TONE IN KEJOM (BABANKI) ASSOCIATIVE CONSTRUCTION[&]

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This article presents the associative construction (AC) in Kejom (Babanki), while focusing on the behaviour of tone. Kejom is a Grassfields Bantu language spoken in the North West Region of Cameroon. Tonal processes that occur in the Kejom AC have been accounted for using Register Tier Theory. The analysis reveals that the tonal processes are sensitive to a low-toned nasal that occupies the onset position of the noun roots involved. Furthermore, it has been demonstrated that some tones must be singly-linked, and not doubly-linked for the tone rules to apply. This study provides a simpler analysis of the AC in this language, making use of only four tone rules without much recourse to underlying floating tones.

Cet article est consacré à une étude des tons dans les constructions associatives en Kejom (Babanki), une langue bantoue du grassfield parlée dans la région nord ouest du Cameroun. La Théorie de Registre en Paliers est utilisée pour expliquer les changements tonaux observés. L'analyse révèle que ces processus tonaux sont sensibles à une nasale à ton bas qui occupe l'attaque de la racine des noms concernés. Elle révèle également que certains tons doivent être associés à une seule unité porteuse de ton (pas à deux) pour que les règles tonales s'appliquent. Cette étude propose une analyse plus simple de la construction associative en Kejom, car elle utilise seulement quatre règles tonales et ne fait pas appel à des tons flottants de structure profonde.

0. INTRODUCTION

This paper presents the associative construction (AC) in Babanki (henceforth Kejom, as the native-speakers prefer to call their language), while focusing on the behaviour of tone. Kejom is a Centre Ring Grassfields Bantu language spoken by approximately 25,000 people (Akumbu, 2008) in two villages - Kejom Ketinguh (Babanki Tungo) and Kejom Keku (Big Babanki) in the North West Region of Cameroon. The AC in Kejom is of the form 'noun 1 (N1) of noun 2 (N2)', where the two nouns are separated by an associative marker (AM) which translates roughly as 'of'. In this type of construction, almost any noun can be juxtaposed with any noun. It has been demonstrated that in many African languages, the AC is conveyed by means of a tonal morpheme (Akumbu, 2006; Chumbow and Nguendjio, 1991; Tamanji and Ndamsah, 2004). In Kejom, however, a segmental morpheme that depends on the noun class of the noun that occupies N1 position occurs as the AM. When nouns come together in such constructions tone behaves in very peculiar ways being constrained by a nasal when it occupies the onset position of noun roots. Hyman (1979) proposes an account of ACs in this language, making heavy use of both floating L and H tones in underlying forms which differ markedly from their surface realizations. He shows what happened historically, retracing the steps that result to the present complex tonal system. I present a synchronic account within the framework of Register Tier Theory, making use of only a few tone rules, without much recourse to underlying floating tones. This paper is organized as follows: The basics of Register Tier Theory are presented in §1 followed by a presentation of the noun class system of the language in §2 since the discussion draws on nouns from different noun classes. In §3, I show the syllable structure of noun roots in the language because the behaviour of tone in these constructions is determined to a large extent by the structure of the syllables. Finally, §4 contains a discussion of the associative construction in Kejom.

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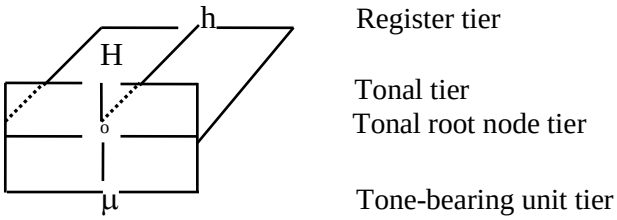
1. REGISTER TIER THEORY

Register Tier Theory (RTT) (Inkelas, 1987; Inkelas et al., 1987; Snider, 1988, 1990, 1999) recognizes the following autosegmental features and tiers: the register features h and l on a REGISTER TIER, the tonal features H and L on a TONAL TIER, a TONAL ROOT NODE TIER (TRN), and a TONE-BEARING UNIT TIER (TBU). These tiers are geometrically arranged according to the configuration in (1) taken from Snider (1999:23).

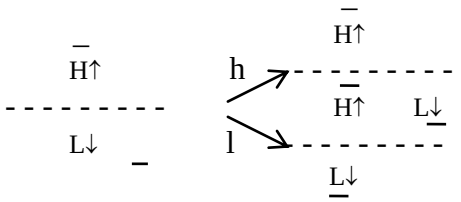
Figure 1 Geometry of tone



> "Features on the Register tier and the Tonal tier are linked to structural nodes on the TRN. Geometrically, these tiers form a separate plane with respect to the TRN. Nodes on the TRN are, in turn, linked to moras (μ) on the TBU tier" (Snider 1999: 23).

The register features h and l are defined following Snider (1999:25) as "effect a register shift h=higher, and l=lower relative to the preceding register setting", and the tonal features H and L are defined as realize the "TBU at H=high pitch, and L=low pitch relative to the current register." This is shown in (2) (the dotted lines represent registers and the solid lines represent tones).

Figure 2 Register features and tonal features



The geometry in (1) and the features in (2) make it possible to specify up to four logically possible tonal distinctions, namely, a high tone on a high register, a high tone on a low register, a low tone on a high register, and a low tone on a low register. Notice firstly that the register feature of any given TBU is specified in relation to that of the preceding register. The register of the initial TBU for its part is construed to be higher than or lower than the reference point that native speakers usually have in mind when beginning an utterance. Secondly, the tonal feature associated to any given TBU specifies whether the tone is low or high in relation to the current register. RTT is

used in this paper to insightfully explain the tonal processes, given that within this theoretical model features on each tier can behave independently of one another.

2. NOUN CLASS SYSTEM

Most Kejom nouns consist of a prefix[1]+root with class ten nouns comprising a root+suffix. The noun class system includes Bantu classes 1, 2, 3, 5, 6, 6a, 7, 8, 9, 10, 13, and 19. Possible class pairings in Kejom are 1/2, 3/6, 3/13, 5/6, 5/13, 7/8, 7/6, 7/6a, 7/10, 9/6, 9/10, and 19/6a. The noun class system of this language is summarized in the following table.

Table 1: Kejom Noun Classes

Noun Class	Prefix (Suffix, Class 10)	Example	Gloss
1	**ə̀-**	**sàŋ, sù?, wùlɨ́m**	'month', 'bottle', 'man'
2	**və̀-, ə̀-**	**və̀-sàŋ, və̀-sù?, lʉ́ˈmə́**	'months', 'bottles', 'men'
3	**ə̀-**	**ə̀-fwín, ə̀-wóŋ**	'leg', 'market'
5	**ə̀-**	**ə̀-ʃɨ́, ə̀-ɣóŋ**	'eye', 'spear'
6	**à-**	**à-fwín, à-ʃɨ́, à-ɣʉ́**	'legs', 'eyes', 'feet'
6a	**mə̀-**	**mə̀-ɲɲín, mə̀-fʉ́**	'birds', 'medicines'
7	**kə̀-**	**kə̀-m̀bò, kə̀-ɣʉ́, kə̀-fó**	'bag', 'foot', 'thing'
8	**ə̀-**	**ə̀-m̀bò**	'bags'
9	**ə̀-**	**m̀bà?, Bʉ́**	'insult (N)', 'dog'
10	**-sə́**	**m̀bà?-sə́, Bʉ́-ˈsə́**	'insults (N)', 'dogs'
13	**tə̀-**	**tə̀-wóŋ, tə̀-ɣóŋ**	'markets', 'spears'
19	**fə̀-**	**fə̀-ɲɲín**	'bird'

3. SYLLABLE STRUCTURE OF NOUN ROOTS

A majority of Kejom noun roots are monosyllabic and this study is limited to such nouns. Monosyllabic noun roots have the structure CV, CGV, CVC, CGVC, NCV, NCGV, NCVC, NCGVC, where *G* represents a glide as illustrated in table 2 with the most common tonal melodies, L and H.

