A PHONOLOGY OF BASSA

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0. Introduction

0.1. Bassa is an English word applied to a group of people who call themselves /bã sɔ̀/ or /gbɔɔ/ and who call the language they speak /bã sɔ̀ wən/ or /gbɔɔ wən/. The expression /bã sɔ̀/ is said to be a more recent term and to be derived from a compound of /bã/ 'father' and /sɔ̀/ 'rock'. /bã sɔ̀/ or 'father rock' was a /gbɔɔ/ coastal chief during the time that the Spanish and Portuguese were trading along the West African coast. /bã sɔ̀/ was respected both by the indigenous peoples and by the European traders. When the indigenous /gbɔɔ/ people brought goods to trade with the Europeans, they identified themselves as /bã sɔ̀/ 's people. The Anglicized version of /bã sɔ̀/ has come to be Bassa.

0.2. The Bassa people who number 166,000 constitute the second largest ethnic group in Liberia (Bureau of Statistics, Office of National Planning 1964). They inhabit the coastal area between Monrovia in Montserrado County and the Po River in Grand Bassa County, and they cover an area extending into the interior for almost seventy-five miles. There are also Bassa settlements in the larger towns of Liberia such as Gbarnga, Saniquellie and Harper and in other West African cities such as Freetown, Sierra Leone. Before the settlers arrived in the Monrovia area in 1822, the Bassa territory is said to have
extended northwest of Monrovia to the St. Paul River which formed a boundary between the Bassa and the Dey people. The Bassa are bordered by the Dey on the west, by the Kru on the south and southeast and by the Kpellé, Mano, Gio and Krahn on the north and east. The shaded area in Map 1 shows the approximate boundaries of the Bassa-speaking people in Liberia. This shaded area includes all people who are classified under the term "Bassa" used in its most general sense. It therefore includes a group of people who actually belong to two or more distinct ethnic groups. Siegmann (1969:III) refers to this area on the eastern edge as being populated by the Gbi-Doru peoples.

A survey of the Bassa dialects (Bertkau, Gbadyu, Duitsman and Mueller 1974) indicates that some kind of linguistic division exists between the Gbi-Doru group of dialects and the rest of Bassa although the Gbi-Doru group probably cannot be classified as a separate language or as separate languages at this time. In a word list closely similar to the Swadesh 200 word list there is over 98 percent cognition for the majority of Bassa dialects. However, five dialects in the Gbi-Doru area do not score such a high percentage with the central Bassa group. Gbii, Kpodo and Doso are 65 to 92 percent cognate with the central Bassa group, and Dowudu (Siegmann's Doru) and Bedeto are 82 to 85 percent cognate with the central Bassa group. Moreover, tests of mutual intelligibility indicate that speakers of central Bassa dialects experience difficulty understanding some of the peripheral eastern dialects.
This paper is based on the type of Bassa spoken in and around Buchanan known under the general English term Grand Bassa.

0.3. Linguists first noted the relationships among the languages of the eastern section of Liberia in the middle part of the nineteenth century. Koelle (1854, reprinted 1963) grouped Bassa along with Dey, Kru, Grebo and Gbii as members of "Liberian or Kru languages". Westermann and Bryan (1952:50-51) have added Krahn and Belle to their group of "KRU-speaking tribes in Eastern Liberia". Greenberg (1966) has included the KRU group as a sub-branch of the larger category KWA, which is itself a branch of the Niger-Congo family.

Aside from Koelle's word list collected in the middle of the nineteenth century, previous descriptions of Bassa are limited to two articles written by June Hobley (1964; 1965) describing the Bassa tonal system and the Bassa verbal system. The Peace Corps (n.d.) printed a language learning book, Beginning Bassa, which includes a sketch of Bassa grammar for the purposes of instruction.
1. Consonants

1.1.

<table>
<thead>
<tr>
<th>p</th>
<th>t</th>
<th>s</th>
<th>k</th>
<th>kp</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>d</td>
<td>s</td>
<td>g</td>
<td>gb</td>
</tr>
<tr>
<td>ʚ</td>
<td>d</td>
<td>ɞ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>m</td>
<td>n</td>
<td>ɲ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f</td>
<td>s</td>
<td>ʃ</td>
<td>x̪</td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>z</td>
<td>ʒ</td>
<td>ɣ</td>
<td>h</td>
</tr>
</tbody>
</table>

Table 1. Consonants

Particular qualities have been noted for some of these consonants in stem-initial position. /b/ and /d/ are aspirated whereas /ƀ/ and /Ʉ/ are unaspirated and slightly implosive. /s/, /Ʉ/ and /Ʉ̩/ are never immediately followed by nasal vowels; however, there are a few instances where /m/ and /n/ are followed by oral vowels and one instance has been found where /ʝ/ is followed by an oral vowel. When /ɡb/ is followed by a nasal vowel it becomes [ŋw]. /h/ is rare and occurs mostly in borrowed words. /x̪/ and /ɣ̩/ are labialized velar fricatives.

Orthographic conventions for some of these sounds are: dy for /d/; ny for /ŋ/; Ʉ for /Ʉ/; c for /s/; j for /Ʉ̩/; and xw and hw for /x̪/ and /ɣ̩/. Representative examples of these consonants as they occur word-initially are:
/ʃ/: /ʃ/ 'mirror (up.)
/ʒ/: /ʒ/ 'mold'
/ Billing/ 'line' 

/ŋ/: /ŋ/ 'to see'
/ŋ/: /ŋ/ 'to steal'
/ŋ/: /ŋ/ 'to drink'

/ŋ/: /ŋ/ 'intenter'
/ŋ/: /ŋ/ 'to look into rich soil'
/ŋ/: /ŋ/ 'meme'

/k/: /k/ 'to burn'
/ku/ 'kink'
/k/ 'ripe, fill'

/l/: /l/ 'turn'
/l/ 'duck'
/ŋ/ 'men'

/kp/: /k/ 'bone'
/kp/: /k/ 'stool'
/kp/ 'liten'
1.2. Intervocalic consonants are not a basic feature of individual morphemes in the Grand Bassa dialects of Bassa. When they do occur, they can be assigned to one of these four categories: a) intervocalic consonants which occur as the second consonant in a consonant "cluster", b) intervocalic consonants which appear in reduplicated words, c) intervocalic consonants which occur in borrowed words, d) intervocalic consonants which appear in compounds and e) intervocalic consonants which occur in words which are not immediately recognizable as borrowed words or as compounds.

a) /q/, /n/, /i/ and /m/ can occur as the second member of a consonant "cluster". That is, separating the initial syllabic consonant and the second consonant is a very short, transitional vowel which is entirely predictable. The full vowel spreads to the left of /q/, /n/, /i/ or /m/ and appears in a shortened form. In slow speech this transitional vowel has the same quality as the full vowel whereas in fast speech the transitional vowel may be somewhat centralised. The tone of the transitional vowel may be somewhat higher or lower than the tone of the full vowel. This different tone is predictable in terms of a conditioned glide effect that consonants have on tone (see 3.7.). I do not write the transitional vowel in this paper.

In initial position, /m/ and /n/ have been found to occur before oral vowels in a few instances (see 1.1.). This is not
the case when /m/ or /n/ appears as the second member of a consonant "cluster". After syllabic consonants, /m/ and /n/ always precede nasal vowels while in the same position /ɲ/ and /ŋ/ always precede oral vowels.

