

Middle Korean *W*-, *z*-, and *t/l*-Verb Stems

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The Middle Korean¹ (MK) *W*-, *z*-, and *t/l*-verb stems are segmentally irregular. When a following enclitic begins with a vowel, these stems have as their final consonant *W*, *z*, or *l*², respectively, but when the enclitic begins with a consonant, they end in *p*, *s*, or *t*. In this paper it will be shown that these stems have a canonical shape which is different from stems ending in /*p,s,t*/, and therefore that the consonants *W*, *z*, and *t/l* are here in complementary distribution with /*p,s,t*/.

W-, *Z*-, and *t/l*-verbs fall into four different MK accent classes. These four accent classes can be defined as follows:

Class 1: The first syllable of the verb is always low pitched.

Class 2: The first syllable of the verb is always high pitched.

Class 3: The first syllable of the verb is always rising pitched.

Class 4: The first syllable of the verb is marked with a low pitch if the enclitic begins with a vowel, but is marked with a rising pitch if the enclitic begins with a consonant.³ Example number 1 illustrates the accentual behavior of a typical Class 4 verb.

(1) a. *tèWŭmyén* "if it is hot,..." (*Welin sekpo* 9.23)

¹ "Middle Korean" is used here to mean the body of Korean language texts written in the fifteenth and sixteenth centuries. Middle Korean forms are transcribed with a modified Yale Romanization which is intended to mirror the original script as closely as possible. Note especially the following mapping relationships which are not included in standard Yale Romanization conventions:

MK symbol	Romanization symbol
ㅁ	W
△	z
—	ʒ
●	φ
⊥	wφ

In addition, MK pitches (represented by "side dots" (旁點) in the MK texts) are transcribed according to the following conventions: A high pitch is represented by an acute accent mark (´) over the vowel of the syllable; a low pitch is represented by a grave accent mark (`) over the vowel; and a rising pitch will be represented by both an acute accent mark and a grave accent mark placed together (ˇ) over the vowel. No marks over the vowel of a syllable of an isolated lexical item should be taken to mean that the "side dots" are there uncertain or conditioned by context.

² The Seoul reflexes in these cases are *w*, *φ* (zero), and *l*. (Cf. Martin 1954: 28-31.)

³ The rising pitch also appears before the honorific *-ŏsi/ŏsi-* which is a morpheme beginning with an unaccented vowel. This problem is not discussed in this paper because of space considerations. (But see Ramsey 1975.)

b. tǝpkéy "hotly" (*Myopep yenhwa kyeng* 2.242)

Below is a list of the MK *W*-, *z*-, and *t/l*- verb stems separated by accent class. (Stem shapes will be adjusted later.)

Glosses are given underneath each stem.

W-verb stems

<u>Class 1</u>	<u>Class 2</u>	<u>Class 3</u>	<u>Class 4</u>
nwǝW-	chíw-	kwǝW-	teǝW-
"lie down"	"be cold"	"be pretty"	"be hot"
mǝyW-		swǝyW-	twǝW-
"be spicy"		"be easy"	"help"
mǝyW-		syǝlW-	kwǝw-
"be haateful"		"be painful"	"bake"
			iW-
			"be confused"
			kǝlW-
			"line up"
			pǝlW-
			"trample"
			yelW-
			"be thin"

z-verb stems

<u>Class 1</u>		<u>Class 4</u>	
pǝz-	"swell"	niz-	"continue"
pǝz-	"pour"	az-	"snatch"
cǝz-	"spin (thread)"	wǝz-	"laugh"
		ciz-	"make, build"
		cwǝz-	"pick up"
		naz-	"improve"

t/l-verb stems

<u>Class 1</u>		<u>Class 4</u>	
tǝt-	"hear"	ket-	"walk"
		kyet-	"weave"
		kit-	"draw water"
		nwǝt-	"be scorched"
		mwǝt-	"ask"
		pwǝt-	"increase"
		sit-	"load"

Let us first examine the accentual differences between the *W*-, *z*-, and *t/l*-verbs in

Class 1 and those in Class 4. As was mentioned above, Class 1 verbs always begin with a low pitched syllable, whereas Class 4 verbs only begin with a low pitched syllable before enclitics beginning with a vowel; before enclitics beginning with a consonant, Class 4 verbs begin with a rising pitched syllable. But these two verb classes have an accentual difference after the first syllable: When a enclitic initial ϕ/ψ^4 follows a Class 1 verb stem ending in W, z, or t/l, that second-syllable vowel is marked with a low pitch; but when the same vowel follows a Class 4 stem, it is marked with a high pitch. Here are some examples illustrating this phenomenon.