Table 2: Syllable Structure of Noun Roots

	CV	CGV	CVC	CGVC	NCV	NCGV	NCVC	NCGVC
L	**à-bè** 'liver'	**bjɨ̀** 'pit'	**dzə̀m** 'back'	**kə̀-bjì?** 'dust'	**kə̀-ǹdʉ̀** 'whip'	**ǹdjə̀** 'thing'	**kə̀-m̀fɨ́f** 'blind s.o'	**ŋ̀gwà?** 'seed'
H	**ə̀-fʉ́** 'leaf'	**ə̀-lwí** 'nose'	**tə̀-káŋ** 'skies'	**ə̀-fwín** 'leg'	**kə̀-m̀bó** 'madness'	**ŋ̀gwé** 'name'	**ŋ̀kɨ́m** 'basket'	**m̀bjə́?** 'shoulder'

[1] An initial vowel may or may not occur before the prefix or root (i.e. it is optional). The initial vowel can occur in all the noun classes. It can surface before all consonants. When found before vowels, it is deleted following a schwa deletion process that applies in the language, deleting the schwa when it is adjacent to another vowel.

Apart from the glottal stop, all Kejom consonants can occupy the onset position. Most consonants in onset position can be labialized or palatalized, and prenasalized. At some point in history, the N in NC sequences might have been a prefix from class 1 or class 9, bearing a low tone, as analyzed by Hyman (1980) but has now become part of the root. The coda of the syllable can be occupied by [**f, s, n, m, ŋ or ʔ**]. The way tones surface on the nouns in ACs depends to a large extent on whether or not a nasal occurs as part of the onset of the root. The roots with open syllables behave differently than those with closed syllables when they occur with the vocalic AM.

4. THE ASSOCIATIVE CONSTRUCTION

The ACs in this language can be divided into five sets based on the type of AM they take. The first set involves those for noun classes 2, 7, 13, and 19 that have a CV shape and occur on a high tone. The AM for class 10 nouns, which is also a high toned CV is in the second set. Recall that the nouns in class 10 take a suffix as their noun class marker unlike the other classes that take prefixes. The third set contains class 6a nouns whose AM has a CV structure that occurs on a low tone. The AM for classes 3, 5, 6, and 8 nouns is a high toned V and so they are placed in the fourth set. Finally the AMs for noun classes 1 and 9 nouns which have a low toned V shape form constitute the fifth set. They are grouped as in the following table.

Table 3: Kejom Associative Markers

Noun Class	Association Marker
2, 7, 13, and 19	High toned CV (**və́, kə́, tə́,** and **fə́**)
10	High toned CV (**sə́**)
6a	Low toned CV (**mə̀**)
3, 5, 6, and 8	High toned V (**ə́**)
1, and 9	Low toned V (**ə̀**)

A comparison of tables 1 and 3 reveals a close correlation between the noun class affixes and the AMs for each class. Except for tone, the AM (high toned) and the noun class markers (low toned) for classes 2, 3, 5, 6, 7, 8, 13, and 19 are ordinarily identical. For classes 1, 6a, 9, and 10 both the AM and the noun class prefixes are identical.

Tonal processes that occur in the Kejom AC include h-spread, High Tone Spread (HTS), and Low Tone Spread (LTS). While h-spread is followed by the delinking of the l register feature, HTS is followed by the delinking of the low tone, and LTS by the delinking of the high tone from the target TBUs. These tonal changes are conditioned by the presence of a nasal in the onset position of the juxtaposed noun roots. For example, h-spread can only apply if no nasal is present. HTS from the AM to the prefix of N2 also occurs only if there is no nasal even though it does occur in the presence of a nasal if the N2 root is high- toned. All of these changes are discussed further below.

4.1 ACs INVOLVING CLASSES 2, 7, 13 AND 19 NOUNS

When nouns from noun classes 2, 7, 13 and 19 are juxtaposed, a high toned AM of the shape CV, identical to the noun class prefix of the first noun, occurs between them. Examples are given in the following data[2] (In this paper, low tone raising is represented by ˀ and downstep of high tone by ꜜ) .

(1) a. **və-ˀsùʔ vá vá-ꜜtʃáʔ** 'bottles of fon's aides' **/və-sùʔ vá və-tʃáʔ/**
c2-bottle AM c2-fon's aides

b. **və-lɨ́m vá vá-ꜜkwí** 'husbands of namesakes' **/və-lɨ́m vá və-kwí/**
c2-husband AM c2-namesake

c. **kə-ˀkɔ̀s ká ká-ꜜfó** 'slave of thing' **/kə-kɔ̀s ká kə-fó/**
c7-slave AM c7-thing

d. **kə-ʃí ká ká-ʒwì** 'place of spirit' **/kə-ʃí ká kə-ʒwì/**
c7-place AM c7-spirit

e. **tə-ˀljəŋ tá tá-ꜜsím** 'bamboos of farms' **/tə-ljəŋ tá tə-sím/**
c13-bamboo AM c13-farm

f. **tə-tóʔ tá tá-ꜜgíʔ** 'bushes of dew' **/tə-tóʔ tá tə-gíʔ/**
c13-bush AM c13-dew

g. **fə-ˀkɔ̀ʔ fá fá-ꜜtín** 'tree of yard' **/fə-kɔ̀ʔ fá fə-tín/**
c19-tree AM c19-yard

h. **fə-sés fá fá-lɪ̀m** 'pepper of spice' **/fə-sés fá fə-lɪ̀m/**
c19-pepper AM c19-spice

It can be observed from these data that the low tone on the root of N1 is raised. In order to account for this raising, Hyman (1979) proposes an underlying H-LL̩ (where L̩ represents a floating low tone) that becomes L-M through four different rules. First, the final floating low tone is absorbed into the preceding low tone. Next, *H spreading* occurs from the prefix to the root, followed by the prefix H lowering to L and then the HL on the root is simplified to M.

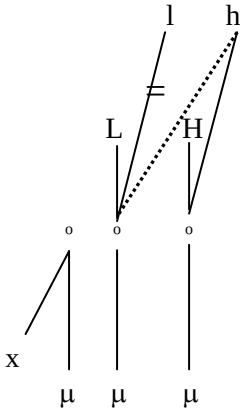
This procedure that results to the right output is rather complex and the proposal made in this paper is that the raising of the low tone is due to the presence of the following high tone of the AM. From a Register Tier Theory perspective, the low tone assimilates the high register feature of the high tone (through *h-spread*) and is realized on that higher register.

Another observation to be made from the above data is that the underlying L prefix of N2 surfaces as H while the H on the root surfaces as ꜜH. Hyman's account is that *H spreading* from the AM to the prefix gives an intermediate HL-H sequence that simplifies to H-ꜜH (p. 166). The RTT account proposed here is that High Tone Spread (HTS) occurs from the AM to the prefix. This spreading is then followed by the

[2] As a native-speaker of Kejom I have provided most of the data used in this paper. I have also made substantial reference to the data found in Hyman (1979). Unlike Hyman, I present data according to noun classes especially because the ACs are divided into sets based on the noun class of N1. In order to be quite sure of the different phonetic tone levels I asked Hyginus Abufon, who was born and has lived in Kejom Ketingu for more than 20 years to say some of the constructions.

