

TONE AND ACCENT IN SOUTH KYENGSANG KOREAN VERBS ¹

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1. Introduction

Korean exhibits regional dialect differences. One of the most striking differences is that between dialects that make distinctive use of voice pitch to distinguish lexical items from those that do not. Dialects in which voice pitch is lexically distinctive have directly inherited this property from Middle Korean, which was a tone language. The *hankul* writing system, the alphabetic Korean writing system created in the 15th especially for Korean by scholars working under the direction of King Sejong, marked tone, making it possible to trace the evolution of the pitch patterns of Middle Korean directly to those of modern dialects.

The tone system of Middle Korean had two level tones and one contour tone, with every syllable of a word bearing one of the contrasting tones high (H), low (L), or rising (R). This system thus looked more like the types of systems found in many African languages than like the systems of neighboring East and Southeast Asian languages, which typically have three or four contrastive pitch levels plus an array of contour tones. Since the time of Middle Korean, all modern tonal dialects have changed their typology to pitch accent systems similar to those of modern Japanese dialects, where the possible tone patterns of lexical items are limited and where a particular tonal configuration, generally a HL drop, is an “accent point” after which lexical tones are neutralized to L within the rest of a phrase.²

There are two primary dialect regions in Korea where pitch remains a distinctive lexical property. These are the North and South Hamkyeng regions that are now part of North Korea and the North and South Kyengsang regions in southeast South Korea. Hamkyeng prosody and its relation to MK prosody was the main theme of Ramsey (1975, 1978).³ As far as I know, there are no other published works on Hamkyeng Korean, and for obvious reasons, it is difficult, if not impossible, for “Westerners” to locate Hamkyeng speakers for further research. There is now, however, a rather extensive literature on Kyengsang Korean prosody. The first modern work on Kyengsang prosody was that of Hō Ung (1954, English translation 1985), who was a native speaker of SKS, but it was not until the late 1980’s that linguistic research on Kyengsang Korean began in earnest. Most of this work has been on North Kyengsang (NKS) Korean (G-R Kim (1988), Chung (1991), Kenstowicz and Sohn (1997), N-J Kim (1997), Jun et al. (2006), among others), though there is at least one dissertation on SKS (Change 2007) and a few published and unpublished papers (J-E Cho et al. (2007), Schuh and Kim (2007), Kim and Jun (2009), among others). The most significant difference

¹ I have been working on Korean pitch accent/tone since about 2006. This work has been supported in part by grants from the UCLA Academic Senate. I am particularly grateful to Jieun Kim, who has been my collaborator in all this work. Jieun is the source of most of the data, and she has verified all the data taken from other sources, most notably Ramsey (1975, 1991).

² Hyman (2009) and elsewhere argues that there is no well-defined “pitch-accent” type. Rather, so-called “pitch-accent” languages are languages with “limited tone systems” that lack some of the typological properties of “canonical” tone languages, which, for example would not have lexical tonal identities wiped out by phrasally determined prosodies. It is not the purpose of this paper to argue for or against proposals concerning prosodic typologies. I will therefore use the terms “tone” and “pitch accent” as seems convenient for the discussion at hand.

³ Ramsey (1978) is the published version of Ramsey (1975). I have the 1975 dissertation but have been unable to obtain the 1978 book. As far as I can tell from citations from the 1978 book, it does not differ in significant ways from the original 1975 version.

between NKS and SKS involves reflexes of MK rising tone, which has become H with a long vowel in NKS, but which, in SKS, are still pronounced as R (with a long vowel) in mono-syllables but as L without distinctive length in longer words.

The purpose of this paper is to describe the prosody of SKS Korean verbal expressions. Because verbal expressions are always morphemically complex, however, I begin in §2 with a discussion of the prosody of the nominal system. Nouns can be cited in isolation as well as in more complex constructions involving affixation or phrasing with other words. Nouns thus allow us to define prosodic classes and observe the prosodic behavior of words in those classes in a variety of contexts. With this information, we can infer prosodic classes of verbs even though verb roots have no citable form that is unaffixed. There are as many analytical frameworks for Kyengsang Korean prosody as there are people who have written about it. The descriptive framework used here for noun prosodic classes is one that was worked out in Schuh and J. Kim (2008) (though J. Kim, in Kim and Jun (2009), has now proposed an alternative in the intonational phonology framework). I do not claim the framework here to be superior analysis to others, but it has the advantage of displaying the unequivocal lexical prosodic classes and the occurring and non-occurring pitch patterns in a direct way.

Once the basic prosodic facts and constraints on surface prosodies have been laid out in section 2, section 3 describes the prosodic classes of SKS verbs with monosyllabic roots, which comprise by far the majority of monomorphemic native roots. Section 4 describes the prosodic properties of affixes that can be used with verbs. Section 5 is an excursus on the history of Korean prosody. Speakers of a language obviously have not had access to the history of their language as they acquired it. The ways speakers think about their language and the ways linguists analyze the language at a particular stage typically have little to do with the historical processes that led the language to be the way it is. Still, when actual history is available, as much of it is in the development from Middle to Modern Korean, it is interesting to know the true explanation for synchronic regularities and anomalies. Section 6 returns to tones of SKS verbs, looking a verb stems longer than one syllable. Section 7 looks at how verbs phrase prosodically with preceding material, including objects, and subjects. Left for future research are the prosodic properties of derived and compound verbs and how those properties correspond to tonal classes of their bases.

2. South Kyengsang Nominal Lexical Tone Classes and Accent

Schuh and Kim (2008) summarize the pitch patterns of modern South Kyengsang Korean nouns as in Table 1 (somewhat revised). The nouns in the table are accompanied by one or more suffixes (particles), which show features of tonal behavior in phrases, and are diagnostic for distinguishing classes in some cases.⁴

⁴ Romanized transcription of Korean in the paper will use the Yale system, which is essentially a symbol-for-symbol transliteration of *hankul*. The main non-obvious features of this transliteration system are as follows: c = IPA [tʃ], y = IPA [j], ng = IPA [ŋ] u = IPA [w], wu = IPA [u], e = IPA [ɔ], both ey and ay = IPA [e] for most speakers of modern Korean, Ch = aspirated consonants, doubled consonants (pp, tt, etc.) represent “tensified” consonants. Neither *hankul* nor Yale mark regular predictable phonological alternations of voiceless vs. voiced stops (“p” = [p ~ b], “c” = [tʃ ~ dʒ], etc.) nor the regular alternation of liquids (“l” = [l ~ ɭ]). In this note on transcription, I have introduced a couple of my own hobby horses. Koreanists, when representing Korean phonetically, generally use IPA [ɔ] for *hankul* ㅇ = Yale “e” and IPA [i] for *hankul* 우 = Yale “u”. The former is misleading if not entirely inaccurate. For all Koreans that I have ever heard, the sound transcribed with Yale “e” is a very back, very round, and quite low vowel. For Yale “u”, I also hear a vowel that is distinctly more back than IPA [i] would represent in my conception. Finally, I believe that [ɾ] is a more accurate phonetic transcription of the rhotic allophone of *hankul* ㄹ = Yale “l” than is the [r] generally used in phonetic transcriptions.

Table 1. Surface tones patterns of South Kyengsang lexical tone classes

	LHL “medial H”	HL “initial H”	HHL “preaccent”	H, LH “atonic”	LHH “rising”
Mono- σ roots	-----	-----	nwún(mán)(ì) eye(only)(nom)	mál(màn)(ì) horse(only)(nom)	sǎy: sày-túl(mán)(ì) bird(pl)(only-nom)
Di-σ roots	-----	méli(kà) head(nom)	mókí(kà) mosquito(nom)	kàcí(kà) eggplant(nom)	sàlám(túl)(ì) person(pl-nom)
Tri-σ roots	mìnáli(kà) parsley(nom)	myénùli(kà) daughter-in-law	múcikày(kà) rainbow(nom)	pòkswúngá(kà) peach(nom)	-----
Quadri- σ roots	hàypálákì(kà) sunflower(nom)				

At the risk of making things overly complex, I distinguish three ways of referring to the lexical tone classes: surface tone pattern (the capital letters header rows of Table 1), a mnemonic term that I will use for convenient reference (the terms in quotation marks in Table 1), and the lexical prosodic representation, shown below in Table 2. The mnemonic terms need a little explanation. “Initial H” and “medial H” are self-explanatory. “Preaccent”, taken from Ramsey (1975), refers to nouns that had a H on the initial syllable in Middle Korean. By the KYENGSANG ACCENT SHIFT (to be discussed in §5), this H shifted to a floating position before the noun. In citation forms, these words now have H(H) tones, but the “preaccent” designation continues to have synchronic meaning: when a preaccent noun follows an atonic noun in a phrase, the atonic noun hosts the H of the preaccent noun and the preaccent noun is L, e.g. *tòtúk* (atonic) ‘thief’ + *nóm* (preaccent) ‘rogue, wretch, bastard’ → *tòtúk nòm* ‘despicable thief’. “Atonic” words are distinguished by having no effect on the lexical tone pattern of a following word in a phrase. Monosyllabic nouns of the “rising” class are actually pronounced with a rising pitch in citation form, and all nouns of this class had initial rising tone in Middle Korean.

We can summarize the legal pitch patterns of Kyengsang Korean nouns in terms of phonological constraints, as follows (Schuh and Kim 2008). The effect of the last constraint shows up only in the absence of a HLH pattern in the items in Table 1, but we will see that it also plays a role in tonal phrasing.

(1) Constraints on surface tonal patterns of words in Kyengsang Korean

*[L]_{PHON. WORD}: A phonological word cannot consist of only low tones.

*#LL: A phonological word cannot begin with more than one L syllable.⁶

*HHH: A phonological word cannot have three H syllables.

*XLH(PHRASE) (X ≠ null): Within a phonological phrase, H cannot follow non-initial L, i.e. the only LH sequences are initial.

⁵ In Modern Korean dialects that have a vowel length distinction, it is this class that has long vowels in the first syllable.

⁶ For typographical convenience, I use notations like “LL” to mean “L associated with two consecutive syllables”. In autosegmental notation, this would, of course, be represented as a single L associated to the two syllables.

REALIZE(TONE): Lexical tone must be realized (on at least one syllable).

DEP(TONE): Do not add a tone (= H, since there are no lexical L tones).

The lexical prosodic representations from which the surface patterns in Table 1 are generated are shown in Table 2.

Table 2. South Kyengsang lexical representations of tone classes

	LHL “media H”	HL “intial H”	HHL (see note *) “preaccent”	H, LH “atonic”	LHH “rising”
Mono-σ roots	-----	-----	# H #X H nwun nwun	mal	H say
Di-σ roots	-----	H meli	# H #X H moki moki	kaci	H salam
Tri-σ roots	H minali	H myenuli	# H #X H mucikay mucikay	pokswunga	-----
Quadri-σ roots	haypalaki				

*# = beginning of a phonological phrase. The HHL ~ “preaccent” class has two base allomorphs, one used when the word is initial in a phonological phrase, the other when it is not (“X” ≠ ∅).

Lexically, there are only H tones, i.e. any surface L tones will be the result of rules or the interaction of constraints, depending on one’s taste in phonological analysis. In the case of the phrase initial allomorph of the “preaccent” class and of the “rising” class, the lexical H is doubly linked.⁷ If the lexical item itself does not have enough syllables, the right branch of the H will associate with a following syllable in the phrase, if any. In the “rising” class, the entire doubly branching lexical H is floating. To account for the fact that rising class nouns always exhibit a LH surface pattern, we can use a highly ranked constraint REALIZE(TONE), i.e. no lexical tone should be left prosodically unrealized in pronunciation. In the case of disyllabic nouns, the left branch of the doubly associated H associates with the second syllable of the word. Monosyllables, in order to avoid violating REALIZE(TONE), add a mora of length to accommodate the floating H, the surface result being a R on a long vowel. In a longer phrase, however, the floating H finds a host, and the lexical monosyllable is pronounced as L with a short vowel, which is the lexically specified vowel since there are no lexical long vowels in SKS Korean.

