Organised Phonology Data Supplement

Koluwawa Language

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1. Introduction

Koluwawa is spoken by approximately 950 people living on the northwest tip of Fergusson Island in the Milne Bay Province of Papua New Guinea. Koluwawa is an Austronesian language and a member of the Papuan Tip cluster of the Bwaidoka network. The Ethnologue code is KLX.

This paper is supplementary to the Organized Phonology Data of Koluwawa (OPD) (Guderian, 1999). The data and ideas presented here are a more accurate and complete representation of the Koluwawa language than the OPD. The data for the OPD and this supplement was collected over a period of about six years during which over two years of actual time was spent living among the Koluwawa people.

1. List of Abbreviations

The following abbreviations are used in this paper:

| 1 | first person PL plural |
| 2 | second person RDUP reduplication |
| 3 | third person SF surface form |
| inst | instrumental SG singular |
| LOC | locative UR underlying representation |

Where stress is indicated on phonetic forms, \( \bar{v} \) indicates primary stress and \( \bar{v} \) secondary.

3. Phonological Units

3.1 Phonemic and Orthographic Inventory

| /a b bw d e f fw g gw i k kw l m mw n o s t u v w y/ |
| <a b bw d e f fw g gw i k kw l m mw n o s t,s u v w y> |
| <A B Bw D E F Fw G Gw IK Kw L M Mw N O S T, S U V W Y> |

3.1.1 Phoneme Charts

3.1.1.1 Consonants

<table>
<thead>
<tr>
<th>Plosive</th>
<th>Labial</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>t d</td>
<td></td>
<td>k g</td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Nasal</th>
<th>m</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fricative</td>
<td>f v s</td>
<td></td>
</tr>
<tr>
<td>Approx</td>
<td>w</td>
<td>y</td>
</tr>
<tr>
<td>LatFric</td>
<td>l</td>
<td></td>
</tr>
</tbody>
</table>

/bw/ voiced labialised bilabial plosive
/fw/ voiceless labialised labiodental fricative
/gw/ voiced labialised velar plosive
/kw/ voiceless labialised velar plosive
/mw/ labialised bilabial nasal

3.1.1.2 Vowels

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>i</td>
<td></td>
<td>u</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td></td>
<td>o</td>
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<tr>
<td>Low</td>
<td></td>
<td></td>
<td>a</td>
</tr>
</tbody>
</table>

3.1 Contrast Sets

3.1.1 Consonants

3.1.1.1 Labial

/f b v m w/

/faleda/   [fá.lè.da]  ‘unripe coconut’ /wafa/ [wá.fa]  ‘dead/die/death’
/bawe/   [bá.we]  ‘pig’ /kaba/ [ká.ba]  ‘(thing)’
/vavine/ [vá.ví.ne]  ‘woman’ /bulava/ [bú.la.va]  ‘string/rope’
/mala/ [má.la]  ‘wind’ /kilama/ [kí.la.ma]  ‘axe’
/wagava/ [wá.gá.va]  ‘name’ /kawakiki/ [kà.wa.kí.ki]  ‘food’

3.1.1.2 Alveolar and Palatal

/t d n s l y/

tova/ [tó.va]  ‘time’ /mata/ [má.ta]  ‘eye’
dogi/ [dó.gí]  ‘grass skirt’ /badau/ [bá.dau]  ‘clothing’
novu/ [nó.vú]  ‘same sex sibling’ /igana/ [í.ga.na]  ‘fish’
3.1.1.3 Velar
/k g/
/goyo/ [ gó.yo] ‘bad’ /waga/ [wá.ga] ‘boat’

3.1.2 Vowels
/i e a o u/
/itaita/ [i.tái.ta] ‘octopus’ /kido/ [kí.do] ‘small’
/etago/ [e.tá.go] ‘cook’ /keda/ [ké.da] ‘path’
/ake/ [á.ke] ‘interjection (‘Hey!’) /kadoi/ [ka.dói] ‘again’
/oka/ [ó.ca] ‘puffer fish’ /kodo/ [kó.do] ‘neck’
/ufa/ [ú.fa] ‘water’ /kudo/ [kú.do] ‘sexual immorality’