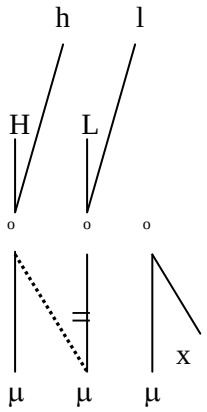
delinking of the low tone since all the prefixes[3] of N2 nouns surface with high tones. As a consequence of the delinking, the low tone is left floating and as it happens in a good number of languages (Akumbu, 2006; Snider, 1999; etc) this floating low tone causes the high tone on the root of N2 to be downstepped relative to the preceding high tone. The following rules are formulated to capture these changes.

Figure 3 h-spread



According to this rule, a high register feature spreads leftwards, and, in a subsequent process, delinks the low register feature. Notice that the target low tone is obligatorily preceded by another tone. For the h to spread, that preceding tone must be singly-linked[4] and not doubly-linked. In this regard, another, second, association line has been added to the node and an x put at the end of it to indicate that the tone must be singly-linked for the rule to apply. In other words if the tone is linked to another TBU, then h-spread does not apply.

Figure 4 High Tone Spread (HTS)

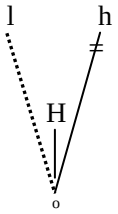


[3] An essential claim made in this paper is that all prefixes in Kejom are underlyingly low-toned (see Hyman (1979) for a different view that most N1 prefixes are underlyingly high-toned).

[4] Having rule application depend on single vs. multiple associations of nodes has some precedent in the literature. For example, Shein and Steriade (1986) states this constraint as the "Uniform Applicability Condition", Hayes (1986) refers to it as the "Linking Constraint", and Goldsmith (1990) employs the "Conjunctivity Condition".

This rule states that a high tone spreads to the following low-toned bearing unit and, subsequently, delinks that low tone. Observe that the target low tone must also be followed by another tone. For the H to spread to the tonal root node of the L, that following tone must be singly-linked and not doubly-linked. Again, an x is put at the end of an additional association line to specify that the tone must be singly-linked. In order words, if the tone is linked to another TBU, then HTS does not apply.

Figure 5 Downstep



According to this rule, a floating low register feature spreads rightwards, and, in a subsequent process, delinks the following high register feature. The data in (1) can therefore be derived as follows:

Figure 6

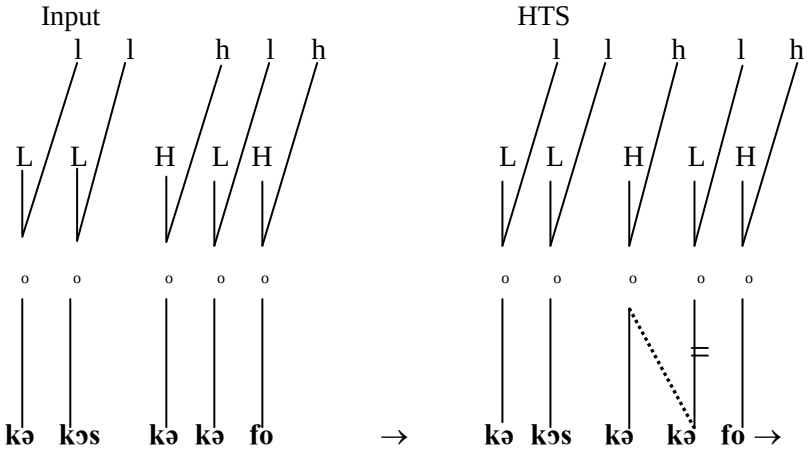


Figure 7

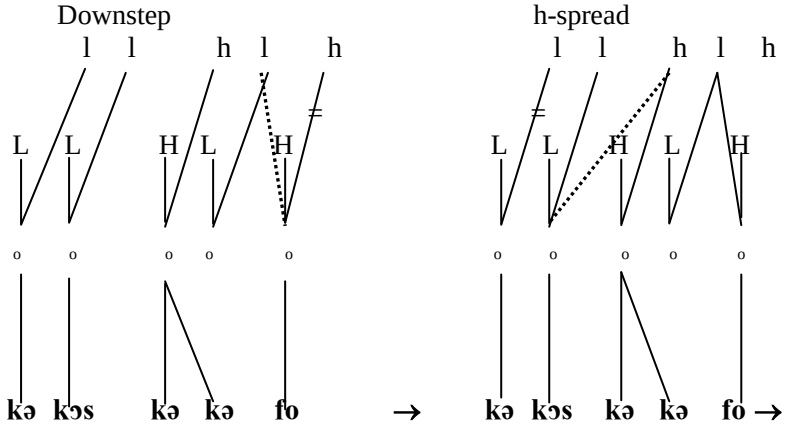
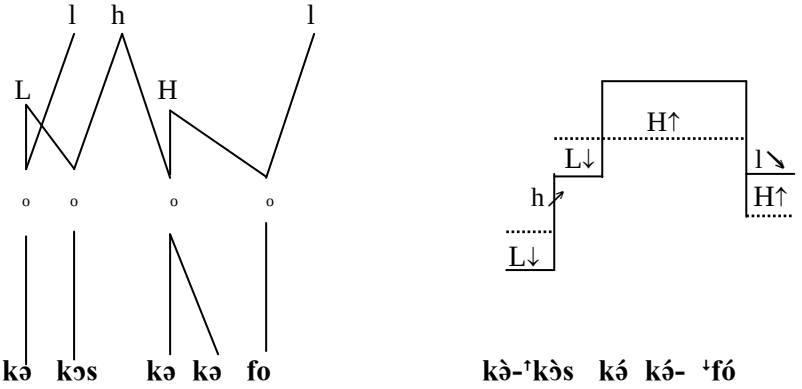


Figure 8 Stray Erasure and Merger Phonetic Representation



According to this derivation, HTS from the AM to the prefix of N2 results to the high tone of the final TBU being realized on a low register feature. The low tone on [**kɔ̀s**] is realized on a higher register due to h-spread from the AM. Recall that the dotted lines represent *register* while the solid horizontal lines represent *tone*. The lower case *h* and *l* together with the *arrows* show how register changes. The phonetic representation above is therefore interpreted as follows: a low tone is realized on a low register followed by another low tone on a high register and a high tone on that same (high) register and then a high tone on a low register.

However, h-spread fails to occur (and the N1 low tone is not raised) as in the following data.