Bassa contains many examples of /d/ or /n/ occurring after syllabic consonants. /d/ does not occur after /d/, /m/, /n/ or /ɲ/. /n/ does not occur after /n/, /b/, /d/ or /ɲ/. /d/ and /n/ have the following surface realizations after other consonants: /d/ and /n/ occur as a flap [ɾ] after /t/ or /d/.

/tɹó̞/ 'mountain'  [tɹó̞]
/dnú̞/ 'fog'  [dnú̞]

/d/ occurs as flap [ɹ] after all other consonants.
/n/ occurs as flap [n̪] after all other consonants.

/fdú̞/ 'to float'  [fdo̞]
/xwɗá/ 'rain forest'  [xwɗá]
/dydí/ 'to steal'  [dydí]
/vnè/ 'big'  [vnè]
/cnà/ 'grease'  [cnà]
/gbnè/ 'root'  [gbnè]

Other examples of /d/ or /n/ in this position are:

/ᴧdá/ 'to fold'  /pnè/ 'bow'
/wdí/ 'money, possessions'  /tnú̞/ 'to pluck as corn'
/vdà/ 'to abuse, curse'  /snè/ 'bumps (on people)'
/ə/ and /m/ occur much less frequently than /q/ and /n/ as the second member of such consonant "clusters". /ə/ has been found to occur after /t/, /d/, /d/ and /k/. /m/ has been found to occur after /t/, /n/, /s/, /z/ and /k/.

\(q\dá\) 'to kill'
\(\)\(nmù\) 'to bits'
\(t\bá\) 'to sew'
\(tsè\) 'to teach'
\(d\bá\ n\wá\) 'to stoke a fire'
\(s\bá\) 'to scratch'
\(k\bá\) 'cup'
\(z\bá\) 'fish'
\(k\bá\) 'to be difficult'

b) Reduplication usually occurs either as repetitions of verbal morphemes to form nouns or as ideophonic expressions.

\(\)\(p\bá\) 'slipper'
\(b\bá\) 'ripe'
\(ba\bá\) 'grandfather'
\(m\bá\) 'dry'
\(w\wá\) 'lightning'
\(f\wá\) 'breath'
\(v\wá\) 'many'
\(t\wá\) 'tree (sp.)'
\(d\wá\) 'seasonings for cooking'
\(n\wá\) 'drinking'
\(q\wá\) 'emptiness'
\(p\wá\) 'conspiracy, plot'
\(s\wá\) 'heat'
\(c\wá\) 'bright color'
\(j\wá\) 'trembling'
\(d\wá\) 'come, come'
\(n\wá\) 'relatives'
\(g\wá\) 'duck'
\(k\wá\) 'knock, knock'
\(g\wá\) 'sound of ringing'
\(h\wá\) 'sound of dripping'
\(x\wá\) 'short'
c) Borrowed words especially of English origin form an increasingly larger part of Bassa vocabulary. Such words are introduced either as terms representing new concepts or as additional terms for familiar concepts. In borrowed words, nearly all Bassa consonants occur which are equivalent to English consonants. /v/ is an exception in that it is replaced by /ð/ intervocally. 5a discusses borrowed words in greater detail. Illustrations of borrowed words with intervocalic consonants are:

\[
\begin{align*}
dápò & \quad \text{'lamp'} & 
màzíll & \quad \text{'machine'} \\
sóò & \quad \text{'shovel'} & 
bèll & \quad \text{'belt'} \\
ccòl & \quad \text{'church'} & 
àwà & \quad \text{'hour'} \\
kèkè & \quad \text{'cake'} &
\end{align*}
\]

d) Compound words occur frequently. All Bassa consonants with the exception of /h/ have been found to occur intervocally in compounds. When /dy/ appears intervocally in compounds, it sometimes appears as [ỳ] in some dialects of Grand Bassa. Special tonal rules which apply to noun compounds are discussed in 3.3. Examples of compounds are:

\[
\begin{align*}
/cèè/ & \quad \text{'to write'} & /dỳ/ & \quad \text{'thing'} & \rightarrow & [cèè \, dỳ] & \quad \text{'book'} \\
xwà/ & \quad \text{rain forest} & /gbe/ & \quad \text{'dog'} & \rightarrow & [xwà \, gbe] & \quad \text{'hunting dog'} \\
/dì/ & \quad \text{'to eat'} & /dỳ/ & \quad \text{'thing'} & \rightarrow & [dì \, dỳ] & \quad \text{'food'} \\
bù/ & \quad \text{'gun'} & /dyà/ & \quad \text{'seed'} & \rightarrow & [bù \, dyà] & \quad \text{'gunshot'} \\
dà/ & \quad \text{'knife'} & /dyà/ & \quad \text{'child'} & \rightarrow & [dà \, dyà] & \quad \text{or} [dà \, dyà] & \quad \text{'small knife'}
\end{align*}
\]
e) There is a small category of Bassa words which contain intervocalic consonants and which are not immediately recognizable as members of one of the above categories. This group, for the most part, includes words for musical instruments and living things. I suspect that these words are originally borrowed words or compounds. Either the source of borrowing has not been identified in the case of borrowed words or individual morphemes are not now recognizable in the case of compounds. Below are illustrations of such words with comments as to the possible derivations of a few of them. All intervocalic consonants in this group belong to the lenis category of consonants (see 3.2.).

*gófís* 'black ant (sp.)'  *bánti* 'mouth organ'
*déié* 'mongoose'  *záká* 'musical instrument (sp.)'
*geěkfi* 'giant rat'  *kweesó* 'musical instrument (sp.)'
*gáma* 'musical instrument (sp.)'
*báúdá* 'bird (sp.)' (*bá* 'to color'; *ú* 'first person singular pronoun'; *dá* 'here')
*dàbò* 'old lady' (*dà* 'sister-in-law or mother-in-law')
*bàто* 'friend, ally' (*bàą* 'friend'; *tō* 'war')
1.3. Two consonants, [n] and [m] can be heard in phrase final position after [į] and [ũ] respectively. The [n] or [m] is particularly distinct if another word follows the nasalized ending. These final consonants are purely transitional sounds between the final nasalized vowels and the following initial consonants.

A final [m̄] is most evident in the pronouns for first and second person singular: [m̄] and [m̄]. I believe that these pronouns are actually /ũ/ and /ũ/ with a phonetic final [m]. The Bassa Vah script which has no symbol for /m/ represents these pronouns as nasalised /ũ/.
2. Vowels

2.1. Indian has seven oral vowels and five nasal vowels.

<table>
<thead>
<tr>
<th>Oral Vowels</th>
<th>Nasal Vowels</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>ñ</td>
</tr>
<tr>
<td>u</td>
<td>ñ</td>
</tr>
<tr>
<td>ɛ</td>
<td>ñ</td>
</tr>
<tr>
<td>ɔ</td>
<td>ñ</td>
</tr>
<tr>
<td>a</td>
<td>ñ</td>
</tr>
</tbody>
</table>

Illustrations of some oral and nasal vowels are:

- /i/ "to eat"  ñi "to beat in a sorter"
- /ɛ/ "mother"  ñɛ "giraffe (i.e.)"
- /a/ "train"   ña "cloth"
- /u/ "to go"   ñu "to try"

- /i/ "to step out"  ñi "to eat broken"
- /ɛ/ "crisp"     ñɛ "end of tree"
- /a/ "can"       ña "to snack"
- /u/ "to rest"   ñu "to jump"
- /a/ "to be live" ña "to listen"

... all vowels are long turned (written doubly).