3.2 Variants
3.2.1 Variants of /f/
The voiceless labio-dental fricative /f/ sometimes occurs as [f], [φ], or [p], before /a/.
/faisewa/ [faí.sé.wa–φaí.sé.wa–paí.sé.wa] ‘work’

3.2.2 Variants of /g/
The voiced velar plosive /g/ is frequently produced as [γ], especially intervocally and in the speech of older individuals.
/waga/ [wá.ga–wá.ya] ‘boat’
/giyamaina/ [gi.ya.mái.na–γi.ya.mái.na] ‘good’

¹ Medial /s/ and /t/ do not occur in identical environments. In ‘pure’ Koluwawa, the two do not contrast: /s/ occurs before /i,e/ and /t/ before /a,o,u/ (cf. Guderian, 1999). The word-initial example /sousou/ is almost certainly a borrowed term, but where it was borrowed from is not known to us. (And why the Koluwawa people would have a borrowed term for something so common to their environment is an even greater mystery.)
3.2.3 Labial-/a/ Coalescence
The /w/ of a labIALIZED consonant coalesces with /a/ to produce [o] frequently in the following example, but rarely elsewhere.
/bwaigina/ [bwà.i'ína~bòi.gí.na] ‘big’
The following example is probably a product of this process as well, although speakers are aware of both pronunciations and spellings, and there is some debate as to which one is “correct”.
/mwagane~mogane/ [mwà.gí.ne~mó.gá.ne] ‘husband’

3.2.4 Vowel Reduction
The vowel /a/ is often pronounced as [ɔ] in unstressed syllables, especially word-final and adjacent to the most stressed syllable.
/giyamaina/ [gí.ya.mái.na~gí.yа.máí.nа] ‘good’
/lauwalama/ [laù.wa.lá.má.na~laù.wa.lа.má.nа] ‘knowledge/understanding’

3.2.5 Vowel deletion after /m/, /n/, /s/
In normal speech, /u/ following /m/ in an unstressed syllable is usually deleted, and the /m/ becomes the coda of the preceding syllable. When word-final, the remaining /m/ sometimes retains the roundness of the deleted /u/ and becomes rounded as well, like a [m̩] without the lips opening into a following vowel. The same type of deletion occurs as well for /i/ following /n/ or /s/, although not as frequent or consistent as the /u/ deletion. This process only occurs following /m/, /n/, or /s/ because they are the only possible syllable codas.
/kamuke/ [kám.ke] 2 SG pronoun
/ikanikani/ [i.kán.kan] ‘he is eating’
/kwasikwasi/ [kwás.kwas] ‘bushknife’

3.2.6 Off-glide Insertion
An [i] off-glide is inserted by some speakers following /o/ before /y/, and infrequently following /e/ before /y/.
/koya/ [kó.ya~kó’ya] ‘mountain’
/goyona/ [gò.yó.na~gò.yó.na] ‘bad’
/veimeya/ [vèi.mé.ya~vèi.mé’ya] ‘law/authority’
4. Syllable Structure

4.1 Syllable Types

Depending on how the data of surface forms is interpreted, the maximum syllable template for Koluwawa is CGVVC. This is true under the following three interpretations:

Labialized and palatalized consonants are considered as a consonant-glide sequence. Labialization occurs phonemically on /bw, fw, mw, gw, / and /kw/ whether those are considered as single phonemes or pairs. Palatalization occurs phonetically in normal speech on words such as /gi.u.na/ [gyu.na] ‘its tail’ and /ni.u.la/ [nyu.la] ‘coconut’.

Diphthongs are considered a VV sequence.

Closed syllables occur when a nasal or /s/ before a deleted vowel is incorporated as the coda of the preceding syllable.

The following syllable types occur in Koluwawa:

- V /ufa/ [u.f̃a] ‘water’
- CV /fose/ [f̃o.še] ‘basket’
- VV /aiyo/ [ái.yo] tag question
- CVV /kaitamoga/ [käi.ta.mô.g̃a] ‘one’
- CGV /mwata/ [mwa.t̃a] ‘snake’
- /niula/ [nyu.la] ‘coconut’
- CGVV /kwei/ [kwei] ‘rain’
- CVC /ikanikani/ [i.kán.kan] ‘he is eating’
- CVVC /taimu/ [t̃aim] ‘your (SG) younger same-sex sibling’

4.2 Co-occurrence

4.2.1 Consonants

Except for the CG sequence proposed above in section 4.1, the only other time consonants co-occur is across syllable boundaries when the first syllable ends with /m/, /n/, or /s/.