(2) a. **və̀-ǹtɔ̀n və́ və́-ˈlím** 'pots of husbands' **/və̀-ǹtɔ̀n və́ və̀-lím/**
c2-pot AM c2-husband

b. **və̀-ŋ̀gú? və́ və́-ˈkwí** 'termites of namesakes' **/və̀-ŋ̀gú? və́ və̀-kwí/**
c2-termite AM c2-namesake

c. **kə̀-m̀bwìn ká́ ká́-ˈʃí** 'thread of place' **/kə̀-m̀bwìn ká́ kə̀-ʃɪù/**
c7-thread AM c7-place

d **kə̀-ǹsɔ́n ká́ ká́-bwìn** 'frog of witchcraft' **/kə̀-ǹsɔ́n ká́ kə̀-bwìn/**
c7-frog AM c7-witchcraft

e. **tə̀-ŋ̀kwə̀n tá́ tá́-ˈkó** 'tails of much money' **/tə̀-ŋ̀kwə̀n tá́ tə̀-kó/**
c13-tail AM c13-money

f. **tə̀-ǹtú tá́ tá́-ˈwás** 'shoots of vegetable' **/tə̀-ǹtú tá́ tə̀-wás/**
c13-shoot AM c13-vegetable

g. **fə̀-ǹʃì? fá́ fá́-làm** 'beetle of net' **/fə̀-ǹʃì? fá́ fə̀-làm/**
c19-beetle AM c19-net

h. **fə̀-ŋ̀gŭ fá́ fá́-tʃò** 'hook of squirrel' **/fə̀-ŋ̀gŭ fá́ fə̀-tʃò/**
c19-hook AM c19-squirrel

The fact that the low tone on low-toned roots in N1 is not raised can be attributed to the presence of a nasal in the onset position of such roots. One wonders why the nasal has the ability to regulate the behaviour of tone in ACs. Hyman (1979) and DeVisser (2005) propose that the N in NC sequences might have been a prefix from classes 1 or 9 bearing a low tone. When the low-toned nasal occurs, h-spread from the AM to the root of N1 fails to apply. As stated in (2) above, the rule can only apply if the low tone that precedes the target low tone is singly-linked. In (6), the nasal onset forms part of the root and bears the same low tone like the root vowel because of the OCP (Snider, 1999) that is enforced morpheme-internally in Kejom. Hence, the occurrence of the nasal leads to the violation of the condition that the tone that precedes the target low tone must be singly-linked for h-spread to occur. The data are therefore derived as follows:

Figure 9

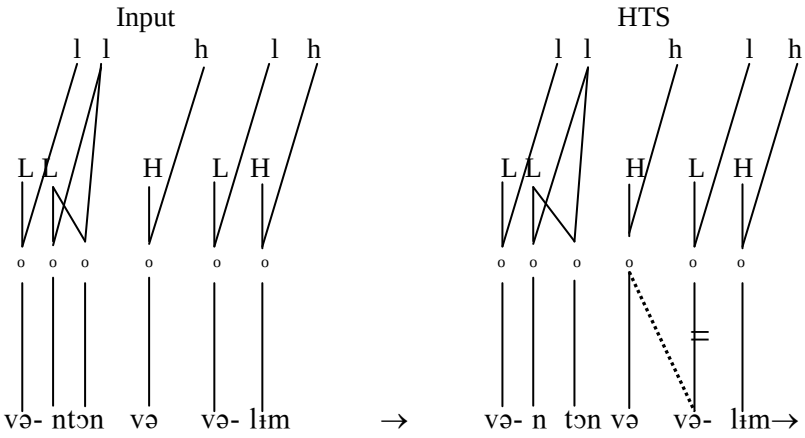
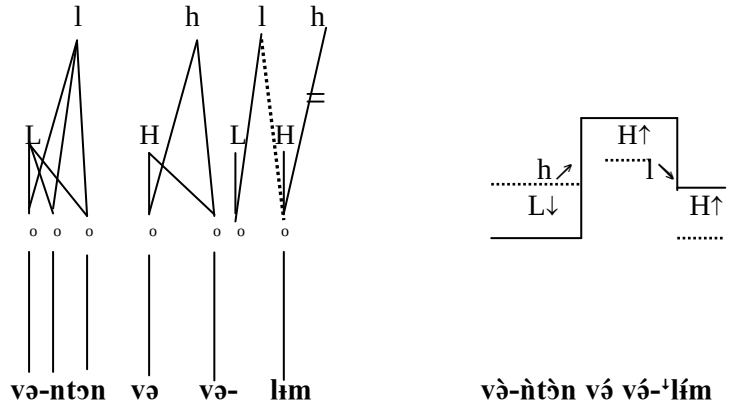


Figure 10 Downstep, Merger and Stray Erasure Phonetic Representation



Similarly, HTS from the AM to the prefix of N2 low-toned roots fails to apply in the presence of a nasal onset, as the following data show.

(3) a. **və-ˈsù? və́ və-ǹtə̀?** ‘bottles of quarters’ **/və-sù? və́ və-ǹtə̀?/**
c2-bottle AM c2-quarter

b. **və-lɨ́m və́ və-ǹdɔ̀ŋ** ‘males of potatoes’ **/və-lɨ́m və́ və-ǹdɔ̀ŋ/**
c2-male AM c2-potatoe

c. **kə-ˈkɔ̀s ká kə-m̀mɨ̀ŋ** ‘slave of dirt’ **/kə-kɔ̀s ká kə-m̀mɨ̀ŋ/**
c7-slave AM c7-dirt

d. **kə-ʃí ká kə-ɲɲɔ̀ʔ** ‘place of writing’ **/kə-ʃí ká kə-ɲɲɔ̀ʔ/**
c7-place AM c7-writing

e. **tə-ˈvò tá tə-ŋ̀gɔ̀m** ‘leaves of plantains’ **/tə-vò tá tə-ŋ̀gɔ̀m/**
c13-leaf AM c13-plantain

f. **tə-kó tá tə-ŋ̀kwə̀n** ‘money of tails’ **/tə-kó tá tə-ŋ̀kwə̀n/**
c13-money AM c13-tail

g. **fə-ˈkɔ̀ʔ fá fə-ǹtàŋ** ‘tree of rope’ **/fə-kɔ̀ʔ fá fə-ǹtàŋ/**
c19-tree AM c19-rope

h. **fə-sés fá fə-ɲɲɨ̀n** ‘pepper of bird’ **/fə-sés fá fə-ɲɲín/**
c19-pepper AM c19-bird

The failure of HTS to apply here is also due to the presence of the nasal onset. Both the nasal and root vowel are linked to the same low tone leading to the violation of the condition in (3) that the tone that follows the target low tone must be singly-linked for the H to spread. The data in (8) are therefore derived as follows:

Figure 11

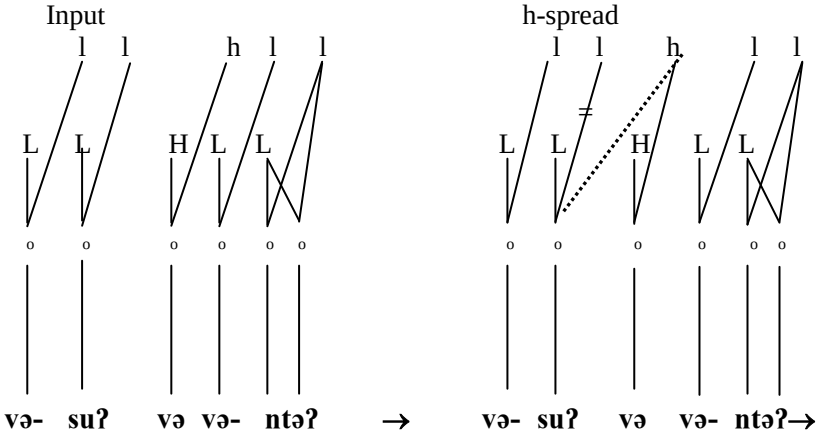
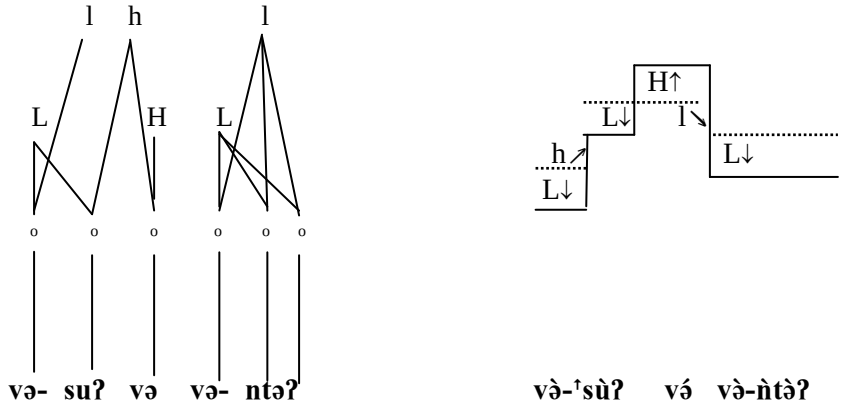


Figure 12 Stray Erasure and Merger Phonetic Representation



However, even when a nasal is present in the onset position of high-toned roots of N2, HTS occurs. Notice that h-spread fails to occur because of the presence of a nasal in the onset position of N1. The following data show HTS.