Illustrations of long oral and nasal vowels are:

...
4.2. Oral vowels can occur in certain sequences and nasal vowels can occur in certain sequences. The following chart summarizes the possible sequences of oral vowels and nasal vowels.

<table>
<thead>
<tr>
<th>nasal vowel</th>
<th>oral vowel</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>u e a o a</td>
</tr>
<tr>
<td>j</td>
<td>x x x x j</td>
</tr>
<tr>
<td>e</td>
<td>x x x x</td>
</tr>
<tr>
<td>o</td>
<td>x</td>
</tr>
<tr>
<td>a</td>
<td>x</td>
</tr>
</tbody>
</table>

Table 1. Oral vowel sequences.
x₁: ic, ic and ia occur as ec, ec and ea in some dialects of Grand Bassa.
x₂: uc, uc and ua occur as oc, oc and oa in some dialects of Grand Bassa.
x₃: ii appears as si in some dialects of Grand Bassa in the word xwii (xwsi) 'plaintain'.

bïl  'mud'
pïù  'liver'
dië dyï  'to ask'
dïò  'tree (sp.)'
kïè (kèè)  'to laugh'
pïò (pèè)  'wing'
kpïã kpïã (kpèè kpèè)  'bird (sp.)'
bûl  'trap'
dûû  'rope'
kpûû  'tree (sp.)'

zûô  'thanks'
zuù  'animal (sp.)'
Luò (Lòò)  'squirrel (sp.)'
dyâà (dyóà)  'seed'
Gbeé  'tree'
Bòò  'banana'
Sèè  'red bird (sp.)'
Nôô  '(country devil)'
Gàà  'man'

With the exception of two unusual words, oral vowel sequences begin with i or u. I do not believe that a y exists after i or that a w exists after u. Neither is there any evidence of additional tongue-raising after i to indicate a y nor is there any additional lip-rounding to indicate a w. Intervocalic consonants are not often found within morphemes in the Grand Bassa dialects (see 1.2).

There is evidence, however, that other intervocalic consonants may have originally existed in CVV words of the Grand Bassa dialects. Intervocalic consonants have been recorded in the eastern Bassa dialects. Below are some correspondences between Grand Bassa and Gbii.
Grand Bassa

dyũ̄o  dyũ̄u  'to know'
kì̀  kì̀sè  'to laugh'
dyò̀c  dyò̀c  'ocean'
dé̀  dé̀bè  'stranger'
dù̀ù  dù̀ù  'rope'
nà̀è  nà̀kpsè  'bird'
plì̀  plèfè  'grass'

I believe that the two words which do not correspond to the general vowel sequence pattern are /oi/ sequences. They are /bɔ̀i/ 'fish (sp.)' and /vɔ̀i/ 'fat, fleshy'. June Hobley wrote these words as bɔ̀i and vɔ̀i, and although I hear the [e] in these words, I believe it to be a transitional element. An [e] appears elsewhere as a transitional element when a verb ending in /o/ is followed by an i: [ɔ̀ fɔ̀ nĩ́] 'he is tired' can be contracted to [ɔ̀ fɔ̀i]. It is possible that the words /bɔ̀i/ and /vɔ̀i/ may also be contractions.

Table 4. Nasal Vowel Sequences

<table>
<thead>
<tr>
<th>second vowel</th>
<th>u  ū  ū  ū  ā</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>x x x</td>
</tr>
<tr>
<td>Tɛ.eu</td>
<td>x</td>
</tr>
<tr>
<td>Tɛ.eu</td>
<td>x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>first vowel</th>
<th>ɔ̃  ɔ̃  ɔ̃  ɔ̃  ā</th>
</tr>
</thead>
<tbody>
<tr>
<td>ā</td>
<td></td>
</tr>
<tr>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

I
mati ‘leaf’
ˈtʊu ‘wall’
ˈg intéressant ‘death’
ˈbʊu ‘rat’
ˈgjà ‘tree(sp.)’
ˈzʊu ‘pitcher’
ˈwɛ́-wɛ́ ‘mosquito’
ˈsʊu ‘fish(sp.)’
ˈzʊl ‘court case’
ˈmɑ́ ‘bird’
ˈnɔ́ ‘story’

The pattern for nasal vowel sequences is not as clear as that for oral vowel sequences. One reason for this may be the relative infrequency of nasal vowel sequences.

Bassa also contains a few examples of oral vowels followed by nasal vowels. Usually, these combinations are found in contractions and in verb stems followed by suffixes.

/ˈtæ/ ‘to chew’:
[ˈmʊ jà̂ tæ̂] ‘he will chew the squirrel’
[ˈmʊ mɑ́ ɡɛ́lɛ́ mʊ] ‘he went to the farm’:
[ˈmʊ mɑ́ ɡɛ́iɛ́] ‘he went to the farm’ (contracted)
[ˈwɛ́ nɨ̄] ‘he is sick’:
[ˈwɛ́] ‘he is sick’ (contracted)

There are also a few oral-nasal vowel sequences which appear within morphemes. In all examples of such words that I have elicited, either the first vowel is an /ɔ/ or /o/ and not subject to nasalization, or the first vowel follows a consonant such as dy or ɓ which cannot be contiguous to a nasal vowel.

dɛ́iwɛ́ ‘mongoose’
ˈbɑ́ ˈbɑ́ ‘many’
ˈjʊ́ jʊ́ ‘bird(sp.)’
ˈmɑ́ ɗyɨ́ ‘good’
ˈsɛ́ or ɔɛ́ ‘all’
In all examples of oral-nasal sequences that I have encountered, front oral vowels are followed by /ɨ/ and non-front vowels are followed by /ʊ/.

2.4. Sequences of more than three vowels are found in certain expressions in which the unusual length is the result of the addition of a long vowel to a stem to add emphasis to the statement. Occasionally such sequences are found in contractions of two or more words.

[dyiː̆ː] 'come here' (used when one is impatient)
[dé pée niːo] 'it is cold there' (answer to standard greeting)
[siau] 'trousers' (contraction of si 'to step in, dā 'here' and mú 'in')
3. Tone

3.1. Bassa is a discrete level tone language.\textsuperscript{4} Hobley (1964) identified three tonemes (high, mid and low), but she noted that there were two groups of low tones. One group of low tones rises before a following low tone and the other group of low tones does not. I would like to propose that the group of low tones which rises before a following low is actually an underlying low-mid tone. Illustrations of these four tonemes on CV words are:

<table>
<thead>
<tr>
<th>Tone Type</th>
<th>Word Example 1</th>
<th>Word Example 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>High tone</td>
<td>xwɛ 'corpse'</td>
<td>kpɛ 'bone'</td>
</tr>
<tr>
<td>Mid tone</td>
<td>xwɛ 'deer, falling tonga'</td>
<td>kpɛ 'debt'</td>
</tr>
<tr>
<td>Low tone</td>
<td>hwɛ 'to finish'</td>
<td>gbɛ 'bad'</td>
</tr>
<tr>
<td>Low-mid tone</td>
<td>hwɛ 'chimpanzee' (baboon)</td>
<td>gbɛ 'to lock'</td>
</tr>
</tbody>
</table>

Low tone does not occur on CV nouns.

The following rules account for the phonetic appearance of the low-mid tone:

\underline{Right Spread of Low-Mid Tone}

The mid segment of a low-mid tone spreads to the right of the vowel it marks.