The “preaccent” class behaves differently when initial in a phrase (including citation form) from when it is second in a phrase, viz. when phrase initial the tones are H(H(L)) but when not initial, nouns of this class can be analyzed as having an initial floating H, which docks to the preceding word (recall the example cited above, *tòtúk* (atonic) ‘thief’ + *nóm* (preaccent) ‘rogue, wretch, bastard’ → *tòtúk nòm* ‘despicable thief’). It is hard to imagine a single underlying form with constraints or rules that would account for the surface outcomes in a non-stipulative way, so my preference is to state the facts as they are.

⁷ We can *almost* call the Tone Bearing Unit the syllable, since SKS Korean does not have phonemic vowel length. However, as we will see, “rising” class monosyllables in citation form add a mora of length to accommodate the left branch of their lexical H.

The “atonic” class has no lexical tone. Again speaking in constraint-based terms, the H tones in the pronunciation of these words come from the interaction of the constraints $*[L]_{\text{PHON WORD}}$, $*\#LL$, and DEP(TONE). All these words require a H to avoid violating the first constraint. To avoid a violation of DEP(TONE), words of more than one syllable do not add H to the first syllable, but $*[L]_{\text{PHON WORD}}$ is ranked higher than DEP(TONE), so monosyllables have no choice but to add H.

Quadrisyllabic words all have the surface pattern LHHL.⁸ These words can all be represented as lexically “atonic”. They must have initial surface #LH like di- and trisyllabic atonic words, but they cannot have the pattern LHHH, as an extension of the #LH pattern, because this would violate the constraint $*HHH$ within a lexical word.

In order to account for phrasal prosody, we must introduce another dimension, viz. *accent* or *pitch accent*.⁹ That is, phrasal prosody has properties of a stress-accent system, but accent is marked by pitch rather than by stress. Speaking of stress systems, Hyman (2009:217) says, “A widely accepted definition of a language with stress is one in which there is an indication of word-level metrical structure meeting the [following] two core criteria:” (quoted from Hyman)

- (2) a. OBLIGATORINESS: every lexical word has AT LEAST one syllable marked for the highest degree of metrical prominence (primary stress)
- b. CULMINATIVITY: every lexical word has AT MOST one syllable marked for the highest degree of metrical prominence

It is not the purpose of this paper to typologize SKS Korean, though (2a) is reminiscent of the fact captured by the constraint $*[L]_{\text{PHON WORD}}$. It is the property of CULMINATIVITY that is crucial in referring to (*pitch*) *accent*. A phonological phrase in SKS Korean may have at most one HL pitch drop. Once a HL drop is reached, pitch within a phonological phrase may not rise back to H.¹⁰ I will refer to this HL drop as an “accent point”. An accent point is a derived phenomenon, not a lexical property. The “initial H”, “medial” H, and “preaccent” categories are inherently accented because their lexical H in combination with tone rules/constraints will ultimately result in a HL accent point. Quadrisyllabic nouns will always be accented since the constraints on pitch patterns will guarantee that they always end in a HL surface pattern, even though they need have no tone associated with them lexically. An accent point can also be created by addition of a particle/suffix. Monosyllabic particles/suffixes are all preaccent. When added to an atonic word, e.g. /kaci H-lul/ → [kàcí-lùl] ‘eggplant-accusative’, the floating H of the suffix associates to its host and the suffix itself takes default L, creating a HL accent point.

The culminative property associated with a HL accent point shows up in phonological phrases in the following ways: (i) if a word with an accent point is initial in a phrase, a following element that also has a HL accent point will lose that accent point by severely attenuating the H or losing it altogether; (ii) if a word with an accent point precedes an

⁸ Monomorphemic quadrisyllables are not common, and historically speaking, all such words were probably morphemically complex. I know of no arguably lexical words that have five or more syllables.

⁹ Hyman (2009) argues convincingly against the existence “pitch accent” being a well-defined language type. He calls languages such as Kyengsang Korean “restricted tone languages”, by which he means that they have pitch as their most salient prosodic property, but they have typological features of both tone languages and stress languages. I will, nonetheless, retain the term “pitch accent” as a convenient label.

¹⁰ A careful study of the pitch contours of phonological phrases reveals that this statement is not quite true to the facts. Both Kenstowicz and Sohn (1997) and Jun et al (2006) use F0 tracings to show that there is, at least sometimes, the “ghost” of a former LH... pattern in material following a HL accent point in a phrase. Schuh and Kim (2008) suggest that this is because of the *accental*, rather than purely *tonal* nature of Kyengsang prosody. In a stress-accent system, stresses other than the primary stress are attenuated but not deleted, whereas in a canonical tone system, tonal processes usually alter tones in a categorical way, i.e. tones targeted by phonological rules are completely replaced by other phonological tones, they are downstepped or upstepped to specific distinctive tone levels, etc.

atonic element, the latter will be pronounced with all L tones, i.e. the second syllable will not rise to H as it would if initial in a phrase; (iii) if a word without an accent point is first in a phrase, the following word retains its lexically specified prosodic structure, i.e. it will retain a HL accent point if it has one, but if it does not, the whole phrase remains unaccented, shown by a LH... pattern over the phrase with no HL drop. Table 3 gives examples of monosyllabic and disyllabic nouns of each of the lexical tone classes in phrases, with a disyllabic “initial accent” item, a disyllabic “atonic” item, and a disyllabic “preaccent” item.

Table 3. Phrases showing the effect of each lexical class on a following item in a phrase

Tone class, # syllables			chélèm (initial) ‘like, likeness’	sèyphò (atonic) ‘cell’	náymsáy (pre- accent) ‘odor’
“initial H” (2)	méli HL	‘head’	méli chélèm HL LL	méli sèyphò HL LL	méli nàmsày HL LL
“preaccent” (1)	nwún páp H	‘eye’ ‘rice’	nwún chélèm H HL	nwún séyphò H HL	páp nàmsày H LL
“preaccent” (2)	mókí HH	‘mosquito’	mókí chélèm HH LL	mókí sèyphò HH LL	mókí nàmsày HH LL
“atonic” (1)	mál H	‘horse’	mál chélèm L HL	mál séyphó L HH	mál nàmsày H LL
“atonic” (2)	kàcí LH	‘eggplant’	kàcí chélèm LH HL	kàcí séyphó LH HH	kàcí nàmsày LH LL
“rising” (1)	sày: R:	‘bird’	sày chélèm L HH	sày séyphó L HH	sày náymsáy L HH
“rising” (2)	sàlám LH	‘person’	sàlám chélèm LH HL	sàlám séyphò LH HH	sàlám náymsáy LH HH

Preaccent monosyllables (*nwún* ‘eye’) and rising words (*sày* ‘bird’, *sàlám* ‘person’) obscure the generalizations preceding Table 3 somewhat, because these categories of words have floating H’s that associate with whatever follows in a phonological phrase. *Nwún séyphò* ‘eye cell’ looks as if atonic *sèyphò* has developed a HL accent point. The initial H, however, is actually the floating H from *nwún*. This phrase fits outcome (ii) in that the phrase ends with L rather than the H heard in the citation form of *sèyphò*.¹¹

Rising words have floating H that shows up on following syllables in a phrase. For monosyllabic words in initial position with atonic words in second position, this makes atonic monosyllables (*mál séyphó*), from outcome (iii), and rising monosyllables (*sày*

¹¹ Assigning a HL accent point to preaccent monosyllabic and disyllabic words involves a bit of handwaving. These words, in isolation, never have a HL pitch drop. My interpretation is that if a word has lexical HH, the *HHH constraint implies that a pitch drop must follow. The drop can be realized in citation form only on trisyllabic nouns like *múčíkày* ‘rainbow’. Rising tone words also have two lexical H tones, but the outcome is a little different from preaccent nouns. The rising class has only monosyllabic and disyllabic members (the MK candidates for trisyllabic rising class words, with a modern SKS LHH citation pattern, have all neutralized with atonic trisyllabic words). This guarantees that when a rising class noun is N1 in a phonological phrase, at least one of its floating H tones will dock to N2. But now the lexical tone pattern of N2 takes over, i.e. the floating HH pattern of rising class words never has a chance to be followed by an implied drop to L as it does in trisyllabic preaccent words or even disyllabic preaccent words, where the lexical HH will be exhaustively realized on the base. This, of course, leaves us with the fact that monosyllabic preaccent words associate one floating H to the first syllable of the next word and DO act like they create an accent point (*múl* (preaccent) ‘water’ + *minàli* (medial H) ‘parsley’ → *múl minàli* ‘water parsley’, where the lexical H of *minàli* is lost). Sigh!

séyphó) look alike. The difference in the classes is seen when the second element has an accent point. Atonic *mal* ‘horse’, having no lexical tone, is now pronounced as L, and it has no effect on the accented *chélèm* (*màl chélèm*), whereas the HH floating pattern of *say* ‘bird’ associates to the following item, in effect creating a LHH atonic phrase (*sày chélèm*).

Phrases with preaccent words in second position generally behave in predictable ways given the lexical non-initial allomorph in Table 2. In particular note the H on the monosyllabic atonic *mal* ‘horse’, which comes from docking the floating lexical H. The one outcome for which I don’t have a clear account is that following a disyllabic rising noun, viz. *sàlám náymsáy*. The lexical floating H-H of *sàlám* HH associates to the second syllable of *sàlám* and the first syllable of *naymsay*. The lexical representation of preaccent nouns would predict L on the second syllable of *naymsay*. The H on the last syllable has to be related to the preaccent category of *naymsay*, not to the lexical tone of *salam*, given that both *sàlám célèm* (initial H second element) and *sàlám séyphò* (atonic second element) end in L, but it is not obvious why this should be the case.

At this point it will also be useful to show the behavior of nouns of the various classes with monosyllabic suffixes, of which there are many. Table 4 illustrates the same initial nouns in Table 3 with the suffix *-man* ‘only’. All other monosyllabic suffixes show the same prosodic behavior.

Table 4. Mono- and disyllabic nouns of all classes with the suffix *-man* ‘only’

“initial H” (2)	méli HL	‘head’	méli-màn HL-L
“preaccent” (1)	nwún H	‘eye’	nwún-mán H-H
“preaccent” (2)	mókí HH	‘mosquito’	mókí-màn HH-L
“atonic” (1)	mál H	‘horse’	mál-màn H-L
“atonic” (2)	kàcí LH	‘eggplant’	kàcí-màn LH-L
“rising” (1)	săy: R:	‘bird’	sày-mán L-H
“rising” (2)	sàlám LH	‘person’	sàlám-mán LH-H

All monosyllabic suffixes belong to the *preaccent* lexical class, but since suffixes will never be initial in a phrase, they have only an #X H ___ allomorph parallel to the non-initial allomorph for preaccent nouns seen in Table 2. As in the phrases illustrated in Table 3, the prosodic properties of the initial element override those of the second element, except for atonic words, which have no lexical tone. Thus, an initial H noun, which has an inherent accent point, conditions deletion of the floating H of the suffix. Monosyllabic preaccent nouns like *nwún* H and rising nouns like *săy:* H and *sàlám* H associate their floating H’s to the suffix. But with atonic nouns, the floating H of the suffix associates to the final syllable of the noun. With disyllabic nouns like *kàcí*, the resultant LH tone is identical to citation and phrase initial tones as in Table 3, but monosyllabic atonic nouns like *mál*, which have L tone in phrases like those in Table 3, have H when a monosyllabic suffix is added.

With this background on how different lexical tone classes can be detected and the meaning of “accent”, we can now turn to verbs, whose tone classes we will relate to those of nouns.