- (2) a. nw ψ W-“lie down” + - ψ myé (conjunctive).....→nw ψ W ψ myé (*Welin sekpo* 1.17)
 b. w ψ z-“laugh” + - ψ myé (conjunctive).....→w ψ z ψ myé (*Sekpo sangcel* 6.24)
 (3) a. t ψ t-“hear” + - ψ l (modifier).....→t ψ l ψ l (*Hwunmong cahoy* III 12)
 b. mw ψ t-“ask” + ψ l (modifier).....→mw ψ l ψ l (*Hwunmong cahoy* III 32)

This pitch difference in the second syllable between these Class 1 and Class 4 verbs is consistently maintained in MK texts. One conceivable explanation for this phenomenon would be that the vowel ϕ/ψ somehow “copies” or “attracts” the pitch of the preceding syllable. But according to this hypothesis the vowel should be low pitched after all low pitched (i.e. Class 1) stems, and this is most decidedly not the case; in fact, after most Class 1 stems the vowel ϕ/ψ is marked with a high pitch.

- (4) mit-“believe” + - ψ myé (conjunctive) mit ψ myé (*Yong pi e chen ka* 16)

The MK Class 1 verb stems fall into two sub-classes according to whether a following ϕ/ψ is high pitched or low pitched. Below is a list of these two sub-classes with examples to illustrate the pitch of the vowel in the second syllable. Unless specifically noted otherwise, the examples are all taken from the *Hwunmong cahoy*.

Accent Class 1a (second-syllable vowel always high pitched)

kàsk- “cut”	kàsk ϕ l (<i>Welin sekpo</i> 1.17)
kàph- “repay”	kàph ψ l
kw ψ t- “be straight”	kw ψ t ϕ l
kw ψ p- “be curved”	kw ψ p ψ l
kw ψ c- “insert”	kw ψ c ψ l
kw ψ t- “harden”	kw ψ t ψ l
nàsk- “fish”	nàsk ψ l
nw ψ k- “melt”	nw ψ k ψ l
n ψ lk- “be, grow old”	n ψ lk ψ l
n ψ c- “be late”	n ψ c ψ l
nik- “ripen”	nik ψ l
nìlk- “read”	nìlk ψ l
nìp- “wear”	nìp ψ l

⁴ The choice between these two vowels is governed by rules of vowel harmony. (Cf. Yi Ki-mun 1972: 140-142.)

tàt- "close"	tàtɔl
màk- "stop up"	màkɔl
mèk- "eat"	mèkɔl
mwüt- "bury"	mwütɔl
mit- "believe"	mitɔl
mòlk- "be clear"	mòlkɔl
pòlk- "be bright"	pòlkɔl
sèk- "rot"	sèkɔl
sèsk- "mix"	sèskɔl
swòs- "spurt out"	swòsɔl
àlh- "suffer"	àlhóní (<i>Nungem kyeng</i> 5.74)
ilh- "lose"	ilhúmyé (<i>Nungem kyeng</i> 5.44)
càp- "grasp"	càpɔl
cwòch- "chase"	cwòchɔl
cwük- "die"	cwükɔl
nyèth- "be shallow"	nyèthúmyé (<i>Nungem kyeng</i> 3.87)