\underline{Loss of Mid Segment of Low-Mid Tone}

When a low-mid tone is followed by a mid or high tone, the mid segment of the low-mid tone is lost to the following
mid or high tone. When the low-mid tone occurs in phrase final position the mid segment is not heard or is heard very faintly.

/jâ/ /sô/ 'squirrel' 'two'

jâ sô Right Spread of Low-Mid Tone
jâ sô Loss of Mid Segment of Low-Mid Tone
jâ sô 'two squirrels'

/jâ/ /tâ/ 'squirrel' 'three'

jâ tå Right Spread
jå tå Loss of Mid Segment
jå tå 'three squirrels'

/jâ/ /nôm/ 'squirrel' 'five'

jâ nôm Right Spread
jâ nôm 'five squirrels'

/gbâ/ /gbô/ 'to lock' 'house, door'

gbâ gbô Right Spread
gbâ gbô Loss of Mid Segment
gbâ gbô 'lock the door'

Words with low-mid tone and words with low tone are difficult for me to differentiate in phrase-final position. The final pitch of a low-mid tone may be slightly higher than the final pitch of a low tone. It is significant, however, that a person who is literate in the Bassa Vah script will immediately recognize a difference between the two tones and
will mark the difference using different Vah tone marks (see 6.).

3.2. Other rising and falling tones occur which are conditioned by two sets of consonants called lenia and fortis (Hobley 1964). The fortis consonants are marked by an asterisk in Table 6.

<table>
<thead>
<tr>
<th>☐</th>
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Table 6. Fortis and Lenis Consonants

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<tr>
<th>☐</th>
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Fortis consonants

Lenis Raising and Fortis Lowering

The lenis set of consonants has a raising effect on the initial part of low and low-mid tones. The fortis set of consonants has a lowering effect on the initial part of mid and high tones.

Table 7. illustrates each of the four tonemes high, mid, low and low-mid as they occur with and without conditioned glides. Gliding tones for high and mid tonemes follow fortis consonants, and gliding tones for low and low-mid tonemes follow lenis consonants.
Table 7. Level Tones and Gliding Tones on CV Words

<table>
<thead>
<tr>
<th>Level Tones</th>
<th>Gliding Tones</th>
</tr>
</thead>
<tbody>
<tr>
<td>(lenis)</td>
<td>(fortis)</td>
</tr>
<tr>
<td><strong>High Tone</strong></td>
<td></td>
</tr>
<tr>
<td>/dû/</td>
<td>gbá gbá/</td>
</tr>
<tr>
<td>[dû] 'to pick up'</td>
<td>gbá gbá] 'trick'</td>
</tr>
<tr>
<td>/bá/</td>
<td>dû/</td>
</tr>
<tr>
<td>[bá] 'to plant'</td>
<td>dû] 'head'</td>
</tr>
<tr>
<td><strong>Mid Tone</strong></td>
<td></td>
</tr>
<tr>
<td>/kpê/</td>
<td>gbê/</td>
</tr>
<tr>
<td>[kpê] 'trap'</td>
<td>gbê] 'dog'</td>
</tr>
<tr>
<td>/dà/</td>
<td>vò/</td>
</tr>
<tr>
<td>[dà] 'to fry'</td>
<td>vò] 'tail'</td>
</tr>
<tr>
<td>(fortis)</td>
<td>(lenis)</td>
</tr>
<tr>
<td><strong>Low Tone</strong></td>
<td></td>
</tr>
<tr>
<td>/zà/</td>
<td>tà/</td>
</tr>
<tr>
<td>[zà] 'to take'</td>
<td>tà] 'to chew'</td>
</tr>
<tr>
<td>/hwè/</td>
<td>kò/</td>
</tr>
<tr>
<td>[hwè] 'to finish'</td>
<td>kò] 'to sit'</td>
</tr>
<tr>
<td><strong>Low-Mid Tone</strong></td>
<td></td>
</tr>
<tr>
<td>/bà/</td>
<td>bà/</td>
</tr>
<tr>
<td>[bà] 'shoe'</td>
<td>bà] 'father'</td>
</tr>
<tr>
<td>/dè/</td>
<td>ëè/</td>
</tr>
<tr>
<td>[dè] 'palm kernel'</td>
<td>ëè] 'second person plural pronoun'</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

The **Lenis Raising** and **Fortis Lowering** rule is incorporated into the **Loss of Mid Segment** of Low-Mid Tone Rule. As stated in **Loss of Mid Segment**, "the segment of the low-mid tone is lost to the following mid or high tone". The following mid or high tone must be a phonetic mid or high tone. So if a following tone is an underlying low or low-mid tone preceded by a lenis consonant, **Lenis Raising** will cause an initial mid tone to appear. In the
following examples /ba/ 'shoe' and /hwâ/ 'chimpanzee' lose their final mid segments to the phonetic mids of /bê/ and /tà/ respectively.

/ba/ /bê/ 'shoe' 'plural marker'
ba bê Right Spread
ba bê Lenia Raising
ba bê Loss of Mid Segments

/hwâ/ /tà/ /dê/ 'chimpanzee' 'to chew' 'palm nut'
hwâ tà dê Right Spread
hwâ tà dê Lenia Raising
hwâ tà dê Loss of Mid Segment,

A similar kind of the chimpanzee chewed the palm nut

Similarly, a final mid segment of a low-mid tone will not be lost to a following phonemic mid tone which has had Fortis Lowering applied to it. In the following example /ba/ 'shoe' does not lose its final mid segment to the underlying mid in /hinya/ 'four'.

/ba/ /hinya/ 'shoe' 'four'
bâ hinya Right Spread
bâ hinya Fortis Lowering

/bà hinya/ 'four shoes'
3.3. When a lenis consonant precedes a low-mid tone, lenis raising will not be heard in certain circumstances.

/ɓa\~h:\m\~n/ 'father five'
ɓa\~ h:\m\~n Right Spread
ɓa\~ h:\m\~n Lenis Raising
ɓa\~ h:\m\~n 'five fathers'

The above example illustrates a situation in which three tone segments could occur on a single vowel if Lenis Raising were applied to low-mid tones which did not lose their mid segments. Three tones occurring on a single vowel would be rather cumbersome and in these cases the lenis raising is lost.

3.4. There is one more tone glide — high-low — which appears frequently as a conditioned glide (see Right Spread of High Tone, 3.5.) and rarely as the underlying tone on a CV word. It has been found to be the underlying tone on three CV words: /mɔ/ 'first person singular pronoun, emphasized'; /nɔ/ 'here' and /pù/ 'just, only?' and on one reduplicated word: /pûpû/ 'dust'.
3.5. On long vowels (CVV) there are sixteen possible combinations of the four tonemes described above. The following chart summarizes these possibilities and illustrates which combinations have been found to occur.

