Viviana Phonemes.

by

Sampson Hackett.
VIVIGANA PHONEMES

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by

Nancy Sampson and Joyce Hackett

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2. Introduction  This paper is a description of the phonemic system of the Vivigana language which is classified as a Melanesian language. There are approximately 4,000 speakers inhabiting the central and northern areas of the eastern side of Goodenough Island in the D'Entrecasteaux Group in the Milne Bay District of Papua. The language is comprised of nine dialects of which the central dialect is the most populous. This paper is based on a study of the central dialect, but samples of five other dialects and the closely related language of Bwaidoga have been examined for comparison, and have influenced orthographical decisions.

The data for this paper was collected during seven months of residence in the village of Wakanai located near the war-time airstrip of Vivigana. A corpus of about 2,500 words was obtained from a wide variety of informants of both sexes and all ages. Most help was received from a woman, Waitaluga, aged 30 and three brothers, Hidomu, aged 34, Adiguma aged 32, and Laumamala aged 26. Of these, Hidomu speaks a smattering of English, while a monolingual approach had to be used with the others. The two younger brothers are literate in Bwaidoga, the lingua franca and 'church language' of the island, and orthographical questions were discussed with them. Laumamala was present at the workshop at which the final conclusions for this paper were reached. We would like to express our appreciation to Mr. Maurice Boxwell for his help in analysis and in the preparation of this paper.
3. Outline of Phonemes

3.1. Chart of Phonemes

Consonants

<table>
<thead>
<tr>
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<th>Labial</th>
<th>Dental</th>
<th>Palato-velar</th>
<th>Glottal</th>
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<tbody>
<tr>
<td>Stops</td>
<td>Vl.</td>
<td>f</td>
<td>t</td>
<td>k</td>
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<tr>
<td></td>
<td>Vd.</td>
<td>b</td>
<td>d</td>
<td>g</td>
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<td>Fricatives</td>
<td>w</td>
<td>v</td>
<td>y</td>
<td>h</td>
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<td>Nasals</td>
<td>m</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td></td>
<td>l</td>
<td></td>
</tr>
</tbody>
</table>

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>Low</td>
<td>e</td>
<td>a</td>
<td>o</td>
</tr>
</tbody>
</table>
3.2. **Description of Contrastive Features**

3.2.1. **Consonants** There is contrast as to manner of articulation between voiced and voiceless stops, fricatives, nasals and a lateral. The stops and fricatives contrast at labial, dental, palato-velar and glottal points of articulation; the nasals contrast at labial and dental.

3.2.2. **Vowels** Vowels contrast vertically as to high and low tongue positions. The high vowels contrast as to front and back tongue position. The low vowels contrast as to front, central and back tongue positions.
4. Interpretation

4.1. The status of items which may be either consonant or vowel

The high vocoids /i/ and /u/ are interpreted as vowels when they carry the peak of syllabacity in the syllable in which they occur.

/ivi/  [ʔivi]  'mat'
/nila/ [nila]  'coconut'
/binama/ [bináma]  'hornbill'
/ta.ina/ [táina]  'his younger sister'
/uda/ [ʔuda]  'breadfruit'
/gufa/ [gufa]  'water'
/utu/ [ʔutu]  'lice'
/giya.una/ [giyáuna]  'he unties'

They are interpreted as consonants when they occur:

1) in consonant positions in the syllable and do not carry the peak of syllabacity.

/yamumuna/ [yamūmuna]  'good'
/gayamana/ [gayamána]  'moon'
/gigayo/ [gigáyo]  'he said'
/wana/ [wna]  'you go'
/bawe/ [báwe]  'pig'
/awana/ [ʔawána]  'his mouth'

2) transitionally between two mora sequences of non-suspicious vowels with downglides. In this position /y/ has a pronounced dental quality.

/feyawa/ [feyawa]  'basket'
/haboya/ [habóya]  'red ant'
/bebewa/ [bebéwa]  'moth'
/gowa/ [gowa]  'cup'

3) by analogy with non-suspicious vowels, transitionally between two mora sequences of vowels with a downglide from /i/ and /u/.
/babiya/ [babiya] 'on the ground'
/mogiye/ [mogiye] 'possum'
/giyo/ [giyo] 'spear'
/manuwa/ [manuwa] 'house'
/uwe/ [uwe] 'cane'
/uwo?ana/ [uwo?ana] 'you shred it'

4.2. The status of items which may be either sequence or unit

4.2.1. Labialised consonants are interpreted as CuV for the following reasons:

(1) There are no consonant clusters.

(2) Interpretation as CuV is permitted by both the VV syllable pattern and the stress rules. By this interpretation the single mora sequences /ua/, /ue/ and /ui/ are introduced.