(4) a. **və̀-ǹtɔ̀n və́ və́-ŋ̀káŋ** ‘pots of cornbeer’ **/və̀-ǹtɔ̀n və́ və̀-ŋ̀káŋ/**
c2-pot AM c2-cornbeer

b. **və̀-ŋ̀gú? və́ və́-m̀pfí** ‘termites of mothers’ **/və̀-ŋ̀gú? və́ və̀-m̀pfí/**
c2-termite AM c2-mother

c. **kə̀-m̀bwìn ká ká-m̀bó** ‘thread of madness’ **/kə̀-m̀bwìn ká kə̀-m̀bó/**
c7-thread AM c7-madness

d. **kə̀-ǹsɔ́n ká ká-ŋ̀kúŋ** ‘frog of flood’ **/kə̀-ǹsɔ́n ká kə̀-ŋ̀kúŋ/**
c7-frog AM c7-flood

e. **tə̀-ŋ̀kwən tá tá-ǹtú** ‘tails of sprouts’ **/tə̀-ŋ̀kwən tá tə̀-ǹtú/**
c13-tail AM c13-sprout

f. **tə̀-ǹtú tá tá-ǹtám** ‘shoots of branches’ **/tə̀-ǹtú tá tə̀-ǹtám/**
c13-shoot AM c13-branch

g. **fə̀-ǹtɔ̀n fá fá-m̀bváŋ** ‘small pot of salt’ **/fə̀-ǹtɔ̀n fá fə̀-m̀bváŋ/**
c19-pot AM c19-salt

h. **fə̀-ŋ̀gŭ fá fá-ŋ̀kú?** ‘hook of slave’ **/fə̀-ŋ̀gŭ fá fə̀-ŋ̀kú?/**
c19-hook AM c19-slave

These data show that when a nasal occurs as part of the onset of high-toned N2 roots, the high tone is able to spread from the AM to the prefix of N2. This is allowed because the nasal onset bears a low tone while the root vowel bears a high tone. The tone that follows the target low tone is therefore singly-linked and the condition for HTS to apply is met.

HTS from the AM to the prefix of N2 is followed by the delinking of the low tone of the prefix. The delinked low tone merges with the low tone on the following nasal. The following derivation recapitulates these facts.

Figure 13

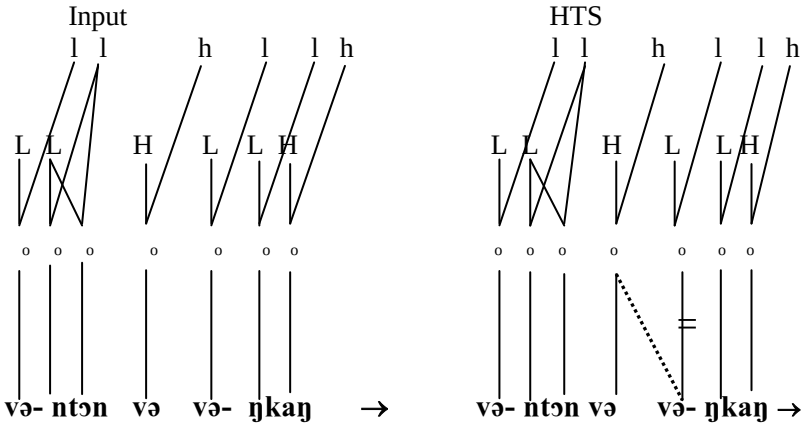
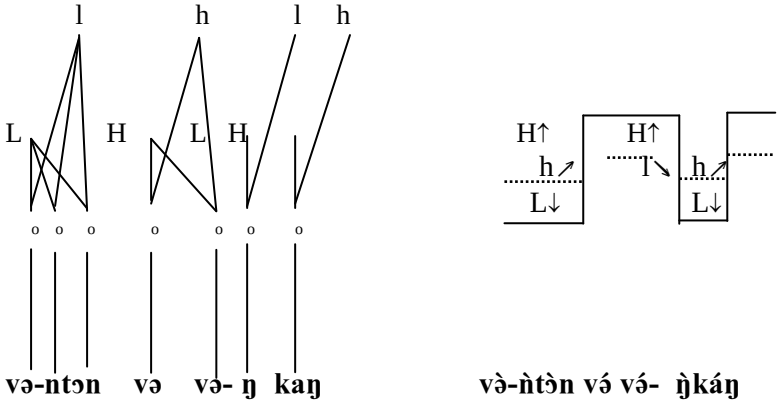


Figure 14 Stray Erasure and Merger Phonetic Representation



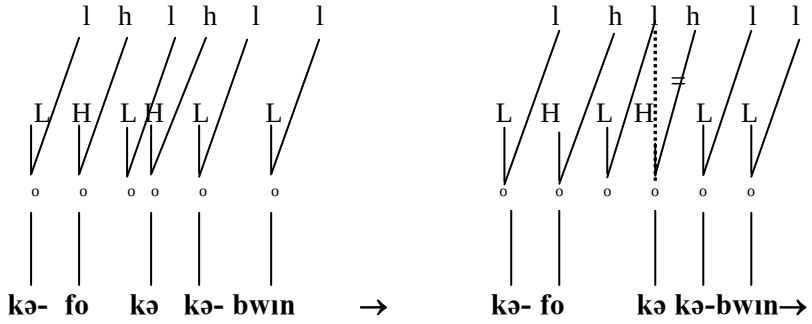
While the sets of data in (6, 8, and 10) can be accounted for using h-spread and HTS, there are some nouns[5] that behave differently, causing a high tone that follows them (e.g, that of the AM) to be downstepped. Consider the following data.

(5) a. **fə-ɲɲín ˈfə́ fə́-ŋ̀kú?** 'bird of slave' **/fə-ɲɲín fə́ fə-ŋ̀kú?/**
c19-bird AM c19-slave

b. **kə-fó ˈkə́ kə́-bwìn** 'thing of witchcraft' **/kə-fó kə́ kə-bwìn/**
c7-thing AM c7-witchcraft

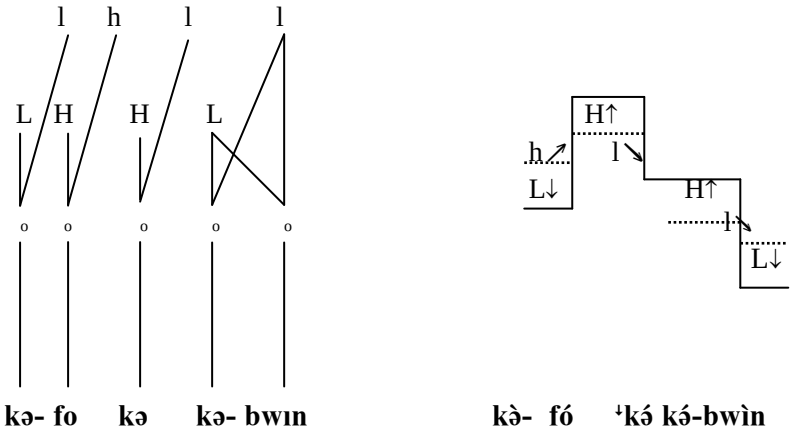
In order to account for the downstep, Hyman proposes to have a floating L at the end of the N1 roots. Even though he eventually rejects such a possibility and posits a floating H for (12a**)** nouns, it is argued in this paper that the floating L tone analysis works well for both sets of data. The low register feature of this floating low tone spreads to and delinks the high register of the AM high tone causing the H tone to be realized on a low register. This can be seen in the following derivation.