Table 3. Tone Sequences on CVV words

<table>
<thead>
<tr>
<th>Second tone</th>
<th>high</th>
<th>mid</th>
<th>low</th>
<th>low-mid</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>mid</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>low</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>kw-mid</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>First tone</th>
<th>high-high</th>
<th>high-mid</th>
<th>high-low</th>
</tr>
</thead>
<tbody>
<tr>
<td>dyōo 'ocean'</td>
<td>glō 'death'</td>
<td>dēe 'stranger'</td>
<td></td>
</tr>
<tr>
<td>sōo 'rock'</td>
<td></td>
<td></td>
<td>tōo 'to limp'</td>
</tr>
<tr>
<td>xwīț 'plaintain'</td>
<td></td>
<td></td>
<td>dyūa 'seed'</td>
</tr>
<tr>
<td>xwīț 'unmarried man or woman'</td>
<td></td>
<td></td>
<td>gbāa 'palm grub'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mid-high</th>
<th>mid-mid</th>
<th>mid-low</th>
</tr>
</thead>
<tbody>
<tr>
<td>xwēț 'fish hook'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dyōo 'fish (sp.)'</td>
<td>kpeē 'bell'</td>
<td>dyoō 'sky'</td>
</tr>
<tr>
<td>kpuu 'fish (sp.)'</td>
<td>miō 'tongue'</td>
<td>bīl 'mud'</td>
</tr>
<tr>
<td>cāa 'parrot'</td>
<td>zūō 'animal (sp.)'</td>
<td>qaō 'tree (sp.)'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>kāa 'to open'</td>
</tr>
<tr>
<td>low-high</td>
<td>low-mid</td>
<td>low-low</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>gàà 'mat'</td>
<td>màà 'woman'</td>
<td>bùl 'trap'</td>
</tr>
<tr>
<td>gbù́ét 'bird (sp.)'</td>
<td>zùó 'thanks'</td>
<td>hwlè 'road'</td>
</tr>
<tr>
<td>gbàá 'farm shelter'</td>
<td>dÌë 'mouse'</td>
<td>gbêà 'head wife'</td>
</tr>
<tr>
<td>jéé 'snake'</td>
<td>gàà 'man'</td>
<td>qùà 'monkey (sp.)'</td>
</tr>
<tr>
<td>vèè 'fish (sp.)'</td>
<td></td>
<td>kùì 'work'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>low-mid --low</th>
<th>low--low-mid</th>
</tr>
</thead>
<tbody>
<tr>
<td>sèè 'orange'</td>
<td>bùl 'brother-in-law'</td>
</tr>
<tr>
<td>hwlè 'hungry time'</td>
<td>kòó 'bucket'</td>
</tr>
<tr>
<td>gbù́t 'tree (sp.)'</td>
<td>plì 'grass'</td>
</tr>
<tr>
<td>gbàá 'to save'</td>
<td>bli 'eddoe'</td>
</tr>
</tbody>
</table>

Verbs occur only with tone sequences ending in low tone, i.e. high-low, mid-low, low-low and low-mid--low.

The phonetic realizations of these CVV tone sequences reflect the tonal rules of the language in general. Low and low-mid tones are raised following lenis consonants and mid and high tones are lowered following fortis consonants.

```
/kòò/ [kòò] 'bucket' /gbàá/ [gbáà] 'pålm grub'
/gíò/ [gíò] 'death' /qùà/ [qùà] 'monkey (sp.)'
```

Not all sequences of tones occur with both fortis and lenis consonants; the conditioned glides cause certain groups of tone sequences to fall together.
words with /high-low/ tones are realized as high-

high-low : /déè/ |déè| 'to be sweet; stranger'; /dyúá/
|dyúá| 'seed'. This right spread of high tone also appears
across morpheme boundaries.

Right Spread of High Tone

when high tone is followed by low tone, the high tone spreads
to the following low tone causing a high-low tone to appear.
A high tone remains on the original high segment.

/ní/ kòò/ 'my bucket'
|ní kòò |

when a fortis consonant appears between the high and low
tones, a high-low fall is not heard.

/ní/ dè/ 'my palm kernel'
|ní de |

The combinations of low-mid tone with the other three tones
are the most interesting of the CVV tonal patterns. Only after
examining all tonal patterns within morpheme boundaries as well
as across morpheme boundaries was I able to establish the
pattern seen in Table 6.
The /CVV/ combination is another example of Right Spread of Low-Mid. In such /CVV/ words no consonant separates the low-mid tone from the following low, and so the mid tone of the low-mid tone spreads to the right and appears on the following low.

/šē/ [šē] 'orange'

/hwia/ [hwia] 'hungry time'

/gbaa/ [gbaa] 'to free, redeem'

June Hobley (1964) analyzed these words as /CVV/ words. She suggested that the second high-low tone was lowered to a mid-low tone by the preceding low tone. Some Bassa Vah script writers represent such words as sequences of three vowels CVVV. However, the length of these words is not three full vowel lengths, and there are no other examples of three vowel sequences in the language occurring within morphemes. I came to the conclusion that these words are all sequences of a low-mid tone followed by a low tone after I discovered a word composed of two morphemes, the first a CV with a low-mid tone and the second a V with a low tone.

/Bē/ 'second person plural pronoun' /à/ 'first person plural pronoun, exclusive' i.e. we without you'

Bē  à  Right Spread

[baa] 'first person plural pronoun, inclusive' i.e. we and you
This word demonstrates that the low-mid tone spreads to a following low tone vowel when no consonant separates the two vowels.

The /CVV/ words appear as [CVV] in phrase-final position, and they are phonetically similar to /CVV/ words (cf. 3.1. /CV/ and /CV/ words). However, the second low in /CVV/ words is slightly lower than the preceding low: /buː/ [buː] 'brother-in-law'; /buː/ [buː] 'trap'. The conditioned lowering of a low tone following a low tone is not uncommon in Liberian languages and has been found to occur in a dialect of Interior Grebo (Cedepo) and in Mano. Thus, when a low tone appears contiguous to a low tone the underlying tone of the second low is probably non-low. The following two sentences illustrate this feature as it occurs across morpheme boundaries.

/ˈuː/ 'first person singular pronoun'; /zɔː/ 'to ask for'; /ˈuː/ 'second person singular pronoun':

| o zɔʊ | he asked for me |
| o zɔʊ | he asked for you |

When a /CVV/ word is followed by a low tone, the final rise is shortened. That is, the initial low of the low-mid tone is lost to the preceding low and the words appear as [CVV]:

/buː/ 'brother-in-law'; /hɔː/ 'five';

[buː hɔː] 'five brothers-in-law'

I have not been able to identify any examples of /CVV/, /CVV/ or /CVV/ sequences occurring within a morpheme although I have found them to occur across a morpheme boundary, i.e.
a high, mid or low tone CV noun followed by a low-mid tone V specific marker. The tone sequences resulting from such noun-specific marker constructions are discussed in 3.6.

3.6. The specific marker is a vowel which appears in post-nominal position and which I believe has a low-mid tone /ɔ/. It is marked as a low-mid tone in the Bassa Vah script. In post-nominal position, the specific marker serves to illustrate all combination of high, mid, low and low-mid tones followed by low-mid tones.

When the specific marker occurs after a mid or low tone, it undergoes regular application of Right Spread and of Loss of Mid Segment rules.

/də/ 'mother'; /ɔ/ 'specific marker'; /gbù/ 'to run';
/dàbò/ 'old lady'; /mũ/ 'to go':

/də ɔ mũ māa/ 'mother-specific marker -go-past tense marker'
də ɔ mũ māa Right Spread
də ɔ mũ māa Loss of Mid Segment
[də mũ māa] 'the mother went'

/dàbò ɔ gbù ní/ 'old lady-specific marker-run away-recent past marker'

dàbò ɔ gbù ní Right Spread
dàbò ɔ gbù ní Loss of Mid Segment
dàbòɔ gbù ní [tone contraction; cf. /.CV/ 3.5.]
dàbòɔ gbù ní 'the old lady ran away'
When the specific marker occurs after high or low-mid tones, the tone of the specific marker always appears as a mid tone regardless of the following tone. The causes for this unexpected surface form are not known.