Accent Class 1b (second-syllable vowel is low pitched)

nàh- "bear"	nàhɔl
nyèh- "put in"	nyèhúmyé (<i>Kwan-um kyeng</i> 12)
nwòh- "put"	nwòhɔl
pìh- "sprinkle"	pìhóní (<i>Wel in chen kang ci kok</i> 69)
cèh- "fear"	cèhùlssóy (<i>Nungem kyeng</i> 1.87)
tàh- "touch"	tàhòntóy (<i>Nungem kyeng</i> 2.76)
àc-~ànc- "sit"	àncɔl
yèc-~yènc- "place"	yèncóní (<i>Yong pi e chen ka</i> 7)
cìh- "attach"	cìhúmyén (<i>Welin sekpo</i> 2.49)
nwỳW- "lie down"	nwỳWùn (<i>Yong pi e chen ka</i> 84)
mỳyW- "be spicy"	mỳywòl ⁵
mỳyW- "be hateful"	mỳyWùn (<i>Welin sekpo</i> 9.17)
pỳz- "swell"	pỳzùl (<i>Myopep yenhwa kyeng</i> 2.169)
pỳz- "pour"	pỳzùl
còz- "spin (thread)"	còzɔl
tỳt- "hear"	tỳlùl

This accentual difference between Classes 1a and 1b cannot have been due to phonological conditioning of their respective segmental structures. For one thing, there are two MK Class 1b stems whose final consonant is /c/: àc-~ànc- "sit" and yèc-~yènc-. Yi

⁵ Remember that this form is taken from the *Hwunmong cahoy*, a text dating from the first half of the sixteenth century. By the time of the publication of this text, the historical change *W*>*w* had already taken place. It should also be noted that the distinction between *ɔ* and *ɛ* in non-initial-syllable position was also breaking down by the time this text was published.

Ki-mun (1964) has shown that the forms *âc-* and *yêc-* are the older forms of the alternating pairs,⁶ and that the occurrences of /n/ were the result of nasal insertion. These Class 1b stems therefore contrast with Class 1a stems ending in /c/, such as *kwôc-* "insert" and *nûc-* "be late". Furthermore, there are many Class 1b stems whose final consonant is /h/, and these contrast with Class 1a stems such as *âlh-* "suffer", *ilh-* "lose", and *nyêth-* "be shallow".

I claim that instead there are really two different vowels in question here: The vowel which follows Class 1a stems in the above list is an integral part of the enclitic ending (such as *-ôl/ûl -ôni/ûni, -ômyé/ûmyé*) and always has an accent; the second-syllable vowel in the Class 1b forms, however, is an integral part of the stem. Therefore proper segmentation of the Class 1b verb forms gives the following two-syllable stem shapes:

nâhò- "bear"	nyèhû- "put in"
nwôhò- "put"	pihò- "sprinkle"
cèhò- "fear"	tâhò- "touch"
âcò-~âncò- "sit"	yècò-~yèncò- "place"
nwûwû- "lie down"	cihû- "attach"
môywô- "be spicy"	mûyWû- "be hateful"
pûzû- "swell"	pûzû- "pour"
côzô- "spin (thread)"	tûtû- "hear"

Let us look at some more evidence which supports the proposed two-syllable-stem analysis. It was noted above that the stems *âcò-* "sit" and *yècò-* "place" underwent nasal insertion. This nasal insertion before *c* only took place in case that consonant occurred morpheme-inin a ternal intervocalic position;⁷ it did not occur, for example, before the stem-final *c* of such verbs as *nûc-* "be late". Nasal insertion in the forms for "sit" and "place" would have been quite anomalous if the *c* in those stems were not intervocalic.

According to Yi Ki-mun (1972: 149) *nâhâ-* "be ar (young)" is derived from the verb *nâ-* "be realized, come out". and the verb *cihû-* "attach (or give one, a name)" is derived from the verb *ci-* "to support, carry on the back". It is probable that this derivational postverb *-hò/hû-* is a variant form of the ubiquitous verb *hò-* "do", and that all the Class 1b stems ending in *-hò/hû-* at least etymologically contain that postverb.

The verb stem *mûyWû-* "be hateful" can be most clearly shown to have two syllables. This stem is composed of the verb stem *mûy-* "hate" plus the morpheme *-Wò/Wû-*, a postverb which derives descriptive verbs from action verbs.

mûy- "hate" + *-wû-* → *mûyWû-* "be hateful"

(Cf. Yi Ki-mun 1972: 151.) The verb *môywô-* "be spicy" is most likely also derived by the postverb *-Wò/Wû-* from an action verb.