3. Verbal Tone Classes in SKS Korean

On the next page is a table of verbs, listed by SKS class. At this point, we consider only monosyllabic verb roots, i.e. CV(C)C-, CV-. A large majority of native monomorphemic verb roots are monosyllabic. Most longer native verbs are compounds (*ka-cye-o-ta* ‘bring’ < “go-carry-come-CITATION”) or derived forms (*kam-ki-ta* ‘be rolled

Table 5. South Kyengsang Korean verb classes for verbs with monosyllabic roots

tone class	root	R 75/91	MK CIT/INF	SKS CIT	-tela	-(u)myen	INF	ENGLISH
atomic	CVp-	1/1	cápá/cápá	cápá	cápéla	cápumyèn	cápá	catch
	CVt-	1/1	kéttá/kéte	kéttá	kéttéla	kétumyèn	kéte	gather, uncover
	CVc-	1/1	núcá/núce	núcá	núctéla	núcumyèn	núce	be late
	CVk-	1/1	méká/méke	méká	méktéla	mékumyèn	méke	eat
	CVs-	1/1	péstá/pése	péstá	péstéla	pésúmyèn	pése	remove, take off
	CVl-	1/1	túttá/tulé	túttá	túttéla	túlmyn	tulé	raise
	CVB-	5/6	tóptá/tóBá	tóptá	tóptéla	tówumyèn	tówá	help
	CVD-	5/6	kéttá/kelé	kéttá	kéttéla	kélumyèn	kéle	walk
	CVZ-	5/6	cístá/cíze	cístá	cístéla	cíumyèn	cíe	cook (rice)
	CVm-	5/6	němtá/némé	němqá	němqéla	němumyèn	némé	exceed
rising	CVl-	5/6	tóltá/tólá	tóltá	tóltéla	tólmyèn	tólá	turn
	CV-	2b/5?	náyá	náyá	náyéla	náyumyèn	náyé	give over
	CVt-	2b/5?	éttá/ete	éttá	éttéla	étumyèn	éte	receive
	CVB-	2b/5?	swiptá/swíbe	swiptá	swiptéla	swíwumyèn	swíwé	be short
	CVc-	2a/2a	chÁctá	cháctá	cháctéla	chácumyèn	chácá	be easy
	CVl-	2a/2a	phÁltá	pháltá	pháltéla	phálumyèn	phálá	search
	CVm-	2a/2a	swúmtá	swúmqtá	swúmqtéla	swúmumyèn	swúmé	sell
	ccV-	2a/2b	psúta	ssúta	ssúttéla	ssúmyèn	ssé	hide
	ChV-	2a/2b	thítá	chítá	chítéla	chúmyèn	chyé	use
	irreg Ca-	Ca/o/u	cátá	cátá/*cátá	cátéla/*cátéla	cámyèn/*cámyèn	cá	strike
irreg Ce-	Ce/i-	cítá	cítá/*cítá	cítéla/cítéla	címyn/címyn	cyé	sleep	
		3/4					lose (a contest)	

up' > "roll up-PASSIVE-CITATION"), though there is a significant number of lexically disyllabic verbs to which I return in §6. All loan verbs comprise a root compounded with the verb *ha-ta* 'do' (*pyo-ha-ta* 'be exquisite' < Chinese *pyo* 'exquisite'). Korean verbs always bear at least one suffix, so tone classes must be understood in terms of a verb root plus a suffix. I return to the tones of the suffixes themselves in §4. An explanation of the columns in Table 5 is as follows:

TONE CLASS: The prosodic classes of nearly all monosyllabic SKS verbs can be aligned with prosodic classes of monosyllabic nouns as outlined in Tables 1 and 2, but in some cases, one verb class aligns with more than one nominal prosodic class, depending on which affixes are attached to the verb. The TONE CLASSES in the first column refer to the tone classes in Tables 1 and 2.

ROOT: This is relatively self-explanatory. Lower case letters are the Yale transcriptions of phonemes (except *preaccent* class "ccV-" verbs, where "cc" = any tensified consonant). Capital B and Z represent Middle Korean phonemes, usually represented as [β] and [z] respectively, that have neutralized with other phonemes in Modern Korean. Capital D represents reconstructed *d, whose allophones [t] / ____σ, [t̚] / ____σ had already neutralized with the phonetically identical allophones of /t/ and /l/ in MK respectively (and, of course, in Modern Korean).

R 75/91: These are the class numbers used by Ramsey (1975) to the left of the slash and Ramsey (1991) to the right of the slash. Ramsey's numbering system(s), were correlated with prosodic and segmental properties of MK verbs, which, while important in understanding the sources of the modern classes, are not directly relevant to a description of modern Korean verbs. I include these to facilitate reference to Ramsey's crucial work, but I will refer to the TONE CLASS labels in the first column in discussion here. Ramsey (1975/1991) had two other classes, 1b/7, which I will discuss in §3.6, and a disyllabic group, referred to as "longer verb stems"/8, which I will discuss in §6.

MK CIT/INF = "Middle Korean Citation form/Infinitive": These are the MK antecedents of the modern SKS forms. These forms reveal features of the prosody, and for some verbs, final consonant class. I wasn't able to positively identify the tones for some of the infinitives because Ramsey (1975, 1991) does not list all the words cited here, and Yu (1964) includes infinitives only within example phrases, where he does not mark tone.

SKS CIT = modern Kyengsang Korean citation form: Verbs always have at least one suffix. Citation forms have what is described as "the meaningless suffix, *-ta*". This suffix is representative of the prosodic behavior of all monosyllabic particles/suffixes.

-tela: This is described as the "retrospective assertive" ending.¹² In SKS, it is of the initial H class (see Table 1) and will serve to illustrate the behavior of verb roots with a suffix that contains an accent point.

-(u)myen: This is the verb ending that marks a conditional clause. It serves to illustrate the behavior of verb roots with a suffix shown in pedagogical grammars as $-uX \sim -X$, that is, suffixes with initial $-u-$ only when suffixed to consonant final roots.

¹² This suffix is actually morphemically complex, comprising $-te-$ plus the "plain" politeness level ending $-ta$ ($/-te-+ta/ \rightarrow [-tela]$). Lee and Ramsey (2000:179-180) refer to $-te-$ as having "the most idiosyncratic and complex usage of all the prefinal endings." It has the feature of "remoteness", indicating that the event is remote in either time or place from the here and now.

INF: This is the form usually called the “infinitive”, where the suffix itself is a stable vowel. This suffix exhibits “vowel harmony”, being /a/ with roots whose vowel is /o, a/ and /e/ for others.

In the following sections, I will compare the tonal behavior of comparable verb and noun roots for the various verb classes.

3.1. Atonic verbs. These verbs all have CVC roots, and the final C undergoes no alternations other than general phonemic ones (voicing of intervocalic lax stops and normal alternations involving /l/), though see §3.6 for a small number of exceptions. These verbs behave prosodically like atonic nouns, *ceteris paribus*.

(3)	X + 1-σ suff.	X + accented	X + (u)suff.	X + V-suff
Noun:	cíp-màn only a house	cìp chélèm like a house	cíp-ùlò via the house	cíp-èy in the house
Verb:	cáp-tà catch	càp-télà caught (elsewhere)	cáp-ùmýèn if (one) catches	cáp-à to catch

Both nouns and verbs with a monosyllabic suffix have a HL pattern. As explained following Table 4, all monosyllabic suffixes are of the preaccent class, i.e. they have an initial floating H which associates to the final (or only) syllable of an atonic host. Suffixes that are a single vowel, when added to a CVC root (here, -èy ‘at, in’ for the noun, -à infinitive for the verb), follow the same pattern. Also, both nouns and verbs with suffixes of the form “-usuff.” have a HL(L) pattern. These suffixes, too, are of the preaccent class.

When phrased with a second element that has a HL accent point, both atonic nouns and atonic verbs have L, the tone expected for a lexically toneless monosyllable when a H is not forced by some constraint or when the syllable is not associated with a floating H.

3.2. Rising/tonic verbs. Like atonic verbs, verbs of this class all have CVC roots, but root phonological types are in near complementary distribution for the two classes. The second consonants of the atonic roots undergo only alternations that are general for Korean phonology, whereas all the rising/tonic roots where C2 is an obstruent are all of the so-called “irregular” type, which alternate *p/w*, *t/l*, or *s/∅*.¹³ Moreover, the only such verbs that are not of the rising/tonic class are a small number of verbs that are in the rising class (§3.3) and a small number of exceptional atonic verbs (§3.6). These “irregular” verbs all had a voiced C2 in one of their allomorphs in MK. In addition to “irregular” verbs, the rising/tonic class includes most verbs where C2 is a nasal (a few such verbs belong to the preaccent class, §3.4). The only root type that overlaps between the atonic class and the rising/tonic class comprises verbs where C2 is /l/. Ramsey (1975:224-226, 242-243) gives lists of 40-50 verbs for each class. Only 4 of the atonic verbs that he lists have /l/ as C2, whereas 18 of the rising/tonic ones do. In short, with the exception of a few verbs where C2 = /l/, verbs of the atonic class all have underlying voiceless C2 whereas all rising/tonic verbs have historical and/or synchronic voiced C2.

¹³ There are no verbs in this class with a root-final velar or palatal. The alternating consonants of “irregular” verbs were voiced obstruents in proto-Korean, viz. *b, *d, *z, whose allophones have now all merged with other phonemes, though in MK intervocalic [β] < *b and [z] < *z were still distinct phonemes. By the time of MK, the earliest period for which we have Korean phonological data, the likely proto-Korean *g had already disappeared without a trace, either through loss or merger. If *dʒ existed in proto-Korean, it likewise had been lost or had merged with /c/.

The rising/tonic class of verbs have the LH(H) pattern when their suffix, regardless of its length and underlying prosodic properties, begins with a consonant, but they have the HL(L) pattern seen with atonic verbs in §3.1.1 when the suffix begins in a vowel.

(4)

	X + 1- σ suff.	X + accented	X + (u)suff.	X + V-suff
Rising noun:	sòk-má only inside	sòk chélém like inside	(sòk-úló) (via inside)	(sòk-éy) (at inside)
Atonic noun:	(cíp-màn) (only a house)	(cìp-chélèm) (like a house)	cíp-ùlò via the house	cíp-èy at the house
Verb (usuff):	tòp-tá help	tòp-téla helped (elsewhere)	tówùmyèn if (one) helps	tówà to help
Verb (#suff)	tòl-tá turn	tòl-téla turned (elsewhere)	tòl-myén if (one) turns	tólà to turn

For *-usuff.* suffixes, the *-u-* does not appear if the host ends in a vowel or /l/. In Table 5, the /l/-final example, *tòlmyén* ‘if (one) turns’, shows the “rising” LH(H) pattern because the suffix is consonant initial. This contrasts with the atonic /l/-final counterpart, *túlmyèn* ‘if (one) raises’, which retains the atonic pattern throughout the paradigm.

3.3. Rising verbs. This is a small class of verbs that behave prosodically like rising nouns, with the characteristic LH(H) pattern in all environments. Maybe! The verb *nàytá* ‘give over’ in Table 5, is the only verb in the group ending in a vowel and has prosodic behavior identical to that of *tòltá* ‘turn’, listed among the rising/tonic class, with the infinitive having the prosody of an atonic class verb. In the table, I have listed them according to Ramsey’s (1975) classification, but in fact they are ambiguous as to class.