/ká/ 'crab'; /hwâ/ 'chimpanzee'; /zâ/ 'to vomit'; /nâ/ 'to drink'
/ká o mû mâa/ 'crab-specific marker-to go-past tense marker'
/ká o mû mâa/ 'the crab went'

/ká o gbû mâa/ 'crab-specific marker-run-past tense marker'
/ká o gbû mâa/ 'the crab ran away'

/hwâ o nâ nî/ 'chimpanzee-specific marker-drink-water'
/hwâ o nâ nî/ 'the chimpanzee drank water'

/hwâ o zâ o nî/ 'chimpanzee-specific marker-vomit-pronoun-
recent past tense marker'
/hwâ o zâ o nî/ 'the chimpanzee vomited it'

3.7. In /C_{1}C_{2}V(V)/ \[C_{1}VC_{2}V(V)\] words, the tones of the transitional vowel and of the full vowel depend on the underlying tone of the full vowel and on the fortis-lenis status of C_{1} and C_{2}.

When a lenis C_{1} precedes a mid or a high tone, the transitional vowel and the full vowel are level high or mid tones. When a fortis C_{1} precedes a mid or a high tone, Fortis Lowering applies causing a lower tone to appear on the transitional vowel.
/dɔbɑ/  | dɔˈbɑ́ | 'to kill'  
/bʊtʃ/  | bʊˈtʃ̩ | 'to sing'  

dɛtʃ/  | dɛ́tʃ̩ | '(red deer)'  
/gətʃ/  | gəˈtʃ̩ | 'farm'  

When a lenis C₁ precedes a low or a low-mid tone, the transitional vowel is mid and the full vowel is mid-low or mid depending on the rapidity of speech.

/sal/  | sɑ́l̩ | 'cow'  
/kəts/  | kəˈtʃ̩ | 'cup'  

When a fortis C₁ precedes a low tone, the transitional vowel is low and the full vowel is mid-low or low depending on the rapidity of speech.

/vnɛ/  | vɛ́n̚ | 'big'  

When a fortis C₁ precedes a low-mid tone, the transitional vowel and the full vowel appear to be low. I am not able to hear any effect of *Lenis Raising* after C₂ in phrase-final position.

/hwətʃ/  | hwəˈtʃ̩ | 'wooden pan'  

When *Loss of Mid Segment* does not apply to low-mid tones, the low mid tone appears divided between the transitional vowel and the full vowel.
/hwļu hɔm/ 'wooden plate-five'
   | hw-iiu hɔm/ 'five wooden plates'
/bɔ̀li hɔm/ 'cow-five'
   | bii hɔm/ 'five cows'

3.8. Tone patterns on compound words are generally predictable given the lexical tones of the component morphemes.

**Compound Noun Formation**

The final tone in a compound is assigned low tone except when the final tone is an underlying low-mid tone, in which case the low-mid tone is retained. An underlying final tone which is low becomes extra low (see 3.9.).

/nɓ/ 'water' /ɗu/ 'head' /nɓ d`u hɔm/ 'five springs'
/bɔ̀/ 'banana' /cũ/ 'tree' /bɔ̀ cũ hɔm/ 'five banana trees'
/mɔɔ/ 'rice' /ɗi/ 'to eat' /n̥aŋ/ 'bird' /mɔɔ ɗi n̥aŋ/ 'five rice birds'
/nɔɔ/ 'breast' /bɔ̀/ 'rice bag' /nɔɔ bɔ̀ hɔm/ 'five brassieres'

While most compounds follow this rule I have found one word /gbɔ/ where a final low-mid tone does not retain its low-mid tone but changes to low.

/suñu / 'school' /gbɔ/ 'house' /sukuŋ gbɔ hɔm/ 'five school houses'
/biį / 'mud' /gbɔ/ 'house' /biį gbɔ hɔm/ 'five mud houses'

There are also a few noun-noun constructions which do not undergo Compound Noun Formation:
/bà/ 'shoe' /dúú/ 'rope' — [bà dúú] 'shoe lace'
/gbà/ 'law' /dè/ 'mother' — [mà dè] 'girl friend'

When the non-final syllable in a compound ends in a high-low tone, the high-low tone spreads to the right. While this rule occurs most often in compounds, it is also applicable to non-compound constructions.

Right Spread of High-Low Tone

When a high-low tone is followed by a low tone, the high-low tone spreads to the following low tone. A high tone remains on the original high-low segment.

/sùkùù dyú/ 'school-child'
sùkùù dyú Compound Noun Formation
sùkùù dyú Right Spread of High Tone
sùkùù dyú Right Spread of High-Low Tone
sùkùù dyú Lenis Raising
[sùkùù dyú] 'school child'

/mò nì bò/ 'I(emphatic)- to be located-there'
mò nì bò Right Spread of High-Low Tone
mò nì o contraction
mò nì o Low Töne Replacement (see 3.9)
mò nì o Right Spread of High-Low Tone
[mò nì o] 'I was there'

If a fortis consonant appears between a high-low tone and a low tone, the high-low tone is lost (cf. Right Spread of High Tone; 3.5.)
Loss of High-Low Tone

When a high-low tone is preceded by a fortis consonant the high tone is lost.

/sùkùù gbò/ 'school-house'

sùkùù gbò Right Spread of High Tone
sùkùù gbò Right Spread of High-Low Tone
sùkùù gbò Loss of High Low Tone
sùkùù gbò Right Spread of Low Mid Tone
sùkùù gbò Loss of Mid Segment
sùkùù gbò Lenis Raising
[sùkùù gbò] 'school house'

3.9. One morphotonic change has been identified which appears when a stem morpheme and a functor such as a verbal ending or a preposition are joined.

Low Tone Replacement

When a stem morpheme ends in low tone and is followed by a V morpheme with no intervening consonant, the tone of the V morpheme becomes low if it is not low already.

/ɔ fɛ ni/ 'he-to fear- recent past marker'
ɔ fɛ i contraction
ɔ fɛ i 'Low Tone Replacement'
[ɔ fɛi] 'he is afraid'

/ɔ zɔ ò mān/ 'he-to:ask for-it-past tense marker'
ɔ zɔ ò mān Low Tone Replacement
[ɔ zɔ ò mān] 'we asked for it'
4. **Intonation**

Wh-questions are marked by a question word at the beginning of a statement and by a particle at the end. No special intonation is required. Yes-No questions are marked by an intonational feature.

