently, rule vs. constraint-based approaches to phonology. My aim in this paper has been to remind us all once again that every new analysis has to start from the basics of dividing words into justifiable morphemes, establishing arguments to support the morphological divisions, as well as the rules (or constraints) that relate the input to the output, for a phonological theory can only stand on a firm foundation when such analyses are done correctly.

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