(5)

	X + 1- σ suff.	X + accented	X + (u)suff.	X + V-suff
Noun:	sòk-mán only inside	sòk chélém like inside	sòk-úló via inside	sòk-éy at inside
Verb:	èttá receive	èttéla received (elsewhere)	ètúmyén if (one) receives	èté to receive

Ramsey (1975:229) lists only 9 verbs in the rising class. Aside from their characteristic prosodic behavior, the only thing they seem to have in common phonologically is that they all historically derive from MK rising verb roots, but this is also the case with all the rising/tonic verbs. In addition to the three in Table 5, Ramsey (1975) lists the following (given in their SKS citation forms and infinitives): *kòptá/kòwá* ‘be pretty’, *kwùlktá/kwùlké* ‘be thick’, *còhtá/còhá* ‘be good’, *sèlptá/?* ‘be sorrowful, doleful’,¹⁴ *èpstá/èpsé* ‘not exist’, *cèktá/cèké* ‘be few, be small’. There seems to be no common thread in root structure: most end in a consonant, but one ends in a vowel; some, but not all, have complex codas; some but not all have the consonant alternations of “irregular” verbs; most, but not all are stative verbs (“adjectives” in the traditional Korean nomenclature).

3.4. Preaccent verbs. Ramsey (1975:228-229) lists 24 verbs in this class.¹⁵ Of these, 14 have the root structure C_{plx}V, where C_{plx} (“complex” consonant) = tensified or aspirated consonant, and among these, all but three or four ended in one of the “weak” vowels of MK (/u/, still part of the Korean vowel system, or /A/, a vowel of uncertain pronunciation which usually > /a/ in modern Korean when in the first syllable of a word). The C2 of nearly all the remaining 10 is one of the consonants /c/, /l/, /m/ and the root vowel is a

¹⁴ This verb seems to be archaic in modern SKS. Rather, a disyllabic base is now used: *sèléptá/sèléwé*. This verb does have the LHH pattern of rising class nouns and verbs.

reflex of one of the MK “weak” vowels. These facts allow fairly consistent prediction of *atonic* ~ *atonic/rising* ~ *preaccent* tone classes based on segmental structure.

Verbs of this class consistently behave prosodically like preaccent nouns, with H on the root syllable, H on the second syllable, if any, and L on any subsequent syllable.

(6)	X + 1-σ suff.	X + accented	X + (u)suff.	X + V-suff
Noun -C:	kkúth-mán only an end	kkúth chélèm like an end	kkúth-úlò via an end	kkúth-éy at an end
Verb -C:	cháctá search	cháctelá searched (elsewhere)	chácúmyèn if (one) searches	chácá to search
Noun -V:	pí-mán only rain	pí chélèm like rain	pí-lò via rain	pí-éy in rain
Verb -V:	ssú-tá write	ssútélà wrote (elsewhere)	ssúmyén if (one) writes	ssé to write

3.5. Irregular CV- verbs. These classes comprise essentially all CV roots with a simple consonant.¹⁶ Ramsey (1991:232) says, “Class 3 and Class 4 comprise a small number of basic verbs with extremely irregular accent [= our prosodic classes].” Ramsey (1991:232-233) lists 13 verbs of his Class 3 and 13 of his Class 4. I have not investigated these verbs in detail for SKS Korean and thus can state only tentative generalizations. My guess is that there is variation both for speakers and for some items. Jieun Kim treats both classes as a mix of atonic and preaccent, though not the same mix for the two classes. The data in (7) compares a verb from each class with a CV noun from each class. For the verbs, I include prosodies that Jieun rejects as well as those she uses.

(7)	X + 1-σ suff.	X + accented	X + (u)suff.	X + V-suff
Noun atonic:	pí-màn only a monument	pì chélèm like a monument	pí-lò via a a monument	pí-èy at a monument
Noun preaccent:	pí-mán only rain	pí chélèm like rain	pí-lò via rain	pí-éy in rain
Verb Ca-:	cá-tà/*cá-tá sleep	cá-télà/*cà-télà slept (elsewhere)	cá-myèn/*cá-myén if (one) sleeps	cá to sleep
Verb Ci-:	cí-tà/*cátá lose	cì-télà = cí-télà lost (elsewhere)	cí-myèn = cí-myén if (one) loses	cyé to lose

3.6. Ramsey’s (1975:258) Class 1b = (1991:236) Class 7. Ramsey gives one further class of monosyllabic stems. The interest of this as a separate class is primarily

¹⁵ Ramsey (1991:228, esp. fn. 22) lists a few more, some of which have a rather complex history.

¹⁶ The V excludes the vowels “ey” and “ay”. These vowels are written in hankul as ㅝ (Yale *ey*) and ㅞ (Yale *ay*) respectively, which in hankul are orthographic combinations of ㅝ (Yale *e*) and ㅞ (Yale *a*) plus ㅣ (Yale *i*). Today, most speakers pronounce both vowels [e], though some speakers may differentiate them as [e] and [ɛ] respectively. It is my assumption, not supported in any Koreanist literature that I have read ☺, that, in fact, these have always been pronounced as front non-high monophthongs, but that the developers of hankul, perhaps for reasons of parsimony, represented them as combinations of vowel symbols, with the ㅣ component signaling frontness and the other components signaling degrees of height. On the grounds of typical vowel typologies and modern pronunciation, I suggest that the MK vowel system was as follows (hankul and Yale equivalents in parentheses):

	Front	Central	Back
High	i (ㅝㅣ = <i>i</i>)	ɨ (ㅞ = <i>u</i>)	u (ㅞㅣ = <i>wu</i>)
Mid	e (ㅝㅣ = <i>ey</i>)	ə (ㅞ “A”)	o (ㅞ = <i>o</i>)
Low	ɛ (ㅝㅣ = <i>ay</i>)	a (ㅞㅣ = <i>a</i>)	ɔ (ㅞㅣ = <i>e</i>)

In modern Korean, the non-high front vowels have merged as [e] for most speakers, and MK /ə/ has merged with /a/ in initial syllables and with /i/ elsewhere. The infrequency of *ey/ay* (and also *e*) as stem vowels in verbs is paralleled in many languages that limit verb stem vowel classes to a subset of all the vowels.

historical, since in modern SKS Korean, these verbs all fall into prosodic classes seen in Table 5. Ramsey (1991:236) says, “This was a small class of some 25 verbs.” They are of interest because, in MK, with suffixes of the *-umyen* type, these verbs had L tone on the initial vowel of the suffix whereas other classes had H, e.g. MK Class 1 (= our *atonic*) *càptá/càpúmyén* ‘catch’, MK Class 6 (= our *atonic/rising*) *tǒptá/tòBúmyén* ‘help’, BUT MK Class 7 *mùyptá/mùyBùmyén* ‘be hateful’. Ramsey (1975:258) lists 16 verbs of his Class 1b/7. From the point of view of SKS root structure and prosody, they fall into three groups.

Table 6. South Kyengsang reflexes of Ramsey’s Class 1b/7

atonic (final <i>-h</i> or <i>-nc</i>)	atonic/rising (final <i>-s/∅</i>)	atonic (final <i>-p/-w, -t/-l</i>)
nóhtà, nòhtélà, nòhùmyèn put	pùstá, pùstélá, pùmyèn pour; swell	nwúptà, nwùptélà, nwúwùmmyèn lie down
táhtà, tàhtélà, táhùmyèn touch, reach	cèstá, cèstélà, céumyèn spin	míptà, mìptélà, míwùmmyèn be hateful
ánctà, ànctélà, áncùmmyèn sit down		túttà, tùttélà, túlùmmyèn listen

Those in the left column, from the point of modern SKS, are like any other *atonic* verbs, being unusual only in their final root consonants (7/9 of Ramsey’s examples end in *-h* and the other two in the unusual cluster *-nc*). Those in the middle column, likewise, are not unusual from the point of view of SKS: like all other verbs that show the *-s/∅* root alternation, they belong to the *atonic/rising* class. Only those in the right-hand column, which show the *-p/-w* or *-t/-l* root alternation, are unusual. These verbs belong prosodically to the *atonic* prosodic class, whereas the large majority of verbs that show these alternations belong to the *atonic/rising* prosodic class.

4. Verb Suffixes

Since verbs always have at least one suffix, it is the behavior of verb root + suffix that has to be diagnostic for the verb tone class and, reciprocally, the same construction has to be diagnostic for the tone class of the suffix(es). This section discusses suffixes according to their prosodic effects.

Ramsey (1975:274-275) presents a fairly extensive list of verb suffixes with their counterparts in Middle Korean (MK), South Hamkyeng Korean, and South Kyengsang Korean (SKS). The data in Table 7 is adapted from Ramsey’s list, omitting South Hamkyeng, but including MK, Ramsey’s labels for function, and SKS with prosody somewhat reinterpreted. The subgroups are mine, determined by the prosodic interaction with verb roots. Each is illustrated with a CVC atonic root. Only an atonic root will fully reveal the prosodic effects of the suffixes, since verbs of the rising and preaccent classes impose tonal properties on what follows. Three root types are needed to see all the prosodies: *cap-* ‘catch’, with a final non-alternating obstruent, is satisfactory for most suffixes; *tul-* ‘raise’, with a final /l/, illustrates what happens with suffixes beginning with the weak vowel /u/, which is elided after a root-final vowel or /l/; *kot-* ‘be straight’ illustrates what happens with stative verbs (traditionally referred to as “adjectives”) when a suffix form differs from that used with active verbs.

Table 7. Verb suffixes

MK	SKS	Ramsey's functional gloss	Atonic roots: <i>cap-</i> 'catch' (- <i>obst.</i>) <i>tul-</i> 'raise' (- <i>l</i>) <i>kot-</i> 'be straight' (adj.)
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(a) Monosyllabic suffixes (all preaccent)

-tà	-ta	citation (all verbs) indicative assertive (stative)	cáp-tà kót-tà
-kó	-ko	gerund	cáp-kò
-kí	-ki	nominative	cáp-kì
-kéy	-key	adverbial	cáp-kèy
-tí	-ci	nom. in neg. constructions	cáp-cì
	-ca	propositive	cáp-cà
	-ney	indicative assertive	cáp-nèy
-á/-é	-a/e	infinitive	cáp-à
-Án/-ún	-un ^{-nun(c)}	perfective modifier (with -V or /-l/ final root)	cáp-ùn (kès) tú-n (kès)
-Ál/-úl	-ul	prospective modifier (with -V or /-l/ final root)	cáp-ùl (qkès) ¹⁷ tù-l (qkés)
-myén	-myen ^{-umyen(b)}	conditional	túl-myèn
-myé	-mye ^{-umye(b)}	conjunctive ("while")	túl-myè
-ní	-ni ^{-uni(b)}	sequential	tú-nì
	-so	indicative assertive (archaic)	cáp-sò

(b) Multi-syllabic preaccent suffixes

-ássta/-éssta	-assta/-essta	past indicative assertive	cáp-àssta
-Á/úmyen	-umyen ^{-myen(a)}	conditional	cáp-ùmyèn
-Á/úmye	-umye ^{-mye(a)}	conjunctive ("while")	cáp-ùmyè
-Á/úni	-uni ⁻ⁿⁱ	sequential	cáp-ùnì
	-untey ^{-nuntey(d)}	processive (stative verb)	kót-ùntèy
	-unya ^{-nunya(d)}	processive modifier + Q (stative)	kót-ùnyà

(c) Monosyllabic atonic suffixes

-nÀn	-nun ^{-un(a)}	processive modifier (with -V or /-l/ final root)	cáp-nún (kès) tù-nún (kès)
-tén	-ten	retrospective modifier	cáp-tén (kès)

(d) Tonic suffixes

-tèla	-tèlà /-té-tà/	retrospective assertive	cáp-tèlà
	-núntà ^{-ta(a)}	processive assertive (active) (with -V or /-l/ final root)	cáp-núntà tú-ntà

¹⁷ The Yale orthography used "q" to indicate tensification of a consonant (some affixes condition otherwise unpredictable tensification). This is not overtly marked in hankul.