**Yes-No Question Formation**

a) When the final vowel in a statement ends in high, mid or low-mid tone, a yes-no question is formed by adding an additional vowel to the final vowel of the statement. This additional vowel has the same quality as the final statement vowel except that it always carries low tone.

\[
\begin{align*}
\text{[o m̀o gbe]} & \quad \text{'It is a dog.'} & /gbe/ & \text{'dog'} \\
\text{[o m̀o gbê]} & \quad \text{'Is it a dog?'} \\
\text{[o m̀o gbô]} & \quad \text{'It is a house.'} & /gbô/ & \text{'house'} \\
\text{[o m̀o gbô̂]} & \quad \text{'Is it a house?'}
\end{align*}
\]

b) When the final vowel in a statement ends in low tone, a yes-no question is formed by adding an additional vowel to the final stem vowel of the statement. The additional vowel has the same quality and tone as the final stem vowel.

\[
\begin{align*}
\text{[o m̀o hwil̀e]} & \quad \text{'It is a road.'} \\
\text{[o m̀o hwil̀ê]} & \quad \text{'Is it a road?'} \\
\text{[o m̀o d̀ì̀o]} & \quad \text{'It is a tree (sp.).'} \\
\text{[o m̀o d̀ì̀ô]} & \quad \text{'Is it a tree (sp.)?'}
\end{align*}
\]
[ō nī dē tā ǎu] 'he is chewing a palm kernel.' /tā/ 'to chew'
[ō nī dē tā ǎu] 'is he chewing a palm kernel?'
[ō mũ gbō gō ū] 'he will build a house.' /pō/ 'to build, throw'
[ō mũ gbō gō ū] 'will he build a house?'
5. Borrowed Words

English words which have been incorporated into the Bassa language exhibit regular phonological changes from English to Bassa. Not only are consonants and vowels modified to conform to Bassa phonology, but tone is also assigned to English words in a systematic way. Some of the more obvious patterns of English loan words are summarized here.

5.1. Consonants

Bassa replaces unknown English consonants and known, native consonants in unfamiliar positions with the closest equivalent possible in Bassa. [w'qy] is substituted for word-initial [r] as in wqédio 'radio' and wqùù 'room'. [q] is substituted for word-initial [l] as in qápò 'lamp'. [s] replaces initial [s] as in sósò 'shovel'. [b] is substituted for intervocalic [w] as in sósò 'shovel' and gùjà 'gravy'.

The final consonants [l] and [r] are dropped: kàà 'car'; bòò 'ball'. Final consonants are also dropped on two syllable words with stress on the first syllable and on all words with long vowels or diphthongs in the final syllable.

<table>
<thead>
<tr>
<th>English</th>
<th>Bassa</th>
</tr>
</thead>
<tbody>
<tr>
<td>'checkers'</td>
<td>cókò</td>
</tr>
<tr>
<td>'deacon'</td>
<td>díkò</td>
</tr>
<tr>
<td>'baptize'</td>
<td>bátáá</td>
</tr>
<tr>
<td>'to beat'</td>
<td>bìl</td>
</tr>
<tr>
<td>'chain'</td>
<td>cósù</td>
</tr>
<tr>
<td>'shovel'</td>
<td>sósò</td>
</tr>
</tbody>
</table>

Bassa adds a final vowel (either i or e) to a word-final
consonant when the English word is a monosyllabic word containing a short vowel or when the English word is a polysyllabic word with stress on the final syllable and a short vowel in the final syllable.

kékè 'cake'        slmétè 'cement'
sótè 'shirt'        bátì 'belt'
cócì 'church'       dààsì 'gift, bribe (dash)'
blkósì 'because'

When the English word contains a consonant cluster Cr or C₁, a transitional vowel is inserted in Bassa. Similarly, the transitional vowel is also inserted in borrowed English words like 'battery' and 'Bible' which have syllabic consonants similar to the Bassa syllabic consonants.

kìísímòsì 'Christmas' [k'ìísímòsì]
ghì̀sè 'gravy'     [g'ìsì̀sè]
bádì 'battery'     [bádì̀]
báddò 'Bible'      [báddò]

When the English word contains any other consonant cluster, one or both of the consonants may be dropped.

sótè 'shirt'        bátâá 'to baptize'
cócì 'church'       màkà̀tì 'market'
slmétè 'cement'     zìì 'zinc'
5.2. Vowels

When a borrowed English word contains an unfamiliar vowel or diphthong, the vowel or diphthong is replaced by the closest Bassa equivalent.

\[ \text{\vowels} \]
is replaced by \( \text{o} \) or \( \text{a} \):
- tésl 'taxi'
- ðápò 'lamp'

\[ \text{i} \]
is replaced by \( \text{oi} \):
- kośà 'cupboard'
- sósò 'shovel'

\[ \text{I} \]
is replaced by \( \text{i} \) or \( \text{e} \):
- ðisì 'to fix'
- dðëè 'to drill'

\[ \text{ai} \] and \[ \text{au} \] are replaced by \( \text{ai} \):
- ðàmà 'diamond'
- ðawà 'hour'

5.3. Tone

Tone is assigned to borrowed words in accordance with English stress patterns.

Two-syllable English words with stress on the first syllable or single syllable words beginning with a lenis consonant are assigned \( \text{CVCV} \),

- cákò 'checkers'
- cósìl 'church'
- têsè 'taxi'
- pósè 'purse'
- sójà 'soldier'
- kófl or kófdè 'coffee'

Single-syllable English words beginning with a fortis consonants are assigned \( \text{CVV}, \text{CV(V)CV} \), or \( \text{CVVV} \).
bîl 'to beat'  daàśî ' (dash)'
ziî 'zinc'  bôțiî 'belt'

Two syllable English words with stress on the second syllable or three or four syllable words with stress on the second syllable are assigned CVcV(C)_V,
blîkôsl 'because'  dâsîdqà 'Liberia'
slmêtê 'cement'  màsîî 'machine'
àpôsò 'apostle'

Three syllable English words with stress on the first and last syllable are assigned CV(C)VcVV,
môtô kââ 'motorcar'  kêsîîí 'kerosine'

Two syllable English words with syllabic liquids in the last syllable are assigned CVcCV [CVcCV]
bâtdê 'battery'  dâtdê 'doctor'
bâsîdô 'Bible'

Borrowed words are also subject to conditioned glides so that high tones following a fortis consonant appear as rises and low tones following a lenis consonants appear as falls:
bûçu [bûçu] 'blue'; bôs [bôs] 'ball'; blîkôsl [bîkôsl] 'because'.

6. Vah Script

6.1. Bassa has an indigenous alphabetic writing system called the Vah script. The word ва means sign or symbol. The script is said to have originated from various types of symbolic communication including facial expressions and leaves which had been folded and bitten leaving a characteristic toothprint. Some time in the early or middle part of the 19th century a man called Diwada lived who was an expert in this manner of communication. Diwada used to teach the symbols to Bassa women to enable them to arrange meetings with their lovers. Diwada taught these symbols to a chief's wife called Tomаа, and when the chief discovered the liaison between Tomаа and Diwada, he arranged to sell Diwada to some slave traders. After some time the chief also sold his wife Tomаа because she continued to be unfaithful to him. Both Diwada and Tomаа were sent to the U.S. where they met. One of their children became interested in the symbols and learned them.

In the latter part of the 19th century, a Bassa boy later called Dr. Thomas Darwin Lewis was brought to the U.S. by some missionaries. Dr. Lewis attended high school in the southern part of the U.S., and he completed medical studies at Syracuse University. During his stay in the U.S., Dr. Lewis learned the Bassa symbols, presumably from the child of Diwada and Tomаа, and he 'modernized' them. When he
returned to Liberia in 1910, Dr. Lewis introduced the modernized symbols, translated Biblical passages using the script, taught Bassa people to read and write the script and imported a printing press from Germany for the Vah alphabet. Table 10 contains a sample of the script as produced by this press.

It is not clear at what point the script developed from the original Bassa symbols contained in facial expressions and leaf imprints to an alphabet. However, Dr. Lewis claimed that he only modernized the script that he had learned in the U.S. Presently, the script is used mainly for letter writing by older people. The printing press was in working condition until a few years ago. The remains of it are now located in the Fair Grounds building of Lower Buchanan, Grand Bassa County.