Figure 15 Input Downstep



[5] Three different [L-H] tone classes can be distinguished for Kejom (Hyman, 1979). Examples include the following:
L-H class 1: **fə-ɲɲín** 'bird'
L-H class 2: **kəfó** 'thing'
L-H class 3: **kə̀kɪ́m** 'crab'
These three L-H tone classes act differently in two ways:
(i) L-H classes 1 and 2 cause a following H tone to become downstepped.
(ii) L-H classes 1 and 3 become L-L after classes 1, 6a, and 9 low tone associative markers.

Figure 16 Merger Phonetic Representation



5.2 ACs INVOLVING CLASS 10 NOUNS

As mentioned previously, class 10 nouns have the structure root+suffix. When they are combined in an AC, [**sə́**] occurs between them as the AM. When this happens one expects to have the noun class suffix [**-sə́**] followed immediately by the AM [**sə́**]. However, only one of them surfaces, in order to avoid redundancy. Hyman (1980, pp. 228-229, 254) demonstrates that it is the class 10 suffix that is lost in favour of the AM. Consider the following data.

(6) a. **bá?-ˡsə́** **ʒú-ˡsə́** 'cliffs of bees' /**bà?-sə́ sə́ ʒù-sə́**/
cliff-c10.AM bee-c10

b. **ʃú-ˡsə́** **bá?-ˡsə́** 'fishes of cliffs' /**ʃù-sə́ sə́ bà?-sə́**/
fish-c10.AM fish-c10

c. **dzém-ˡsə́** **m̀bàn-sə́** 'backs of fences' /**dzèm-sə́ sə́ m̀bàn-sə́**/
back-c10.AM fence-c10

d. **ǹtɔ̀n-sə́** **fjí-ˡsə́** 'pots of kidneys' /**ǹtɔ̀n-sə́ sə́ fjì-sə́**/
pot-c10.AM kidney-c10

e. **m̀pfù-sə́** **m̀bàn-sə́** 'ropes of fences' /**m̀pfù-sə́ sə́ m̀bàn-sə́**/
rope-c10.AM fence-c10

Observe that downstep applies in these data between the high tone of the root and that of the suffix, where the H of [**-sə́**] is downstepped, relative to the H of the root. Downstep occurs when this class suffix is added to underlying low-toned nouns that do not have a nasal as part of the root (see 14a, b, and c). Hyman (1980, pp. 252-254) accounts for this downstep by providing historical evidence that there is a floating high tone that occurs before these noun roots. It docks onto the right (if there is no nasal onset) and delinks the low tone of the root. This low tone remains floating and causes the following high tone of the suffix to be downstepped relative to the high tone that now surfaces on the root, as shown in the following derivation.

Figure 16 Input HTS and **sə**à deletion

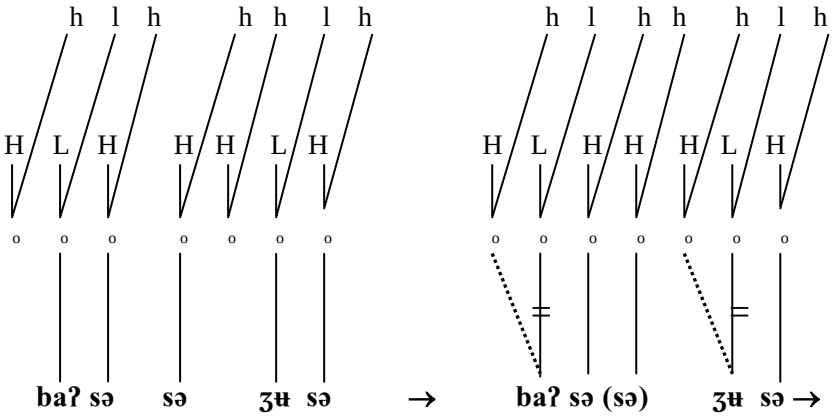
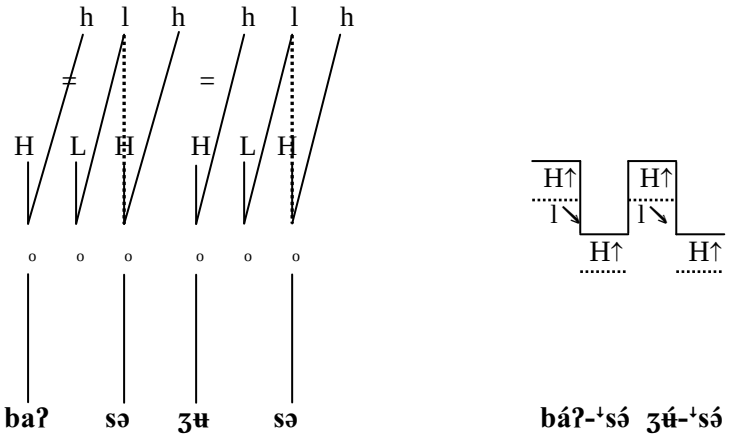


Figure 17 Downstep and Stray Erasure Phonetic Representation



While almost all class 10 nouns whose singular forms do not take a nasal as part of the root in class 9 can be accounted for in this manner, two exceptional nouns have been found. These are [**ʙʉ́ˡsə́**] /**ʙʉ́-sə**à/ 'dogs' and [**bjíˡsə́**] /**bjí-sə́**/ 'goats'. It is important to note that these are the only two high-toned nouns in class 9 whose roots do not have a nasal onset. All the nouns of this class without a nasal onset are underlyingly low-toned. Hyman (1980, p. 253) postulates a H-L stem for these roots in Kom (a Centre Ring Grassfields Bantu language), that is /**ʙʉ́** è and **bjí** è/. While I adopt his analysis for these two words in Kejom, I further observe that the reason why they behave this way is precisely that the two are borrowed words from Kom which maintain their underlying structure from the donor language, making it possible for the floating low tone to cause downstep.

5.3 ACs INVOLVING CLASS 6a NOUNS

When nouns from this class combine in ACs they are separated by a low-toned AM [**mə**è], as the following examples show.

(7) a. **mə̀-sò mə̀ mə̀-m̀fʉ́** 'boils of medicines' /**mə̀-sò mə̀ mə̀-m̀fʉ́**/
c6a-boil AM c6a-medicine

b. **mə-ǹʃí mə mə-ǹljù?** ‘tears of wine’ **/mə-ǹʃí mə mə-ǹljù?/**
c6a-tear AM c6a-wine

c. **mə-sés mə mə-ǹʒì?** ‘peppers of oil’ **/mə-sés mə mə-ǹʒí?/**
c6a-pepper AM c6a-oil

d. **mə-tʉ́? mə mə-m̀fʉ́** ‘calves of medicine’ **/mə-tʉ́? mə mə-m̀fʉ́/**
c6a-calf AM c6a-medicine

These data show that none of the processes described above occurs when nouns from this class combine in ACs. However, some H tones surface as L when found in N2 position, as the following data show.