The postulation of these two-syllable stems requires that there be three rules in the

⁶ As proof, Yi Ki-mun (1974) adduces MK philological evidence, Chinese transcriptions, and most importantly, modern dialect evidence from Ceycwu.

⁷ This phenomenon is discussed at length in Ramsey 1975, §2.5.

MK phonology: (1) a rule which deletes an enclitic-initial $-\rho/\zeta$ - when it is preceded by a vowel. (2) a rule which deletes a stem-final $-\rho/\zeta$ - when it is followed by the infinitive ending $-\acute{a}/\acute{é}$. (3) a rule which deletes a stemfinal $-\rho/\zeta$ - when it is followed by a consonant.

That the first rule is already required in the phonology is shown by the following examples:

(5) $c\grave{i}$ - "carry on the back" + $-\acute{g}l$ (modifier) $\dots\dots\rightarrow c\grave{i}l$ (*Hwunmong cahoy* III 24)

(6) $n\grave{a}$ - "be realized" + $-\acute{q}my\acute{e}$ (conjunctive) $\dots\dots\rightarrow n\grave{a}my\acute{e}$ (*Welin sekpo* 1.27)

The following examples illustrate the second rule:

(7) $\grave{a}lph\grave{o}$ - "be painful" + $-\acute{a}$ (infinitive) $\dots\dots\rightarrow \grave{a}lph\acute{a}$ (*Nungem kyeng* 5.48)

(8) $isp\grave{u}$ - "de tired" + $-\acute{e}$ (infinitive) $\dots\dots\rightarrow isp\acute{e}$ (*Nungem kyeng* 2.89)

The need for the third rule is demonstrated by the behavior of the morpheme $-W\grave{\rho}/W\grave{\zeta}$ -, the postverb used to derive descriptive verbs from action verbs. (Cf. above.) When this postverb is suffixed to a verb stem ending in a vowel or /y/, and is itself followed by a consonant, its vowel is deleted; that is, the vowel ρ/ζ is deleted by Rule (3). Here are some attested examples of descriptive verbs derived by this postverb:

$k\grave{o}sk$ - "make an effort" + $-W\grave{\rho}$ - $\dots\dots\rightarrow k\grave{o}sp\grave{o}$ - "be hard, trying"

$kw\grave{o}lh$ - "(one's stomach) gets but partly filled" + $-W\grave{\rho}$ - $\dots\dots\rightarrow kw\grave{o}lph\grave{o}$ -
"(one's stomach is) empty"

$k\grave{u}l\acute{i}$ - "miss, long for" $-W\grave{\rho}$ - $\dots\dots\rightarrow k\grave{u}l\acute{i}W\grave{\rho}$ - "be missed, cherished"

$k\acute{i}sk$ - "rejoice over" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow k\acute{i}sp\grave{u}$ - "be pleased"

$nw\grave{o}lla$ - "be surprised" + $-W\grave{\rho}$ - $\dots\dots\rightarrow nw\grave{o}llaW\grave{\rho}$ - "be surprising"

$tw\grave{u}l\acute{i}$ - "consider frightening" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow tw\grave{u}l\acute{i}W\grave{\zeta}$ - "be frightening"

$m\grave{u}y$ - "hate" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow m\grave{u}yW\grave{\zeta}$ - "be hateful"

$m\acute{i}t$ - "believe" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow m\acute{i}tp\grave{u}$ - "be trustworthy"

$p\grave{a}ch$ - "busy oneself with" + $-W\grave{\rho}$ - $\dots\dots\rightarrow p\grave{a}sp\grave{o}$ - "be busy"

$s\grave{u}lh$ - "grieve over" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow s\grave{u}lph\grave{u}$ - "be sad"

$\acute{a}lh$ - "suffer from" + $-W\grave{\rho}$ - $\dots\dots\rightarrow \acute{a}lph\grave{o}$ - "be painful"

$w\grave{u}z\acute{u}$ - "laugh" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow w\grave{u}zW\grave{\zeta}$ - "be funny"

$\acute{i}ch$ - "tire" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow isp\grave{u}$ - "be tired"

$c\grave{e}h\grave{o}$ - "fear" + $-W\grave{\zeta}$ - $\dots\dots\rightarrow c\grave{e}ph\grave{u}$ - "be fearsome"

When an enclitic-initial $-\rho/\zeta$ - immediately follows one of these descriptive verb stems, it is deleted (by Rule (1)), and the verb-stem-final $-\rho/\zeta$ - appears in the surface form.