4.2.2 Vowels

As a general rule, co-occurring vowels that are not diphthongs are found only across morpheme boundaries or in environments where it is unclear as
to whether or not a glide is inserted between them. (See section 4.4 for more discussion of /y/ and /w/.)

The following sequences are diphthongs: /ei/, /ai/, /au/, /oi/, and /ou/. But they can also function as separate segments forming two syllables when they occur penultimately and the high vowel takes stress, as in the following examples:

/faína/ [fa₁i.na] ‘for/because’
/walauya/ [wà.la.ú.ya] ‘(type of) yam’
/velegoina/ [vè.le.go.i.na] ‘true/very’

The sequences /iu/ and /eu/ may also be diphthongs, but their pronunciation varies more between different speakers:

/giuna/ [gi₁ú.na~giú.na~gyú.na] ‘its tail’
/deu/ [dé.u~déu] ‘raft’

Some sequences across morpheme boundaries can condense into diphthongs and labializations, as illustrated in this example of an underlying six-syllable construction that commonly surfaces with three syllables:

ku- ewa- ewa -mu
2SG RDUP return 2SG
/ku.e.wa.e.wa.mu/
[kwé₁.wài.wam]
‘Are you returning?’

4.3 Status of <y> and <w>

The roles and functions of both <y> and <w> are unclear phonemically, phonetically, and orthographically at this stage of our research. There is no question that both are phonemes in the language, as attested by the following examples:

/buyabuyama/ ‘children’
/koya/ ‘mountain’
/yauke/ 1SG pronoun
/tawe/ ‘throw’
/wetaki/ ‘moon/month’

In environments where the transition between two vowels may produce a glide, some speakers insert one into their slow, careful speech and some speakers do not; but in the speech of many individuals it is difficult to tell whether it is there or not. Written language does not help to clarify the issue: Some individuals write glides in such environments, some do not, and many insert and omit with no consistency to their method. The insertions and
omissions occur both within morphemes and across morpheme boundaries, as two of the most prevalent examples illustrate:

/kaiyeta~kaieta/ [kài.yé.ta~kài.é.ta] <kaiyeta-kaieta> ‘day’
/i + obu/ [i.ó.bu~i.yó.bu] <iobu-iyobu> ‘he went down’
3S descend

The issue of whether or not to include glides in ambiguous environments is much more significant in regard to the phoneme /y/ than it is to /w/: There are over three times as many cases where /y/ is at issue than there are of /w/. One reason for this is the frequency of the third person singular morpheme i-, which is discussed in further detail in section 6.3.

We are still in the process of interacting with Koluwawa people in order to come to a consensus on a consistent treatment of /y/ and /w/ in the orthography.

5. Stress and Intonation

5.1 Intonation

As a general rule, pitch is high on stressed syllables and low on those that are not stressed. Patterns of intonation vary according to factors such as the speaker’s intention and the matter most in focus. Questions are also sometimes formed by the use of rising intonation on what would otherwise be a statement (Guderian 2002).

5.2 Stress

Primary stress falls on the penultimate syllable in over 80% of all Koluwawa words. About 70% of the words that do not fit that pattern are cases of lexical stress, specifically, three-syllable nouns with stress on the first syllable.

Stress is assigned in trochaic feet. Primary stress is assigned from right to left, secondary from left to right. In words with an odd number of five or more syllables, clash removal results in two adjacent unstressed syllables.