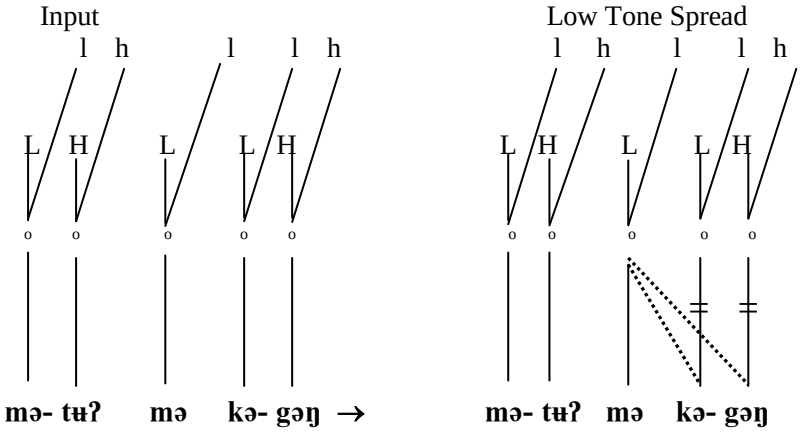
(8) a. **mə-ǹljù? mə kə-fʉ̀** ‘wine of medicine’ **/mə-ǹljù? mə kə-fʉ́/**
c6a-wine AM c7-medicine

b. **mə-sés mà sàŋ** ‘peppers of maize’ **/mə-sés mə à-sáŋ/**
c6a-pepper AM. c6 maize

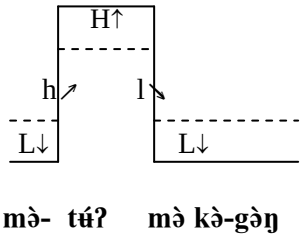
c. **mə-tʉ́? mə kə-gə̀ŋ** ‘calves of grass’ **/mə-tʉ́? mə kə-gə́ŋ/**
c6a-calf AM c7-grass

It should be mentioned that the majority of high toned nouns from classes 5, 7 and 19 whose high tones surface as low tones when found in N2 position are those that have their plural forms in either classes 6 or 6a. *Iterative low tone spread* formulated in (23 below) can be used to account for the data in (17).

Figure 18



Phonetic Representation



4.4 ACs INVOLVING CLASSES 3, 5, 6, AND 8 NOUNS

When nouns from classes 3, 5, 6, and 8 come together in ACs a high toned schwa [**ə́**] occurs between them as the AM.

(9) a. **ə-fjɨ́ŋ ə́ tə́-ˡkó** ‘wound of money’ **/ə-fjɨ́ŋ ə́ tə̀-kó/**
c3-wound AM c13-money

b. **ə-ᵀsè tə̀-ŋ̀kə̀ŋ** ‘grave of roosters’ **/ə-sè ə́ tə̀-ŋ̀kə̀ŋ/**
c3-grave.AM c13-rooster

c. **ə̀-fú ˡsím** ‘leaf of farm’ **/ə̀-fú ə́ ə̀-sím/**
c5-leaf.AM c3.farm

d. **à-kwə́n ə́ ˡsím** ‘beans of farm **/à-kwə́n ə́ ə̀-sím/**
c6-bean AM c3.farm

e. **à-ʒú?** **á-ˡsáŋ** ‘yams of maize’ **/à-ʒú? ə́ à-sáŋ/**
c6-yam.AM c6-maize

f. **ə̀-tjɔ́m ə́ kə̀-ǹtsì** ‘calabashes of cricket’ **/ə̀-tjɔ́m ə́ kə̀-ǹtsì/**
c8-calabash AM c7-cricket

g. **ə̀-ᵀtɔ̀?** **á-ˡkwén** ‘snails of cross’ **/ə̀-tɔ̀? ə́ à-kwén/**
c8-snail AM.c6-bean

These combinations confirm that the low tone of N1 roots is raised when followed by a high tone in case a nasal does not occur in onset position. HTS from the AM to the prefix of N2 also occurs only when there is no nasal in the onset of low toned nouns. When HTS does occur, it is followed by the delinking of the prefix low tone which remains floating and causes downstep of the following high tone. It should also be noted that the schwa is deleted when it occurs next to another vowel. Also observe that schwa deletion occurs after all tonal processes have applied. This explains why downstep of high tone still happens in [**ə́fú ˡsím**] ‘leaf of farm’ from /**ə̀-fú ə́ ə̀-sím**/.

Figure 19

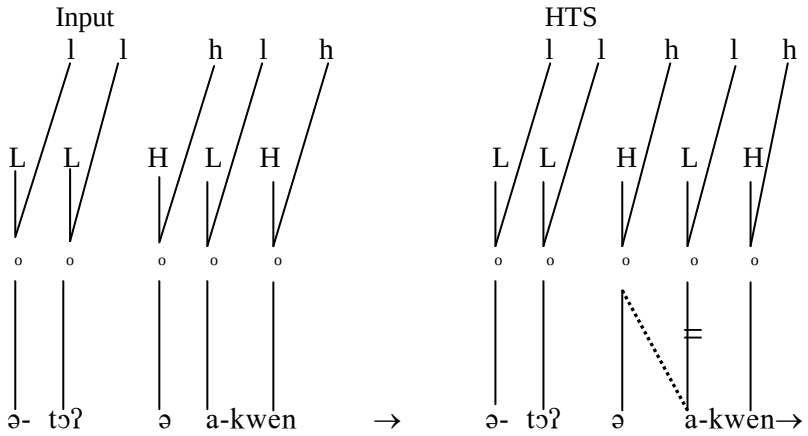


Figure 20 Downstep h-spread

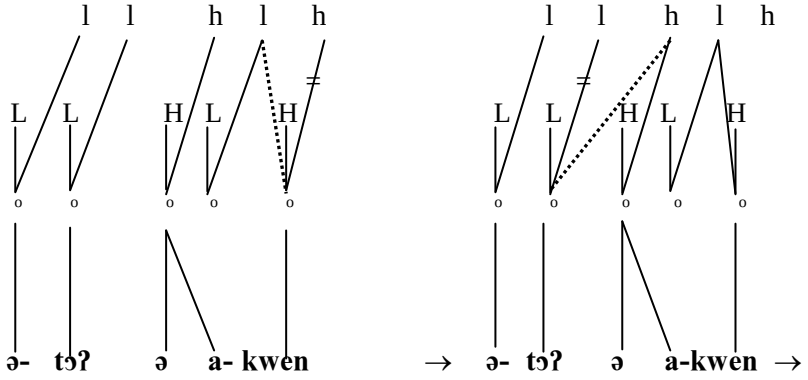
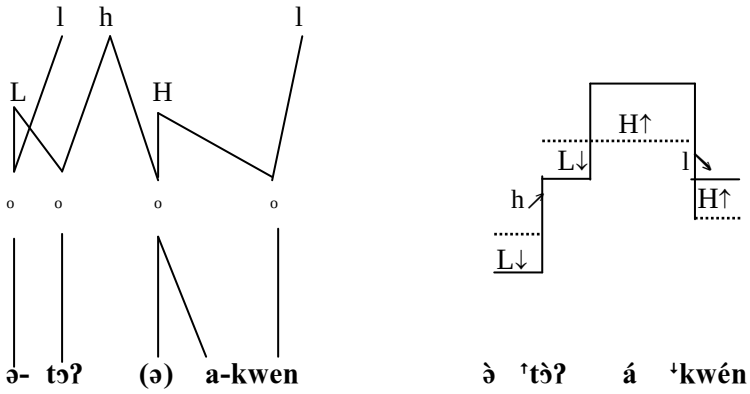


Figure 21 Schwa deletion Stray Erasure and Merger Phonetic Representation



4.5 ACs INVOLVING CLASSES 1 AND 9 NOUNS

The AM in these classes is a low toned schwa [ə̀]. Examples are given below.