/kuadudu/ [kuadudu] 'cold'
/fuafueya/ [fuafueya] 'baby'
/muimuitula/ [muimuitula] 'type of tree'
/buaifu?ana/ [buaifu?ana] 'blunt'
/ikuula/ [ikuula] 'type of tree'

(3) Interpretation as Cu.V, i.e. as two syllables, would set up a new stress pattern, since the stress would be found to fall on the antepenultimate rather than the penultimate syllable as in

/gikuakua/ [gikuakua] 'he gathers'
/mubuanubua/ [mubuanubua] 'moss'
/fuifui/ [fuifui] 'spray'
/nigokumuamua/ [nigokumuamua] 'toothless'

(4) Interpretation as unit phonemes would add four new consonant phonemes carrying only a low functional load, since they contrast with their non-labialised counterparts as in
4.2.2. **Vowel sequences.** Sequences of two and three vowels occur with single and double mora timing in both stressed and unstressed positions, with a tendency to single mora timing when unstressed. Very few examples of three vowel sequences have been found. As there is no occurrence of a three vowel sequence with single mora timing in a stressed position, three vowel sequences in unstressed positions are regarded as two syllables rather than introducing a VVV syllable pattern. There is contrast between:

(1) V.V and WV as in

\[
\begin{align*}
/giya.una/ & \quad [giyáuna] \quad 'he unties it' \\
/giya.na/ & \quad [giyáuna] \quad 'he scrapes it' \\
/ta.ina/ & \quad [táina] \quad 'his younger sister' \\
/taidi/ & \quad [taídi] \quad 'their younger sister' \\
/gitaina/ & \quad [gitáina] \quad 'he pulls it' \\
/givena.unaga/ & \quad [givunaunágà] \quad 'he makes it clean' \\
/gilulunauwena/ & \quad [gilulunaunúwëna] \quad 'he is taken away'
\end{align*}
\]

(2) WV.V and WV as in

\[
\begin{align*}
/kua.uku/ & \quad [kúaku] \quad 'my back' \\
/kauka/ & \quad [kúka] \quad 'crab' \\
/avai.eka/ & \quad [avaiéka] \quad 'cooking pot' \\
/avaina/ & \quad [avainá] \quad 'we took it'
\end{align*}
\]
Single mora sequences are interpreted as complex syllable nuclei consisting of a close knit sequence of vowel phonemes for the following reasons:

(1) Interpretation as \( \nu y \) or \( \nu w \) would introduce consonant clusters and closed syllables which do not occur elsewhere.

(2) It reflects the difference in timing between single and double mora occurrences of the same sequence of vowels.

(3) It avoids the introduction of four complex vowel phonemes:

\[
\begin{align*}
/a^u/ & \text{ as in } /\text{gidadauda}/ \quad [\text{gidadaudA}] \quad 'he is sleeping' \\
/a^i/ & \text{ as in } /\text{givaita}/ \quad [\text{givaitA}] \quad 'he thinks' \\
/a^o/ & \text{ as in } /\text{kiliwaoma}/ \quad [\text{kiliwaoma}] \quad 'black stone' \\
/o^i/ & \text{ as in } /\text{gikoikoina}/ \quad [\text{giikoikóina}] \quad 'he is scratching'
\end{align*}
\]

Three further single mora sequences are found to occur by the interpretation of labialised consonants as in 4.2.1.
5. **Description of Phonemes**

5.1. **Consonants**

5.1.1. **Work Chart**

\[
\begin{array}{cccc}
\text{p} & \text{t} & \text{k} & \emptyset \\
\text{b} & \text{d} & \text{g} & \text{h} \\
\text{f} & \text{s} & \text{u} & \text{w} \\
\text{m} & \text{n} & \text{l} & \text{y} \\
\end{array}
\]

5.1.2. **Description**

/t/ \[\text{[t]}\]  Voiceless fronted alveolar stop occurs word initially and medially preceding /a/, /o/ and /u/.

/tova/ \[\text{[tɔva]}\]  'time'
/atala/ \[\text{[?aˈtaˈla]}\]  'thunder'
/abaʔaitutu/ \[\text{[ʔaˈbaʔaiˈtu]}\]  'hammer'

/g/ \[\text{[g]}\]  Voiceless fronted alveolar grooved fricative occurs word initially and medially preceding /i/ and /e/.

/tifa/ \[\text{[tifə]}\]  'wall'
/gitena/ \[\text{[giˈte�a]}\]  'he puts it'
/ganatete/ \[\text{[ganatete]}\]  'I will go up'

/k/ \[\text{[k]}\]  Voiceless velar stop occurs word initially and medially with slight aspiration.