	-núntèy ^{-untey(b)}	processive (active verb) (with –V or /-l/ final root)	càp-núntèy tù-núntèy
	-núnyà ^{-unya(b)}	processive modifier + Q (active) (with –V or /-l/ final root)	càp-núnyà tù-núnyà
	-núnkwúnà ^{-kwúnà}	processive modifier + apperceptive (active); (with –V or /-l/ final root)	càp-núnkwúnà tù-núnkwúnà
	-kwúnà ^{-núnkwúnà}	processive modifier + apperceptive (stative)	kòt-kwúnà
-kèná	-kén(à)	tentative adversative (<i>whether</i>)	càp-kén(à)
	-kéysstà	future indicative assertive	càp-kéysstà
	-tákà	transferentive	càp-tákà
	-súpnítà	polite indicative (/ C___)	càp-súpnítà
	-pnítà	polite indicative (/ V, l___)	tù-pnítà
	-kéyssúpnítà	future polite indicative	càp-kéyssúpnítà

The suffixes in group (a) comprise the largest set. These are suffixes that form a disyllabic stem when added to a monosyllabic root.¹⁸ Since these suffixes are of the preaccent class (they have an initial floating H), the floating H associates to an atonic verb root to produce a HL pattern.

The suffixes in group (c) are the only suffixes that I know of that are atonic. Instead of imposing a H on a preceding atonic root, the root+ suffix has a LH tone pattern. This is the same pattern found in noun+noun compounds comprising two atonic monosyllables, as in *kkòch pyéng* ‘flower vase’.

The suffixes in group (b), despite being disyllabic, must be of the preaccent class like the monosyllabic suffixes in group (a), since, when suffixed to an atonic verb root, they impose a H on the root. In the case of the “past indicative assertive”, the *-a/-e-* portion is transparently the “infinitive” suffix seen in group (a) combined with additional affixes,¹⁹ and hence would be expected to be preaccent. The preaccent of the suffixes having initial *-u-*, as in *-umyen* “conditional” has a different historical source, to which we return in §5.3. Briefly summarized, by Ramsey’s (1991) internal reconstruction, the *-u-* was originally the final vowel of the verb stem. Most monomorphemic verbs in proto-Korean were disyllabic with LH tones. The final vowel, which bore H, was reanalyzed as part of the suffix, producing a suffix with initial H. The KYENGSANG ACCENT SHIFT displaced this H to the left, creating an initial floating tone, i.e. a “preaccent”.

I refer to the suffixes in group (d) as “tonic” in the sense that they all have initial H when suffixed to an atonic root and they all have a HL accent point. From a historical

¹⁸ The three vowel-initial suffixes form a monosyllable when added to a root ending in a vowel, e.g. the verb *cá-tà* ‘sleep’ combines with these suffixes to form *cá* (infinitive), *cà-n* (*sálàm*) ‘(person) who slept’ (perfective modifier), *cà-l* (*qsálàm*) ‘(person) who will sleep’ (prospective modifier). A root ending in /l/ with the infinitive ending behaves like any C-final root, e.g. *túl-è* ‘to raise’, but /l/ acts like a vowel preceding /u/. Moreover, /l/ deletes when followed by /n, l, s/, resulting in *tú-n* (*kès*) ‘(thing) that one raised’, *tù-l* (*qkès*) ‘(thing) that one will raise’. This difference in tone is interesting, showing that although both suffixes show the same tonal effects with CVC- roots, they must have different underlying tone. The *-(ul)* “prospective” suffix causes tensification of the following word but *-(u)n* “perfective” does not. This fact is obviously related to the tonal difference. At the moment I have no plausible descriptive or historical scenario to explain these facts.

¹⁹ The *past indicative assertive* is described for modern Korean as a suffix *-ess/-ass-*. Historically, however, this was a phrase comprising the *infinitive* as a complement to the verb *iss-ta* ‘exist’. See M-J Kim (2003) for this and other historical grammaticalizations of this verb.

perspective, they are all morphemically complex, and their tone patterns can probably be explained in terms of the original tones of each component plus the KYENGSANG ACCENT SHIFT, but from the point of view of modern SKS Korean the initial H and the HL accent point must be lexical properties of the suffixes taken as a whole. They all have the expected prosodic effect of causing an atonic root to have a L.

When a verb + suffix forms an initial LH... phrasal pattern, as with the suffixes in groups (c-d), the prosodic effect on following material, if any, is different from that seen in any phrase types involving nouns (noun + noun compounds, noun + suffixes). With verbs, the overall prosody is always LH(...L), i.e. if longer than two syllables, the last syllable will be L and intervening syllables will be H. This is true both for verbs with multi-component suffixes and verbal constructions phrased with a following word. The explanation for this tonal difference between nouns and verbs must be related to the multi-morphemic nature of the verbal affixes, and especially the fact that the last syllable of most of them was, itself, probably a monosyllabic suffix from group (a). From a schematic historical perspective, this suffix bore H, which, because of the KYENGSANG ACCENT SHIFT, moved to the preceding syllable, resulting in a suffix complex with HL tones. I return briefly to the history of suffix tones in §5.4.

5. Historical Excursus

5.1. Tone in Middle Korean. The period of Korean language history during which the *hankul* writing system was introduced is referred to as Middle Korean (MK). *Hankul* is a morphophonemic writing system that allows us to know exactly how Middle Korean was pronounced. Middle Korean was a tone language. Not only did *hankul* represent the consonants and vowels, it also marked tone/pitch for each syllable. High pitch (H) was marked by a single dot to the left of the syllable, Rising pitch (R) was marked by two dots, and Low pitch (L) was unmarked. Table 8 shows examples of monosyllabic and disyllabic MK words with each pitch pattern as represented in *hankul* and Yale transcription (see fn. 4). In the Yale transcription, acute accent (á) = H, grave accent (à) = L, hachek (ǎ) = R. I have also included the modern SKS pronunciation of these words, to which I return below. “H” following some of the SKS transcriptions represents floating H that will end up on a following syllable. The colon after the word for ‘bird’ represents a lengthened vowel.

Table 8. Pitch marking in Middle Korean

Pitch	MK <i>hankul</i>	MK Yale	SKS Yale	
L	배	pày	páy	‘pear’
H	.배	páy	páy H	‘belly’
R	:새	sǎy	sǎy: H H	‘bird’
LL	가지	kàcì	kàcì	‘eggplant’
LH	가.지	kàcì	kácì	‘kind, type’
HL	.가지	kácì	kácì	‘branch’
RH	:가.치	kǎchí	kkàchí H ²⁰	‘magpie’

5.2. Reflexes of MK tones in modern SKS. There are two important historical developments that have affected modern reflexes of MK lexical prosody. First, pitch distinctions on any syllables following the first H or R of MK have been neutralized, i.e.

²⁰ The tensified *kk-* in the word for ‘magpie’ is found in all modern Korean dialects. I have not seen an explanation for this reflex, but it has had no effect on the expected pitch reflex in SKS.

the pitches on all syllables after the first H or R are now predictable by rule.²¹ Table 9 shows this in the SKS reflexes of a nearly exhaustive set of MK tone patterns.

Table 9. Middle Korean tone patterns and neutralization in modern reflexes

MK tone	MK example	SKS tone cl.	S. Kyengsang	Gloss
L	màl	atonic	mál	‘horse’
LL	pòlì	atonic	pòlí	‘barley’
LLL	sàtÀlì	atonic	sàtálí	‘ladder’
RLH	sǎmàkóy	atonic	sàmákwí	‘mole’
RLL	kwǎngnÁlÀ	atonic	kwǎngnáló	‘river port’
H	psál	preaccent	ssál	‘cooked rice’
HH	mókÁy	preaccent	mókí	‘mosquito’
HL	kwúlwùm	preaccent	kwúlúm	‘cloud’
HHH	twúlwúmí	preaccent	twúlwúmì	‘crane’
HHL	tyéngpákì	preaccent	ccéngpáykì	‘crown of head’
HLH	hánàpí	preaccent	háláypì	‘grandfather’
HLL	kúlssùkì	preaccent	kúlssúkì	‘writing’
RHL	kícíkèy	preac. ~ atonic	kícíkèy ~ kícíkéy	‘stretching’
LH	mèlí	initial H	méli	‘head’
LHL	kàmóthì	initial H	kàmùlchì	‘mullet’
LHH	àhÁláy	initial H	áhùlèy	‘nine days’
LR	yèswŭyn	initial H	yéswùn	‘sixty’
LLH	mÀyàcí	medial H	màngácì	‘colt’
R	mál	rising	má:l	‘speech’
RL	sálÁm	rising	sálám	‘person’
RH	wŭsán	rising	wùsán	‘umbrella’

Second, and absolutely crucial to understanding modern Kyengsang Korean tonal behavior, is the KYENGSANG ACCENT SHIFT. This sound change, discovered and described by Ramsey (1975:95-97), shifted the first H (what Ramsey called “accent”) of a word one syllable to the left (assuming a left-to-right representational system). Ramsey’s (1975:97) wording of the KYENGSANG ACCENT SHIFT is in (8). The KYENGSANG ACCENT SHIFT is most easily seen in trisyllabic words such as those in Table 10.

(8) KYENGSANG ACCENT SHIFT: “Shift the accent one syllable to the left.”

Table 10. KYENGSANG ACCENT SHIFT effects on reflexes of MK in modern SKS Korean

MK tones		SKS tones		
LL[H]	mìnàlì	L[H]L	mìnàlì	‘parsley’
L[H]L	myènùlì	[H]LL	myénùlì	‘daughter-in-law’
[H]LH	múcìkèy	HHL/[H]LLL ²²	múcìkày	‘rainbow’

²¹ This is true in both Hamkyeng and Kyengsang dialects. Ramsey (1991:217) suggests that even in MK, pitches on syllables after the first H or R were not distinctive. (“The locus of the accent was the first high-pitched syllable, or mora, in the word. After that point pitch differences were variable and non-distinctive.”) As someone whose main experience with tones is in African languages, I find this strange. Phrasal conditioning of tones is often complex in African languages, but it always follows well-defined rules. However, I have no knowledge at all of MK tones beyond those given in the headwords of dictionaries and cannot argue for or against this interpretation of MK tone/accent.

LLL	pòksyènggwà	LHH	pòkswúngá	‘peach’
RLH	sámàkwóy	LHH	sámákwí	‘mole’

In addition to the KYENGSANG ACCENT SHIFT, Ramsey (1975) proposed two additional rules (or sound changes) to account for prosody in modern Korean tonal dialects.

(9) Ramsey’s formulation of modern tonal outcomes of MK pitches

- a. *Pitch assignment rule (PAR) 1*: “Within a phonological phrase, the initial mora is low pitched, unless it is accented, and all the moras following an accented mora are also low pitched. All the remaining moras are high pitched.” (Ramsey 1975:85)
- b. *Pitch assignment rule (PAR) 2*: “Within a phonological phrase, if there is an accent in front of the first mora, the first two moras are high pitched, and all succeeding moras are low pitched.” (Ramsey 1975:94)

The modern reflex of MK words with all L pitch in both Hamkyeng and Kyengsang is LH(H), as in the words for ‘barley’ and ‘ladder’ in Table 9 and the word for ‘peach’ in Table 10. To account for this, Ramsey formulated (9a), *PAR 1*. When the first H was on the initial syllable in MK, the KYENGSANG ACCENT SHIFT would have moved the accent to the left of its host. Ramsey referred to this outcome as “pre-accent”. The modern Kyengsang (citation) reflex of pre-accent is H on the first two syllables of the word, formulated by Ramsey as (9b), *PAR 2*.