(10) a. **lù̀m ə̀ wìʔ** ‘dry season of person’ **/lù̀m ə̀ wìʔ/**
c1.dry season AM c1.person

b. **dàlə̂ wàn** ‘robe of child’ **/dàlə́ ə̀ wàn/**
c1.robe.AM c1.child

c. **ŋgô ŋgúʔ** ‘antelope of termite’ **/ŋgó ə̀ ŋgúʔ/**
c1.antelope.AM c1.termite

d.**ǹdzàm ə̀ ŋgóʔ** ‘axe of trouble’ **/ǹdzàm ə̀ ŋgóʔ/**
c9.axe AM c9.trouble

e. **fjì ʃù** ‘kidney of fish’ **/fjì ə̀ ʃù /**
c9.kidney.AM c9.fish

f. **m̀bíʔî ǹdzàŋ** ‘bell of song’ **/ m̀bíʔí ə̀ ǹdzàŋ/**
c9.bell.AM c9.song

The data also illustrate that when schwa deletion occurs, its stranded tone docks leftwards to form a falling contour tone on the preceding TBU. No other tonal processes occur in combinations involving classes 1 and 9 nouns.

Classes 1 and 9 nouns, like those of class 6a also cause N2 H tone nouns from other noun classes other than 1 and 9 to surface with L tones, as the following data show.

(11) a. **ɲ̀ŋàm à kə̀-kɨ̀m** 'animal of crab' **/ɲ̀ŋàm à kə̀-kɨ́m/**
c9.animal AM c7-crab

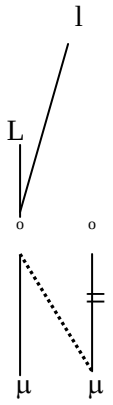
b. **sàŋ à tə̀-sɨ̀m** 'month of farming' **/sàŋ à tə̀-sɨ́m/**
c1.month AM c13.farm

c. **ʒù və̀-tsɔ̀ŋ** 'snake of thieves' **/ʒù à və̀-tsɔ́ŋ/**
c9.snake.AM c2.thief

d. **wì? à fə̀-tìn** 'person of yard' **/ wì? à fə̀-tín/**
c1.person AM c19.yard

This ability of classes 1, 6a, and 9 nouns, when found in N1, to cause Hs of N2[6] to become L can be attributed to the L of the AM of these classes. The L forces all tones that follow it to become L, on condition that there is no nasal in the onset of N2 roots. It should be noted that the L spreads first to the prefix and then to the root, deleting the prelinked tones. The following rule of low tone spread is formulated to account for the changes.

Figure 22 Low Tone Spread (iterative)



Condition: Only the low tone of classes 1, 6a and 9 AMs is concerned.

According to this rule a low tone spreads to and delinks the tone of the following TBU. The following derivation is provided to illustrate the application of this rule.

[6] Such nouns were classified by Hyman (1979) in Class II (see footnote 4 above).

Figure 23

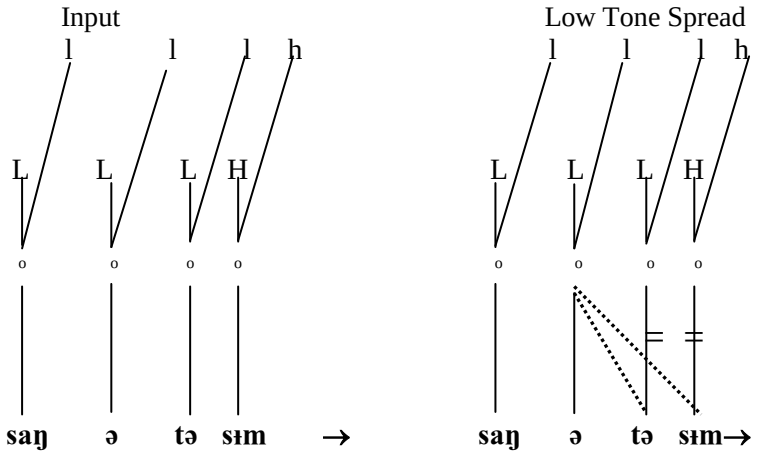
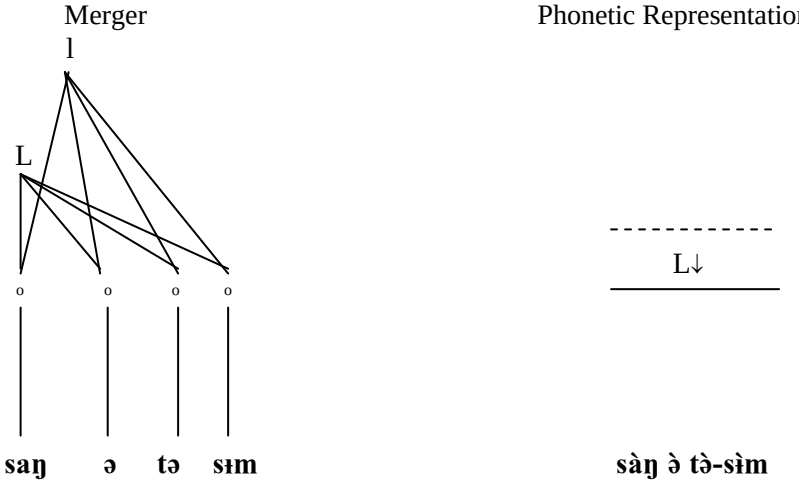


Figure 24



5. CONCLUSION

The way tone behaves when nouns are brought together in the associative construction in Kejom has been discussed in this paper. The analysis has been done within the framework of Register Tier Theory. It has been demonstrated that tonal processes that occur in such constructions are sensitive to a low-toned nasal that occupies the onset position of the noun roots involved. For example, *h-spread* applies only if there is no nasal in the onset position of N1 nouns. *HTS* applies if there is no nasal in the onset position of N2 nouns or in the presence of a nasal if the N2 root is high-toned. A determining factor of the analysis presented in this paper is the constraint that some tones must be singly-linked, and not doubly-linked for the rules to apply. For example the tone that precedes the target low tone must be singly-linked for *h-spread* to apply whereas the tone that follows the target low tone must be singly-linked for *HTS* to apply. These kinds of rule application that depend on single vs. multiple associations of nodes find support in previously stated constraints such as the *Uniform Applicability Condition* (Shein and Steriade, 1986), the *Linking Constraint* (Hayes, 1986), and the *Conjunctivity Condition* (Goldsmith, 1990).

Only four, as opposed to ten (Hyman, 1979) tonological rules have been used to account for the realization of tone in ACs in this language. Some nouns have been shown not to follow the regular pattern and this has been attributed to either their noun class affiliation or to the fact that they are borrowed from Kom, a neighbouring language. The logic of the present analysis has been to make possible a simpler account over Hyman's (1979) analysis of ACs in Kejom.

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