(9) $\acute{a}lph\grave{o}$ - "be painful" + $-\acute{q}l$ (modifier) $\dots\dots\rightarrow \acute{a}lph\acute{q}l$ (*Hwunmong cahoy* II 32)

(10) $m\grave{u}yW\grave{\zeta}$ - "be hateful" + $-\acute{u}n$ (modifier) $\dots\dots\rightarrow m\grave{u}yW\acute{u}n$ (*Welin sekpo* 9.17)

But when an enclitic-initial consonant directly follows these stems, there are two different outcomes. If the stem-final $-\rho/\zeta$ - is immediately preceded by an obstruent cluster, the vowel is not deleted and appears in the surface form.

(11) $kw\grave{o}lph\grave{o}$ - "(one's stomach) is empty" + $-k\grave{e}t\acute{u}n$ (retrospective) $\dots\dots\rightarrow kw\grave{o}lph\grave{o}k\grave{e}t\acute{u}n$
(*Kumang kyeng sam ka hay* 3.42)

(12). *kispŭ*- “be pleased” + *-tá* (indicative assertive)→ *kispŭtá* (*Sekpo sangcel* 13.7)
If the stem-final *-ŕ/ŭ*- is followed by a consonant but not preceded by an obstruent cluster, that vowel is deleted (by Rule (3)).

(13) *twŭlíWŭ*- “be frightening” + *-téní* (retrospective continuative)→ *twŭlíptèní*
(*Welin sekpo* 7.5)

(14) *mŏyWŏ*- “be spicy” + *-kwŏ* (gerund)→ *mŏyŭkwŏ* (*Myŏpŏp yenhwa kyeng* 1.130)
Not only Class 1b stems, but also Class 4 stems end in a vowel. But these stems differ from the Class 1b stems in that the final vowel is accented: ;*ŕ/ŭ*-. When this final, accented vowel is deleted before a consonant-initial enclitic (by Rule(3)), the accent becomes incorporated into the preceding syllable which is then compensatorily lengthened and takes on a rising pitch.⁸ Since the MK rising pitch syllables are composed of one low pitched mora plus one high pitched mora (cf. Kim Wancin 1973), the phonological length of the verb up to the accented mora is maintained in spite of the fact that the mora which originally carries the accent is deleted.

(15) *nàzŏ*- “improve” + *-kwŏ* (gerund)→ *nàskwŏ* (*Nungem kyeng* 8.18)

The accentual behavior of Class 4 stems, then, is governed by the same rules that govern the behavior of Class 1b stems. The only difference is that when Rule (3) deletes a vowel which carries an accent, the accent is incorporated into the preceding syllable. Below is an example illustrating the application of the three rules to a Class 4 verb.

(16) a. *kètŭ*- “walk” + *-ŭmyé* (conjunctive) ^{Rule (1)}→ *kèlŭmyé* (*Sekpo sangcel* 6.33)

b. *kètŭ*- “walk” + *-é* (infinitive) ^{Rule (2)}→ *kélé* (*Mongsan hwasang pŏp-e yaklok enhay* 45)

c. *kètŭ*- “walk” + *-kwŏ* (gerund) ^{Rule (3)}→ *kètkwŏ* (*Wel in chen kang ci kok* 130)

From the evidence discussed so far, I propose the following generalization:

All Class 1b verb stems, all Class 4 verb stems, and all other verb stems whose final consonant is *W*, *z*, or *t/l* are vowel stems ending in *-ŕ/ŭ*-.