Turning to MK rising tone, Ramsey (1975:145) argues that “...the ‘rising tone’ syllables contained an accent,” but he does not integrate words with R into the KYENGSANG ACCENT SHIFT or his Pitch Assignment Rules. Indeed, R, though it signals an accent, has not shifted in SKS in the way that H has. Although a credible historical scenario for the modern reflexes of MK words with R is hard to come by, the reflexes themselves in SKS are straightforward: trisyllabic words that had initial R in MK have become neutralized with words that had all L in MK (compare ‘peach’ and ‘mole’ in Table 10); monosyllabic and disyllabic words, however, have remained tonally distinct from other classes. In citation form, disyllabic reflexes of words that had initial R in MK have LH prosody and are thus prosodically identical to reflexes of MK words that had all L tone (for example, ‘magpie’ and ‘eggplant’ in Table 8). However, when reflexes of MK disyllabic words with R tone are initial in a phonological phrase, the first syllable following this word is raised. In Table 2, I formalized this as a doubly linked lexical floating high, with the left branch of the link associated with the second syllable of its host. SKS reflexes of MK monosyllables with R tone have a citation form with a long vowel and a rising pitch (‘bird’ in Table 8, ‘speech’ in Table 9)—a prosodic pattern that must be essentially identical to what it was in MK! When such a word is initial in a phonological phrase, the vowel is shortened, it is pronounced on a L pitch, and the following TWO syllables are H, e.g. citation form *sáy*: ‘bird’, one following syllable, *sày-ká* ‘bird-subject’, two following syllables, *sày-mán-í* ‘bird-only-nominative’ (cf. *páy-màn-ì* ‘pear-only-nominative’, with atonic *páy* < MK L, and *páy-mán-ì* ‘belly-only-nominative’, with preaccent *páy* < MK H). Like disyllabic words of the ‘magpie’ type, monosyllables of the ‘bird’ type have a lexical doubly-linked floating H, but in the latter case, BOTH branches of the floating H are associated with following syllables.

In modern SKS Korean, there are two prosodic word classes that have doubly-linked H: reflexes of words that had initial H in MK and reflexes of words that had initial R in

²² This is the preaccent class of SKS. Recall from Table 2 that this class has two lexical allomorphs, a phrase initial one with HHL citation pattern and a non-initial one with initial floating H and all L on the root. This latter allomorph is the direct reflex of MK pattern plus the KYENGSANG ACCENT SHIFT.

MK. Ramsey's PAR 2 (9b) describes the facts for the former, but this rule does not give any insight into how this reflex may have developed.²³ In modern Korean dialects that have distinctive vowel length, long vowels are always reflexes of vowels that had rising tone in MK. It seems reasonable to assume that these syllables were bimoraic in MK, with L on the first mora and H on the second.²⁴ The bimoraic structure has been retained but the pitch distinctions have been lost in modern dialects that have distinctive vowel length. It cannot be an accident that just those words that had a H linked to a mora of the first syllable in MK are the words that have a doubly-linked H in modern SKS. For words that had the H on the first mora of the first syllable (= the entire first syllable) in MK, the doubly-linked H in SKS is linked to moras 1 and 2. For words that had the H on the second mora of the first syllable, the doubly-linked H in SKS is linked to moras 2 and 3. This observation does not provide much more insight than Ramsey's PAR 2 into WHY SKS has these reflexes with doubly-linked H tones, but it does broaden the generalization.²⁵

Finally, I have mentioned several times above that monosyllabic suffixes such as those illustrated in Table 4 and group (a) in Table 7 all have preaccent. In MK, these suffixes all bore H tone. Like substantive words, these affixes underwent the KYENGSANG ACCENT SHIFT. Ramsey's PAR 2 (9b), which assigns H to the first two syllables of a word in modern Kyongsang dialects, applies only when such words are phrase initial. In non-initial position, the shifted H remains as a preceding floating H (see Table 2). Suffixes, by definition, can never be phrase initial, but the fact that they underwent the KYENGSANG ACCENT SHIFT is shown by the fact that, with atonic hosts, they now bear L tone, and the shifted H shows up on the host, e.g. 'catch' MK *càp-tá* via KYENGSANG ACCENT SHIFT > /cap-H-ta/ → [cáptà].

The historical prosodic development of suffixes in groups (b-d) in Table 7 is not so straightforward. I return to this below.

5.3. Ramsey's reconstruction of proto-Korean prosody and implications for verb tones. The earliest records of Korean phonology come from the 15th Century, thanks to the development of the phonemic hankul writing system, which marked not only segmental phonemes, but also tone. Korean has no known close linguistic relatives, living or dead, so we have no sources of comparative information that might provide insights about Korean linguistic history before that time.

By the time of Middle Korean, tone was lexically distinctive, as attested by numerous minimal sets of words distinguished only by tone, e.g. MK *màl* 'algae', *mál* 'a measure of about 18 liters', *mǎl* 'speech', *kàcì* 'eggplant', *kàcì* 'type', *kácì* 'branch'. Ramsey (1991), working from statistical skewings in MK tone patterns in mono- and disyllabic nouns and their modern reflexes, as well as complementarity of root structure and tones in verbs, proposes an internal reconstruction in which "proto-Korean was characterized by a non-distinctive prosodic system in which the last (or only) syllable of a morpheme

²³ Ramsey (1975:152-154) discusses SKS reflexes of MK R tone. However, his description does not match the facts as I have observed them. He says (p. 153), "In South Kyongsang the noun *mǎl* 'speech' is a correspondence of the "rising tone" and therefore has a distinctive low pitch. It is impossible to analyze the syllable as one low pitched mora plus one high pitched mora since it contrasts with the two-mora noun *maal* [sic] 'village'." I can't make any sense of this. At least in the speech of Jieun Kim, *má:l* 'speech' has a clear rising tone, the vowel is clearly lengthened (i.e. it is presumably bimoraic), and the word is one syllable. The word *màul* 'village' (a reflex of MK *mAzÁlh* with LL tones) is disyllabic with LH tones and short vowels in both syllables. Moreover Ramsey (1975:154) cites *salam-tul-i* 'person-plural-subject' as being phonetically [sàràmdùrì] (RLLL) in SKS. Jieun pronounces this [sàlàmdùrì] (LHHL).

²⁴ Although he does not say it in quite this way, Ramsey (1975:145) suggests an analysis along these lines for MK R.

²⁵ In North Kyongsang Korean, MK words with initial R have all become preaccent with a long vowel in the first syllable. The generalization in NKS is therefore that a MK word that had a H on the first syllable (including words where the H was on the second mora) now associate H with the first two SYLLABLES and retain the length of the initial vowel of MK.

was automatically given prominence” (page 219). For MK nouns, he found that among 162 monosyllabic nouns, 127 (78%) bore H, and among 236 disyllabic nouns, 160 (68%) had a LH pattern, 46 (19%) had LL, and only 30 (13%) had HL. Moreover, among HL nouns, many are morphemically complex, and among L(L) nouns, many end in a voiced consonant and/or are Chinese loans.

This internal reconstruction for a noun prosody with final prominence relies on statistical skewings and tendencies. The reconstruction for verbs, which utilizes complementarity of root structure and tone, is even more compelling. At the risk of oversimplifying Ramsey’s work, I will restate his ideas somewhat in an attempt to paint the basic picture. Among native, non-derived verbs, the overwhelmingly largest verb stem structure of proto-Korean²⁶ was *(C)V(C)CV_w-, where V_w (“weak vowel”) = MK /u, i, A/, i.e. disyllabic stems of the shapes *CVCV_w-, *CVCCV_w-, *VCV_w-, and *VCCV_w-. Ramsey’s reconstruction of “non-distinctive prominence on the last syllable” applied to verb stems as well as to nouns. Referring to the verbal tone classes in Table 5, this reconstruction applies to the antecedents of all the verbs of the *atonic*, and *rising/atonic*, classes and to at least the *ccV*- and *ChV*- types in the *preaccent* class.²⁷

In (10) are proto-Korean reconstructions of verbs of each of these types. The (non-distinctive) prominence on the last syllable is marked by acute accent under the assumption that it bore high pitch, which may have been a concomitant of stress or may itself have been the “prominence” reconstructed by Ramsey. In the MK and SKS forms, diacritics represent tone markings as used elsewhere in this paper. Ramsey does not address the role that suffixes played in verbal prosody in his reconstruction of proto-Korean. I put a suffix in parentheses with no prosodic marking, assuming that proto-Korean, like Middle and Modern Korean, required suffixes on verbs.²⁸

(10)	SKS class	proto-Korean	MK	SKS	
	atonic	*capú-(ta)	càp-tá	cáp-tà	‘catch’
	rising/atonic	*tobú-(ta)	tõ:p-tá	tòp-tá	‘help’
	ccV preaccent	*pusú-(ta)	psú-tá	ssú-tá	‘use’
	ChV preaccent	*tuHí-(ta)	thí-tá	chí-tá	‘strike’

The *H for the second root consonant of the ChV *preaccent* verb is from Ramsey (1991:230-231), who says “a voiceless fricative may not be reconstructable for Proto-Korean. Nevertheless, it seems clear that the source of aspiration in these clusters had to have been some sort of voiceless velar obstruent.”

²⁶ Following Ramsey, I will continue to refer to the reconstructed situation as “proto-Korean”, though this probably conflates several stages of Korean history in terms of when various changes took place, e.g. vowel syncope, changes affecting consonant phonation types, development of tensed and aspirated consonants from consonant clusters, reinterpretation of (the high pitch of) stress as tone, etc.

²⁷ In §3.6, I briefly discuss a group of verbs for which Ramsey (1975/1991) sets up a Class 1b/7. Instead of the H tone on *-úmyén*-type suffixes in MK, this class of verbs had L, i.e. *-ùmýén*. Ramsey (1975:259) argues that, in MK, the H vowel was part of the suffix, whereas the L vowel was part of the verb stem, i.e. Class 1b/7 verbs were underlyingly disyllabic. Ramsey (1975:265) proposes a set of ordered rules to account for the MK prosodic outcomes, an analysis that he does not pursue in Ramsey (1991). It is not clear how this plays out in the history leading to SKS prosody. As noted in §3.6, all the verbs of this class now fall into regular prosodic classes, probably through analogical realignments.

²⁸ Accepting Ramsey’s reconstructed prosody with non-distinctive prominence on the last syllable of a word, a likely possibility would be that the prominence was actually on the suffix of suffixed words, which would include every verb form. Thus, for example, the proto-Korean form for the atonic verb in (10) would be *capu-tá. This would explain why all suffixes had H tone in MK, i.e. this was the reflex of proto-Korean word-final prominence. I will not pursue this idea here, since the main point of this discussion is to give a schematic picture of how verb tone classes may have arisen from a prior prosodic system where tone was not distinctive.

The reconstruction for proto-Korean in (10), the historical changes in (10-13), and the KYENGSANG ACCENT SHIFT predict the modern prosodies of all the verb types in (10):

(14)	Class	proto-K.	(11)	(12a~b)	(13)	other changes	KAS & (9b)
	atonic	*capú-ta *capú-myen	---	cap-tá ---	--- cap-úmyen	--- ---	cáp-tà cáp-ùmyèn
	rising/ atonic	*tobú-ta *tobú-myen	to:ˈbú-ta to:ˈbú-myen	to:ˈb-tá ---	--- to:ˈb-úmyen	tõ:p-tá tòw-úmyen	tòp-tá tów-ùmyèn
	preaccent (ccV)	*pusú-ta *pusú-myen	---	psú-ta psú-myen	--- --- ³²	ssú-ta ssú-myen	ssú-tá ssú-myén

The “other changes” column for the rising/atonic class is problematic. In SKS, these verb roots behave like rising class nouns when they form a closed syllable, i.e. they impose a H(H) floating tone on the following syllable(s), e.g. *tòp-tá*, *tòp-téla*). However, when they form an open syllable, they behave like atonic roots, i.e. in the example in (14), the KYENGSANG ACCENT SHIFT moves the H of the suffix onto the root, as would happen with atonic roots but not rising roots. I diagrammed this difference in the “other changes” column by retaining the long vowel + rising tone in *tõ:p-tá* but showing a shortened vowel and L tone in *tòw-úmyen*, as atonic roots would have. There is no evidence that this distinction ever existed, and in fact, all root vowels are short in modern SKS except in unsuffixed rising class monosyllables (see Table 1).