6.2. The Vah script has 30 characters representing phonological segments plus 5 tone marks.

<table>
<thead>
<tr>
<th>Table 9. Vah Script Consonants</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 p</td>
</tr>
<tr>
<td>Z b</td>
</tr>
<tr>
<td>G s</td>
</tr>
<tr>
<td>G m</td>
</tr>
<tr>
<td>ʔ f Z s</td>
</tr>
<tr>
<td>ʔ v ʔ z</td>
</tr>
<tr>
<td>ʔ w [əɾ]</td>
</tr>
<tr>
<td>A t Z c A k ʔ kp</td>
</tr>
<tr>
<td>ʃ d ʔ j S g ʃ gb</td>
</tr>
<tr>
<td>ɾ d ʃ dy ʃ ny</td>
</tr>
<tr>
<td>ɾ x w</td>
</tr>
<tr>
<td>ɾ hw</td>
</tr>
<tr>
<td>ɾ h</td>
</tr>
</tbody>
</table>
Table 10
Sample of the Baasa Vah Script

| "ወንን" | 5 |
| "እታታ" | 6 |
| "ወንን" | 7 |

\[ \text{አንሸ} \]
Table 11. Yaa:Script Vowels

\[\text{\begin{tabular}{ll}
\text{ŋ} & \text{u} \\
\text{ʊ} & \text{o} \\
\text{ʊ} & \text{o} \\
\text{ʊ} & \text{ʊ}
\end{tabular}}\]

Nasalization is indicated by the symbol \(\text{ŋ}/(\text{n}/)\) in post-
vocalic position. It is written following every nasal
vowel and is sometimes attached to the vowel: \(/ˈkʊ̥a/\ 'work'\)
\(\text{ŋ}\text{ŋ}̄\text{ŋ}̄\). Intervocalic \(/n/\) is represented by a double \(\text{ŋŋ}\) thus
avoiding confusion with \(\text{ŋ}\) as a sign for nasalization: \(/vancouver/\)
'big' \(\text{ŋŋ}33\text{ŋ}3\).

There are no separate symbols in the script for \(/m/\) or
\(/ny/\). These consonants are indicated by the letter \(\text{ŋ}/(\text{n}/)\)
written after \(\text{ŋ} \text{ŋ}/(\text{n} \text{n}/)\) or \(\text{ŋ} \text{ŋ}/(\text{d} \text{n}/)\): Consequently, the
script has no way of marking \(/m/\) or \(/dy/\) when they are followed
by oral vowels. The following minimal pair is written the same:
\(\text{ŋn}3\) \(/\text{man}/\ 'to make a mistake' and \(/\text{ban}/\ 'friend'\).

The script has a symbol for flap \(\text{f}\). \(\text{f}\) is an allophone
of \(/d/\) and appears only after \(/d/\) or \(/t/\). I have been told
by James Morgan of Buchanan that although Dr. Lewis introduced
the \(\text{f}\) symbol, he did not use it himself.

In words with a transitional vowel between a syllabic con-
sonant and a medial consonant, the Basse script represents the
transitional vowel with the same vowel symbol used for the
full vowel: \(\text{ŋŋ}33\text{ŋ}3\) \(/vancouver/\ 'big'\).
6.3. The Vah script has five tone marks which are written inside the vowel symbols. The following chart illustrates these marks as they appear inside the vowel symbol ə (a).

Table 12. Vah Script Tones

<table>
<thead>
<tr>
<th>marks</th>
<th>translation in Bassa description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ə̀</td>
<td>stress the word</td>
</tr>
<tr>
<td>ə́</td>
<td>relax the word</td>
</tr>
<tr>
<td>ə̊́</td>
<td>raise voice from low</td>
</tr>
<tr>
<td>ə̃́</td>
<td>slant the word</td>
</tr>
<tr>
<td>ə̃̃́</td>
<td>double</td>
</tr>
</tbody>
</table>

In learning the tonal marks, students of the script practice these tones in a chanting rhythm much as one might practice singing the "A, B, C's". The students sing: ə́, ə̀, ə̊́, ə̃́, ə̃̃́; ó, ɔ, ɔ̊́, ɔ̃́, ɔ̃̃́ etc. By repeating this ordered chanting, any script writer can pick out what tone should be marked for a particular word. It is helpful and interesting to study the Vah script tone marks in relation to a tonal analysis of the language.

The most noteworthy tone of the Vah tone system is the 'slant the word' tone. This tone is equivalent to the underlying low-mid tone which is not audible or only barely audible when it appears on a word pronounced in isolation. Thus, a pair of words such as /dè/ 'palm kernel' and /dɛ́/ 'to set down' are difficult to distinguish in isolation. A Bassa person who knows the script will immediately recognize that 'palm kernel'
requires a 'slant the word' tone and that 'to set down'
requires a 'relax the word' tone.

'Stress the word' is equivalent to high tone. 'Relax
the word' is equivalent to low tone. 'Raise voice from low'
is equivalent to mid tone. 'Double' is equivalent to a high
tone followed by a low. The double tone sounds to me as if
it is used to mark tone on two vowels although it is written
on a single vowel. The word for 'Bassa' "Bəsə" is written
\( \text{ə} \) \( \text{ə} \). In oral practice the mid, rise and high-low tones
are exaggerated in length. However, they are all used to mark
the tone of individual vowels in written form.
Footnotes

1Mr. Joseph M.N. Gbadyu, Supervisor of Schools Grand Bassa County, first related this history to me. Many of the conclusions reached in this paper are the results of conversations held with Supervisor Gbadyu, Reverend Abba Karmga and Mr. James Morgan all of whom reside in Buchanan. Reverend Karmga provided most of the historical information concerning the Vah script. Mr. Morgan aided me in much of the phonological analysis. His comments and suggestions have been particularly helpful both because of his knowledge of the Vah alphabet and because of his linguistic training.

John Duitsman, June Hobley and Linda Thayer read earlier drafts and portions of the paper and provided many helpful comments. Professor Wm. E. Welmers of UCLA discussed various portions of the paper with me and his insights are reflected throughout the paper. Mrs. Bertha E. Azango, Assistant Minister for Research and Planning at the Ministry of Education, provided generous support for this research project.

2When glosses for Bassa words are given in Liberian English, they are written in parentheses.

3That this final [m] is conditioned by a word final /u/ was clearly demonstrated in a Bassa primer class in which children who were native speakers of Bassa were being taught to recognize nasalized vowels /in, an, on and un/. When the children read this drill, they read /i, è, o, ə and m/.

4In this paper I follow Wm. E. Welmers' classification of tone languages (1973: ). He defines a discrete level tone language as one which has "two, three or four level tones, and perhaps also a unit rising and/or a unit falling tone". In discrete level tone languages the position of the glides within the environmental pitch range is not significant.

5In the eastern dialect of Gbii, the contrast between low tones and low-mid rising tones is much more distinct. Even in phrase final position, low-mid rising tones can be clearly heard: /gbè/ 'house'; /jà/ 'squirrel'.

6Wm. E. Welmers (personal communication)

7Professor Welmers first pointed out this feature to me in the speech of a Bassa woman speaking English. This woman assigned high tone to the word 'beat' in the expression 'I will beat you'. Since 'beat' begins with a fortis consonant, the high tone appeared as a rise [bǐ]. It is likely that other features of the phonology of English words borrowed by the Bassa language are similar to the phonology English as spoken by the Bassa people.
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