Examples of Default Pattern:

[bá.we] ‘pig’
[me.le.we] ‘village’
[ní.bwa.yá.ke] ‘red ant’
[kà.le.ku.tá.na] ‘short’
[mà.na.mà.na.wé.na] ‘long/tall’
Many three-syllable nouns or verbs functioning as nouns follow a pattern that is different from the default stress pattern. This set of examples shows the normal pattern of primary stress on the second syllable and secondary on the first:

Normal Pattern:

- [bê.bê.wa] ‘butterfly’
- [kài.yê.vu] ‘canoe’
- [và.vi.ne] ‘woman’

This set of examples shows the pattern that deviates from the default but is very common among three-syllable nouns. Here the primary stress occurs on the first syllable, with secondary falling on the second:

First Syllable Stress Pattern:

- [bo.sì.ma] ‘whale’
- [má.nù.ga] ‘bird’
- [fô.lò.va] ‘work’
- [bî.dà.la] ‘ground/soil/earth’

Another violation of the normal pattern may occur when a heavy final syllable attracts stress in words of three or more syllables:

- [i.to.vói] ‘he stood’
- [ka.do.wi] ‘again’
- [bá.dau] ‘cloth/clothing’

6. Morphophonemics

6.1 Locative /ye/

When the locative suffix –ye follows the phoneme /a/, the phonetic sequence [aye] does not occur. The following four processes produce the surface forms:

1) Deletion of /y/

An /aye/ sequence is prohibited, so the /y/ is deleted. However, the language’s preference for three-syllable words over two-syllable words blocks this effect in two-syllable roots.

2) Truncation
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The /a/ is deleted from an /ae/ sequence that results from a /y/ deletion.

3) Stress Assignment

Primary stress is assigned to the penultimate syllable.

4) Vowel Harmony

When the root has two syllables, the /aye/ sequence is avoided while maintaining 3-syllables by harmonizing the /a/ to /e/.

There are three crucial rule orders: Truncation and Vowel Harmony both follow Deletion, and Stress Assignment follows Truncation.
Examples:

<table>
<thead>
<tr>
<th>UR</th>
<th>melewa + ye/</th>
<th>keda + ye/</th>
</tr>
</thead>
<tbody>
<tr>
<td>top</td>
<td>house LOC</td>
<td>path LOC</td>
</tr>
</tbody>
</table>

1) Delete /y/:

| tabwanae | melewae |

2) Truncation:

| tabwan | melew |

3) Assign stress:

| tabwan | melew | kedáye |

4) Vowel harmony:

| SF | [tà.bwá.ne] | [mè.lé.we] | [kè.dé.ye] |

| SF | [tabwan] | [melew] | [kedye] |

‘on top of it’ ‘in/at the village’ ‘on/at the path’

6.2 Labialised /gu/

When the 1SG morpheme –gu is followed by the plural morpheme –avo, the /u/ of the resultant /ua/ sequence reduces to a labialisation.

/ˈnɔtu ˈɡu ˈavɔ/ [ˈna.tu.ɡuˈavɔ] ‘my children’

Form 1SG PL friend

6.3 /y/ Insertion

This is not as much of a morphophonemic process as it is an orthographic issue, as discussed above in section 4.3. But it does deserve some mention in relation to morphophonemics because of the frequency of two cases where a /y/ insertion environment is present across morpheme boundaries.

The most frequent is when the third person singular morpheme i- prefixed to verbs beginning with /e/ or /o/. Whether or not it will be included in the orthographic representation of forms such as following examples is an issue yet to be resolved:

\[
\begin{align*}
    i + obu & \quad /iobu-iyobu/ \quad [ˈi.ò.bu-ˈi.yò.bu] \quad <iobu-iyobu> \\
    3SG & \text{ascend} \quad \text{‘he went down’}
\end{align*}
\]

\[
\begin{align*}
    i + emu & \quad /iemu-iyemu/ \quad [ˈi.èm-ˈi.èm] \quad <iemu-iyemu> \\
    3SG & \text{drink} \quad \text{‘he drank’}
\end{align*}
\]

The second case occurs when the 3PL suffix –di precedes the plural suffix –avo.
The sequence /ia/ has not been found in our data, other than its possible occurrence between –di and –avo. Based on that, we are inserting a <y> into the spelling of <-diyavo> at this stage of our orthography to facilitate reading.

7. Acknowledgements

We wish to thank our Koluwawa friends for the language data they have supplied, the encouragement they’ve given us during different stages in our work, and for their care and concern for us during our stays in the village.

We greatly appreciate the insights, assistance and contributions of Steve Parker, whose knowledge and understanding of phonology were a great asset to writing this supplement.

Bibliography