We have not accounted for three types of verbs in modern SKS: (1) CV monosyllables (where C is not a tensified or aspirated consonant), (2) preaccent class verbs other than ccV and ChV, and (3) rising class verbs.

Of type (1), Ramsey (1991:232) says, “[CV] verbs comprise a small number of basic verbs with extremely irregular accent [= irregular prosodic behavior—RGS]. The stems appear to have always been monosyllabic.” These verbs have been segmentally unchanged since proto-Korean, and since they already had irregular prosodic behavior by the time of MK, there is not much that we can say about why their prosody is the way it is.

The verbs of type (2) have roots of the types CV_{wc}- or CV_w[+sonorant]-, e.g. SKS *cháctá* ‘search’, *swúmtá* ‘hide’. Ramsey (1991:228) says, “The majority of the stems in this subclass seem to have been closed by sonorant ever since the Proto-Korean stage.” Presumably the relevance of this remark is that SYNCOPE (II) was blocked if C2 was a sonorant, and SYNCOPE (I) may have been blocked under the same circumstances. This does not, however, explain how these verbs ended up in the preaccent class. Preaccent is the result of the KYENGSANG ACCENT SHIFT moving the H tone of the initial syllable of a MK word to a floating position before the word. Following Ramsey’s reconstruction for proto-Korean, a verb like ‘hide’ would presumably have undergone the following evolution: **swumú-ta* SYNCOPE (II) > **swum-tá* in MK, but this verb was pronounced *swúm-tá* in MK. The initial H in MK is unexplained. It is as if such a verb knew that it SHOULD be syncoating the medial weak vowel, but could not, so instead, it syncoated the final vowel but put its H pitch on the medial vowel. This is, of course, silly, so we are left without a good explanation for why these few verbs (fewer than 10) belong to the preaccent rather than the atonic class.

Verbs of type (3) are verbs that belong to the rising class in all forms, i.e. in modern SKS Korean, the root has L tone and H is associated with the next two syllables. As

³² For CCV verbs, I am assuming that the vowel remains part of the verb stem. The writing system suggests this is the case, e.g. 쓰면 *ssú-myén* ‘if uses’ writes the vowel together with the verb consonant, though this argument is not particularly strong inasmuch as hankul always requires groupings of consonants and vowels that form single syllables and would therefore not allow a consonant to be written without a vowel.

pointed out in §3.3, this is a group of fewer than 10 verbs that seem to have no segmental characteristics that would define them as a class distinct from either the atonic or rising/atic classes. Neither Ramsey (1975:228) nor Ramsey (1991:235) provide any enlightenment as to why these few verbs might behave as an exceptional class. He essentially just notes that in MK, the root had two moras (= a long vowel) and a rising pitch (since bimoraicness and vowel length in MK were equivalent). The only thing that I can read from this is that the bimoraic syllable was inherited from proto-Korean rather than arising from (11) VOWEL LENGTHENING, but this does not help us understand why this should remain a distinct class. For modern SKS, it must simply be marked as an irregular type of the rising/atic class.

5.4. Tones of verb suffixes. The history of the prosody of monosyllabic suffixes from MK to modern SKS is fairly straightforward. There are two types: those of type (a) in Table 7, such as the *-ta* citation ending for all verbs, and those of type (c), such as *-nun* “processive modifier” (progressive aspect marker for relative clauses).

Type (a) all had H tone in MK, and as predicted by the KYENSANG ACCENT SHIFT, they have all become preaccent, such that their floating initial H now shows up on atonic stems (*cap-* ‘catch’ + H *-ta* → *cáp-tà*) but is cancelled by verb stems that contain a HL accent point (*káci-* ‘keep’ + H *-ta* → *káci-tà*) (see §6 for discussion of verb stems of more than one syllable).

Type (c), of which there are only three that I know of, are atonic. Two of these, *-nun* “processive modifier” and *-ken* “tentative” had L tone in MK, with the predicted atonic outcome in SKS,³³ and indeed, when added to an atonic root, the resultant words bear the LH pattern of a monomorphemic atonic word, e.g. *càpnún* (*kès*) ‘(thing) that I am catching’. Ramsey (1975:274) shows *-ten* “retrospective modifier” as having H in MK. In modern SKS, it behaves tonally like *-nun*, e.g. *càptén* (*kès*) ‘(thing) that I used to catch’. Yu (1964) does not list this affix as a separate entry, so I was unable to cross-check the tone. If, in fact, it did have H tone in MK, it may have analogically become atonic because of its functional similarity to *-nun*.

The *-a/-e-* initial vowel of the *-assta/-essta* “past indicative assertive” suffix in group (b) of Table 7 is historically the infinitive suffix, a monosyllabic suffix with H tone, and thus has the expected effect of all type (a) suffixes. The *-u-* of the remaining type (b) suffixes, as in *-umyen*, was discussed in the preceding section. This *-u-* bore H tone in MK. These suffixes have monosyllabic allomorphs without the *-u-*, all of which bear H tone like type (a) monosyllabic suffixes. In the disyllabic allomorphs of these suffixes, as in full words, MK tonal distinctions after the first H have been neutralized in modern dialects (see Table 9). By the KYENSANG ACCENT SHIFT, these suffixes have become preaccent, and, as expected, associate the floating H to an atonic root leaving L on the suffix, e.g. *cap-* + H *-umyen* → *cáp-ùmýèn* ‘if catches’.

All the tonic suffixes in (d) of Table 7 are multimorphemic. I have not tried to verify the existence of these suffixes by looking them up in a Middle Korean dictionary. Ramsey’s (1975:274-275) list shows some of them to have occurred in MK, some not. One group for which Ramsey does not list MK equivalents are a set of four that begin in *-nun*, e.g. *-núntèy* “processive (active verb)”.³⁴ As noted above, *-nun* itself is atonic. Assuming that the additional elements of the *-nun*-initial suffixes bore H in MK, the suffixes would have undergone the KYENSANG ACCENT SHIFT, creating an *initial H* class suffix, as we see in modern SKS. Ramsey gives the *-kena* “adversative” suffix with LH

³³ Jieun Kim views *-ken* as a shortened form of the disyllabic tonic suffix *-kénà*, as in *cápkénà màlkénà* ‘catch or not’.

³⁴ A number of suffixes look as if they are based on *-nun* or *-un*, which function as relative clause-final formatives. I find the situation with these suffixes quite confusing, particularly as used with active vs. stative verbs. The paired active/stative counterparts are shown with superscripts in Table 6.

tones in MK, which likewise would have yielded the initial H suffix seen in SKS, as in *càpkénà* ‘catch (or not)’.

Others, such as *-télà* ‘retrospective assertive’ and those with initial *-kéyss-* ‘future’ (which have initial H in Hamkyeng, which has not undergone an accent shift) are problematic. One would have expected them to have become preaccent by the KYENGSANG ACCENT SHIFT, but they behave as initial H and thus contain a HL accent point. I do not know enough about the history of Korean or the morphology of verbal affixes to say more about these or other tonic verbal affixes.

6. Verbs of More than One Syllable

As mentioned in earlier sections, most native monomorphemic verbs in Korean have monosyllabic roots. The preceding sections have described the basic prosodic system of South Kyengsang Korean, provided diagnostics for categorizing monosyllabic verbs into prosodic classes, and laid out the historical sources and evolution of these classes. Korean does have a considerable number of disyllabic verbs, many of which are, at least from MK onward, monomorphemic.

Ramsey (1975:271-273) provides a list of about 50 disyllabic verbs with their Middle Korean roots and their South Hamkyeng and South Kyengsang reflexes. Not surprisingly, they fall into the *atonic*, *initial H*, *preaccent*, and *rising* classes of the disyllabic nouns seen in Table 1, and they behave in predictable ways with suffixes. I will briefly illustrate and discuss each of these classes.

6.1. Atonic disyllabic verbs. Almost all the verbs of this class that Ramsey (1975:269) lists are what he calls “*l*-doubling stems”.³⁵ The *l*-doubling verbs are referred to as “irregular predicates in *-lu*” in modern pedagogical grammars. They have a final *-u* with all suffixes except those with the harmonizing vowel *-a/-e*, where they have a double *-ll-*. All verbs of this type are of the *atonic* class in modern SKS. Ramsey (1975:262-263) lists a few additional verbs that, historically, are derived with “the post verb [-*WÁ/-Wù*] used to derive descriptive verbs from action nouns.” This post-verb bore L tone in MK, and when affixed to a L monosyllabic verb root, the result was an atonic disyllabic root. It is unlikely that these verbs are viewed as bimorphemic in modern Korean, so I include examples in Table 11.

Table 11. *Atonic* disyllabic verbs in SKS Korean

CITATION	<i>-tela</i>	<i>-(u)myen</i>	INFINITIVE	
kàlútà	kàlútélà	kàlúmyèn	kállà	‘split’
pùlútà	pùlútélà	pùlúmyèn	púllè	‘sing’
kìppútà < *kisk-Wù-	kìppútélà	kìppúmyèn	kíppè	‘be pleased’
sùlphútà < *sùlh-Wù-	sùlphútélà	sùlphúmyèn	sùlphè	‘be sad’

The CITATION form, illustrating the effect of monosyllabic preaccent suffixes, receives a H on the stem final *-u* because of the floating H of the preaccent suffix. The tonic suffix, *-télà*, itself has no effect on an atonic stem, but the constraint *#LL in (1) forces a H on the second syllable of the stem. The vowel *-u-* in *kàlúmyèn*, etc. in

³⁵ The only non-*l*-doubling verb of this class that Ramsey (1975:271) lists is MK *hùli-* ‘be muddy’. For Jieun Kim, this is an initial H verb (see §6.2). Ramsey (1991:236) mentions Class 8, an “irregular class or some 35 verbs [that] had a peculiar morphology.” This class seems to correspond to the class of *atonic* disyllabic verbs, but he says very little about them.

the *-(u)myen* column must be the stem vowel of the verb, not the vowel of the suffix. This column represents suffixes of type (b) in Table 7. These suffixes are preaccent, i.e. they have an initial floating H as in /H (u)myen/. There are two possible interpretations of the observed tone pattern: (1) the suffix has two lexical allomorphs, /H *umyen*/ and /H *myen*/, the former used after consonants, the latter after vowels; (2) the suffix has only the underlying form /H *umyen*/, and by convention, in a sequence V₁-*u*, the *u* is always elided, even if V₁ is itself *u*.

In the INFINITIVE column, which also has a preaccent suffix, /H *a/e*/. The verb stem vowel *-u* is elided and the floating H docks to the initial syllable of the verb stem. Using a rule-based description, we can account for *-(u)myen* suffixes and INFINITIVES as in (15).³⁶

(15) UNDERLYING	/kippu-H e/	/kippu-H myen/	/kippu-H umyen/
ELISION	kipp-H e	---	kippu-H myen
FLOATING H DOCKING	kípp-e	kippú-myen	kippú-myen
DEFAULT L ASSOCIATION	[kíppè]	[kippú-myèn]	[kippúmyèn]

By eliding the vowel of the verb in the INFINITIVE, the floating H docks to the first syllable of the root, as it does with monosyllabic roots. However, if the stem vowel of the verb had been elided by the suffix *-umyen*, the floating H would have docked on the first syllable as well, giving **kíppùmýèn*.