For the verbs discussed in this paper, this claim means that in addition to the Class 1b and Class 4 *W*-, *z*-, and *t/l*- verb stems, the following Class 2 and Class 3 *W*-verb stems are also disyllabic:

Class 2

chíWŭ- “be cold” *chíWŭn* (*Welin sekpo* 18.51)

Class 3

kwŏWŏ- “be pretty” *kwŏWŏn* (*Sekpo sangcel* 6.13)

swŭyWŭ- “be easy” *swŭyWŭní* (*Mongsan hwasang pŏp-e yaklok enhay* 26)

syélWŭ- “be painful” *syélWŭl* (*Welin sekpo* 1.29)

The second syllable of the above stems is consistently low pitched in spite of the fact

⁸ That this phenomenon is not restricted to the verbs is shown by such historical contractions of nouns as *kwŏmâ* > *kwŏm* “bear” and *tŭlŭh* > *tŭlh* “plain”. Also cf. Ramsey (1975, §3.6.)

that it is preceded by an accent within the same stem. In MK accentual distinctions are not maintained after the first accent within the same morpheme⁹; therefore it appears that these stems contain two morphemes. In all probability the first morpheme is the stem of an action verb and the second morpheme is $-W\acute{o}/W\acute{u}-$, the postverb which derives descriptive verbs from action verbs.¹⁰

If the above Class 2 and Class 3 verbs are accepted as vowel stems, then in MK W , z , and t/l are in completely complementary distribution with stem-final $/p,s,t/$. The conclusion is that all occurrences of W , z , and t/l as the last consonant of a verb stem must have developed through the lenition of $/p,s,t/$, respectively.¹¹

These verbs must be reconstructed in proto-Korean with a stem-final vowel. The question is: Why do we find only the one vowel ρ/y ¹² attested in this position in MK? One important fact bearing on this question is the attestation of the second-syllable vowel (in ways parallel to the MK data discussed above) in the South Hamkyeng dialect.¹³ In this dialect p and s did not lenite to W and z , so that we find, for example, *pusu* "swell" corresponding to MK $p\acute{u}z\acute{u}-$, and *tepú-* "be hot" corresponding to MK $t\grave{e}W\acute{u}-$. These dialect forms show that the presence of the final vowel conditioned the lenited consonants, not vice versa. That is to say, we cannot postulate that a stem-final vowel was affixed after the voiced fricatives W and z in order to protect them from merger with p and s , because that would not explain the presence of the vowel in the South Hamkyeng dialect stems where p and s did not lenite. In that dialect, for example, *pusu* "swell" contrasts with *pes-* "remove", and *kwupu-* "bake" contrasts with *kop-* "be bent" by the presence of the second syllable vowel, not by a lenited consonant.

Clearly related to this question, also, is the fact that MK verb stems seldom show any vowel in second syllable position except ρ , u , and the neutral vowel (in the vowel harmony system) i . It is entirely possible that this asymmetrical distribution of the MK vowels in non-initial-syllable position is the result of the leveling of a fuller system of distinctions at an earlier stage of the language.

⁹ This is an important fact about the MK pitch system which unfortunately cannot be discussed here. (See Ramsey 1974: 120-121).

¹⁰ Professor S.E. Martin suggests that $sw\acute{u}yW\acute{u}-$ "be easy" is derived from $sw\acute{u}y-$ "rest"+this postverb $-W\acute{o}/W\acute{u}-$. (S.E. Martin, personal communication.)

¹¹ Ceng Yen-chan (1963: 25-26) has also claimed that W , z , and t/l developed historically from intervocalic $/p,s,t/$, and that the following stem-final vowel was lost by apocope before the MK period.

¹² Remember that the alternation between ρ and u is governed by the rules of vowel harmony.

¹³ The phonology, and especially the accentual phenomena, of this dialect are treated in Ramsey 1975.

MIDDLE KOREAN REFERENCES

Text	Date of publication
Yong pi e chen ka(龍飛御天歌)	1445
Wel in chen kang ci kok(月印千江之曲).....	1447
Sekpo sangcel(釋譜詳節)	1447
Welin sekpo(月印釋譜)	1459
Nungem kyeng(楞嚴經諺解).....	1462
Myopep yenhwa kyeng(妙法蓮華經諺解)	1463
Mongsan hwasang pep-e yaklok enhay(篆山和尚法語略錄諺解).....	1472
Kumkang kyeng sam ka hay(金剛經三家解)	1482
Kwan-um kyeng(觀音經諺解)	1485
Hwunmong cahoy(訓蒙字會).....	1527

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