The real explanation for the facts, of course, is the historical one discussed in §5.3, viz. the H tone *-u-* of MK *-ú-myén* was originally the final vowel of the verb, and the suffix was *-myén* for all verbs. This explains the difference in tone between *cápùmýèn* ‘if catches’ < **cápú-myén* and *kàlúmýèn* ‘if splits’ < **kàlù-myén*. What is not explained is why the *-u* of proto-Korean **capú-ta* was syncopated to ultimately give SKS *cáp-tà*, whereas the final stem vowel of *?*kalù-ta* was not syncopated, such that the vowel is still heard in SKS *kàlútà*. A full discussion is irrelevant to a description of modern SKS prosody and exceeds my grasp of Korean historical phonology. Suffice it to say that Ramsey (1975:269) provides an account with a reconstruction of the form **kalul*, i.e. a stem with a “doubled” *-l*, which plays a role in both types of anomalies of these verbs in modern Korean: the lexical stem final *-u* and the doubling of *-l* with *-a/-e* suffixes.

6.2. Initial H disyllabic verbs. This class has no counterpart among monosyllabic verb stems. Initial H stems for both nouns (Table 1) and verbs would require MK antecedents with at least two syllables, because the initial H is a result of the KYENGSANG ACCENT SHIFT moving a H from the second syllable to the first. Ramsey (1975:271-272) provides a list of 23 such verbs which would seem to be monomorphemic in modern Korean.³⁷ On page 263 he gives an additional example derived with the postverb *-Wu*, mentioned in §6.2, which comes out initial H in SKS, viz. *wúsùptà* ‘be funny’ < **wùzú-Wù-*. Eleven, i.e. more than half, of the verbs in Ramsey’s list end in *-i* (in addition, as noted in fn. 35, *hùli-tà* ‘be muddy, turbid, cloudy’ is initial H in SKS), suggesting that this *-i* may be a no longer productive derivational suffix. Finally, two verbs of this class, given by Ramsey as MK */nwùlúl-/* ‘be yellow’ and */phùlúl-/* ‘be blue’ are what Ramsey (1975:269) calls “*l*-inserting” stems.³⁸ These differ from “*l*-doubling” stems seen in §6.1 in having H tone

³⁶ I illustrate with one of the non-*l*-doubling stems. The *l*-doubling stems would require an *l*-DOUBLING rule particular to this class of verbs, which is why traditional Korean descriptive works refer to them as “irregular”.

³⁷ Of Ramsey’s list of 23 verbs that had LH tones in MK, he separates out five as having atonic reflexes in SKS. This is consistent with Jieun Kim’s usage, who treats these five as atonic, but the others as initial H.

³⁸ Modern Korean, including SKS, does not seem to use the form for ‘yellow’ that would come directly from the MK form. Jieun Kim’s citation form is *nwùléhta*, an atonic verb with a final stem consonant *-h*,

on the second syllable in MK and in not deleting the *-u-* with *-a/-e* suffixes. Table 12 gives examples with the diagnostic suffixes.

Table 12. *Initial H* disyllabic verbs in SKS Korean

CITATION	<i>-tela</i>	<i>-(u)myen</i>	INFINITIVE	
húlità	húlitàlè	húlìmyèn	húlyè	‘be cloudy, turrbid’
sámkàtà	sámkàtèlè	sámkàmyèn	sámkà	‘be cautious’
phúlùtà	phúlùtèlè	phúlùmýèn	phúlùlè	‘be blue’
wúsùptà	wúsùptèlè	wúsùwùmýèn	wúsùwè	‘be funny’

As expected, the HL accent point on the root causes any following lexical H to be highly attenuated or lost altogether. The only segmental outcome seen here that is not the result of productive rules operating elsewhere in the verbal system is the INFINITIVE for ‘be blue’. Compare *phúlùlè* with the atonic infinitive *pùllè* ‘to sing’. The historical developments of the two forms are laid out in (16).

RECONSTRUCTED	*phùlùl-é ‘be blue’	*pùlùl-é ‘sing’
SYNCOPE	--- (target V has H)	pùll-é (target V has L)
TO NEUTRALIZATION	phùlùl-e	pùll-é
KYENGASANG ACCENT SHIFT	phúlùl-è	pùll-è

6.3. Preaccent disyllabic verbs. Ramsey (1975:272-273) provides 11 disyllabic verbs that had initial H,³⁹ whose expected reflex class in SKS is preaccent. In addition, he gives one verb derived with the postverb *-WÁ* suffixed to an initial H root that is preaccent in SKS, viz. *kúlíptà* ‘be cherished’ < **kúli-WÁ*-. Most of Ramsey’s examples end in *-i* or *-ul*, suggesting an origin in derived forms, but even by the time of MK, they were probably all taken as monomorphemic. A few examples with the diagnostic suffixes are seen in Table 13.

Table 13. *Preaccent* disyllabic verbs in SKS Korean

CITATION	<i>-tela</i>	<i>-(u)myen</i>	INFINITIVE	
chécítà	chécítèlè	chécímýèn	chécyé	‘droop’
kánúltà	kánúltèlè	kánúlmyèn	kánúlè	‘be thin’
kúlíptà	kúlíptèlè	kúlíwùmýèn	kúlíwè	‘be cherished’

These verbs all behave as predicted by regular rules. Preaccent roots, when initial in a phrase, impose H on the first two syllables of the phrase. All preaccent roots act as if they have an accent point, even when the root itself does not have a HL drop (see fn. 11), and thus subsequent H’s are attenuated or wiped out.

6.4. Rising disyllabic verbs. These are words that had a R tone and a long vowel on the initial syllable in MK, though they now have an initial L and a short vowel in SKS (aside from monosyllables with no affixes—see Table 1). Ramsey (1975:273) lists five verbs of

which comes from a reduced form of the verb *ha-ta* ‘do’ that is seen on many stative verbs. The forms for ‘be blue’ do have the historically predicted forms, however. See Table 12.

³⁹ Two of these verbs are transparent compounds, which Jieun Kim treats as atonic, viz. *nàkàtà* ‘go out’ and *nàótà* ‘come out’.

this type,⁴⁰ which, like most of the initial H (§6.2) and preaccent (§6.3) verbs, end in *-i* or *-Vi*, suggesting that at some historical level they were probably derived. He also gives (page 262) one verb with the postverb *-WÁ* of this class, *nòlláptá* ‘be surprising’ < **nòlla-WÁ*.

Table 14. *Rising* disyllabic verbs in SKS Korean

CITATION	<i>-tela</i>	<i>-(u)myen</i>	INFINITIVE	
nèmchítá	nèmchítélà	nèmchímyén	nèmchyé	‘overflow’
mòcílta	mòcítélà	mòcílmyén	mòcílé	‘be wicked’
nòlláptá	nòlláptélà	nòlláwúmyèn	nòlláwá	‘be surprising’

In Table 2, I proposed that *rising* class words have a doubly linked H that associates with the second and third moras of a word (which includes the stem plus any suffixes). *Rising* disyllabic verbs behave in this way.

7. Phrasing of Verbs with Preceding Consituents

I audio- and videorecorded Jieun saying disyllabic nouns of all tone classes with monosyllabic verbs of all classes, each verb with three suffixes: preaccent CV (*-ci* ‘assumed knowledge’ for most verbs), tonic (*-nunta* ‘processive (plain style) for most verbs), preaccent *-u-* initial (*-umyen* ‘conditional’ for most verbs). Each N+V pairing was recorded four times: (1) *-lul* case marked noun phrased with the verb; (2) non-case marked noun phrased with the verb; (3) *-lul* case marked noun not phrased with the verb; (4) non-case marked noun not phrased with the verb. I also recorded *nwkwu-* ‘someone; who’, case marked and not case marked. The indefinite obligatorily is not phrased with the verb because phrasing puts focus on the object, which is not possible with an indefinite object: **it was someone that I caught*, where *someone* is indefinite non-specific. Use of the question word imposes a ‘hat’ interrogative intonational pattern over the whole phrase, regardless of case marking. It also requires different verb suffixes. Finally, I recorded subject noun phrases with the atonic verb only. These require case marking and have the same prosodic properties as case-marked objects.

Table 15 shows non-case-marked and case-marked objects phrased with a verb. Monosyllabic nouns of all classes are also included. These should be compared with the N+N constructions in Table 3. The phrasing works in essentially the same way as in N+N constructions and is fairly straightforward, except for preaccent and rising verbs following non-case-marked rising nouns. The same questions arise in N+N constructions.

Table 15. Objects, case-marked and not case-marked, phrased with verbs

Tone class, # syllables			cáptá (atonic) ‘catch’	cáctá (preaccent) ‘seek’	tòptá (R/A) ‘help’
‘initial H’ (2)	sásùm HL	‘deer’	sásùm càpcì HL LL sásùmùl càpcì HLL LL	sásùm càccì HL LL sásùmùl càccì HLL LL	sásùm tòpcì HL LL sásùmùl tòpcì HLL LL

⁴⁰ Ramsey’s SKS representations show them all to be of the rising class as well. Of the five, Jieun Kim does not use one (*cāsì-* ‘partake’), treats one as atonic (*pithúltà* ‘twist’), and one as initial H (*kkéltà* ‘shun’).

“preaccent” (1)	só H	‘cow’	só cápcì H HL sólúl càpcì HH LL	só cáccì H HL sólúl càccì HH LL	só tópcì H HL sólúl tòpcì HH LL
“preaccent” (2)	thókkí HH	‘rabbit’	thókkí càpcì HH LL thókkílùl càpcì HHL LL	thókkí càccì HH LL thókkílùl càccì HHL LL	thókkí tòpcì HH LL thókkílùl tòpcì HHL LL
“atonic” (1)	mál H	‘horse’	màl cápcì L HL málùl càpcì HL LL	màl cáccì L HH málùl càccì HL LL	màl tópcì L HH málùl tòpcì HL LL
“atonic” (2)	tòtúk LH	‘thief’	tòtúk cápcì LH HL tòtúkùl càpcì LHL LL	tòtúk cáccì LH LL tòtúkùl càccì LHL LL	tòtúk tópcì LH HH tòtúkùl tòpcì LHL LL
“rising” (1)	sày: R:	‘bird’	sày cápcì L HH sàylùl cápcì LH HL	sày cáccì L HH sàylùl cáccì LH HH	sày tópcì L HH sàylùl tópcì LH HH
“rising” (2)	sàlám LH	‘person’	sàlám cápcì LH HH sàlámùl càpcì LHH LL	sàlám cáccì LH HH sàlámùl càccì LHH LL	sàlám tópcì LH HH sàlámùl tòpcì LHH LL

Table 15 is meant as a sample. The recorded data, esp. unphrased utterances and questions require a lot of further work.

8. Conclusion

To be written some day!

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Functional equivalents of “sentence enders” for active and stative verbs

These relate to the verb suffixes in Table 7. I elicited them mainly for my own elicitation. Although it looks like, historically at least, the affixes *-nun* and *-(u)n* are base formatives to which other affixes can be added, in terms of actual use, they do not combine in predictable ways to form compositional constructions.

	C final active	V final active	C final stative
Progressive S-ender	càp-núntà 잡는다	cá-ntà 잔다	*
Perfective S-ender	cáp-àss-tà 잡았다	c-ásstà 잡았다	kót-tà 곶다
Past perf. S-ender	càp-áss-ésstà 잡았었다	c-áss-ésstà 잡았었다	kòt-ásstà 곶았다
“nuntey” S-ender	càp-núntèy 잡는데	cá-núntèy 자는데	kót-ùntèy 곶은데
“nunkwuna” S-ender	càp-núncwúnà 잡는구나	cá-núncwúnà 자는구나	kòt-kwúnà 곶구나
“nunya” S-ender	càp-núnyà 잡느냐	cá-núnyà 자느냐	kót-ùnyà 곶으냐
Progressive relative	càp-nún (sàlám) 잡는 (사람)	cá-nún (sàlám) 자는 (사람)	*
Perfective relative	cáp-ùn (sàlám) 잡은 (사람)	cà-n (sàlám) 잔 (사람)	kót-ùn (kès) 곶은 (것)
Retrospective relative	càp-tén (sàlám) 잡던 (사람)	cá-tén (sàlám) 자던 (사람)	kòt-tén (kès) 곶던 (것)