/kuv/ \[\text{[kuˈv]}\]  'yam'
/keke/ \[\text{[keke]}\]  'no'
/lakahina/ \[\text{[lakahina]}\]  'big'
/ʔ/ [ʔ] Glottal stop occurs word medially.
/hiʔaʔauʔa/ [hiʔaʔauʔa] 'they are eating'
/gibeʔu/ [gibeʔu] 'it fell down'
/galuʔeta/ [galuʔeta] 'dog'

/b/ [b] [p] Voiced and voiceless bilabial stops occur word initially and medially in non-contrastive free variation.
/bawe/ [bawe] [pawe] 'pig'
/bebewa/ [bebewa] [pebewa] 'moth'
/gihobu/ [gihobu] [gihopu] 'he went down'

/d/ [d] Voiced fronted alveolar stop occurs word initially and medially.
/doki/ [doki] 'skirt'
/eda/ [ʔʔda] 'path'
/didiga/ [didiga] 'large stones'

[tʰ] Voiceless fronted aspirated alveolar stop occurs phrase finally in non-contrastive free variation with [d] preceding /i/.
/umidi/ [ʔumidi] [ʔumitʰi] 'Stand up'
/dawanidi/ [dawanidi] [dawanitʰi] 'many'
/bugiyadi/ [bugiyadi] [bugiyatʰi] 'Tomorrow'

/g/ [g] Voiced velar stop occurs word initially and medially.
/galo/ [galo] 'banana'
/adiga/ [ʔadiga] 'their food'
/guwegina/ [guwegina] 'young taro'

[g] Voiced velar fricative occurs word medially in non-contrastive free variation with [g].
/ogola/ [ʔɔgɔla] [ʔɔgɔla] 'post'
/tagaku/ [tagaku] [tagaku] 'my knee'
/hiviga/ [hiviga] [hiviga] 'pubic leaf'
/f/ [f] Voiceless labio-dental fricative occurs word initially and medially.
/feha/ [fáha] 'garden'
/fifiwalana/ [fifiwalána] 'strong'
/lefo/ [léfo] 'tide'

/h/ [h] Voiceless glottal fricative occurs word initially and medially.
/huhuwa/ [huhúwa] 'young banana'
/kahíhi/ [kahíhi] 'story'
/hihégéna/ [hihégéna] 'they threw it away'

/v/ [v] Voiceless labio-dental fricative occurs word initially and medially.
/vagita/ [vagita] 'wallaby'
/vavine/ [vavins] 'your wife'
/hivehihiiva/ [hivshihiiva] 'they carry'

/m/ [m] Voiced bilabial nasal occurs word initially and medially.
/makama/ [makáma] 'sand'
/gimiýami/ [gimiýami] 'he is staying'
/móli/ [móli] 'arm shell'

/n/ [n] Voiced alveolar nasal occurs word initially and medially.
/nila/ [nila] 'coconut'
/nanawala/ [nanawálá] 'fly'
/wanana/ [wanána] 'you will go'

/l/ [l] Voiced alveolar lateral occurs word initially and medially.
/lilíne/ [lilíne] 'at the side of it'
/gilololo/ [gilolólo] 'he is lying'
/galuku/ [galúku] 'I entered'
/w/ [w] Voiced high close back rounded non-syllabic vocoid occurs word initially and medially.

/wehi/ [wéhi] 'rain'
/manuwa/ [manúwa] 'house'
/giwahi/ [giwáhi] 'he carried'

/y/ [y] Voiced high close front unrounded non-syllabic vocoid occurs word initially and preceding or following /i/ and /u/.

/yogo/ [yóga] 'rubbish'
/babiya/ [babiya] 'on the ground'
/ginayu/ [gináyu] 'he will drink'
/buye/ [búye] 'with'

/y/ Voiced interdental high close front unrounded non-syllabic vocoid occurs word medially between /a/, /e/ and /o/.

/oya/ [?ya] 'mountain'
/koyona/ [koyóna] 'bad'
/meyaku/ [meyáku] 'my tongue'
5.1.3. **Contrasts**

/t/ and /d/ contrast in the following environments:

/hitotona/ [hitotona] 'they cut it'
/hidodona/ [hidodona] 'they load it'
/vitana/ [vitana] 'heavy'
/gividana/ [gividana] 'he chops it'
/gimatauta/ [gimatauta] 'he is afraid'
/gidadauda/ [gidadauda] 'he is asleep'
/tumotumo/ [tumotumo] 'borer'
/dumodumo/ [dumodumo] 'type of tree'
/tabone/ [tabone] 'on top of it'
/dabodabo/ [dabodabo] 'rocks'

/k/ and /g/ contrast in the following environments:

/kanana/ [kanana] 'we will go'
/ganana/ [ganana] 'I will go'
/yoyoka/ [yoyoka] 'shell'
/yoyoga/ [yoyoga] 'your diaphragm'
/kilikili/ [kilikili] 'coral'
/giligili/ [iligili] 'broom'
/kouko/ [kouko] 'type of bird'
/gougo/ [gougo] 'type of banana'
/kevakeva/ [kevakeva] 'meat'
/geva/ [geva] 'rafters'
/k/ and /ʔ/ contrast in the following environments:

/waka/ [wáka] 'boat'
/waʔa/ [wáʔa] 'you eat'
/alaka/ [ʔalákə] 'we went up'
/laʔa/ [ʔaláʔa] 'bush food'
/gikolina/ [gikolina] 'he scrapes it'
/giʔolina/ [giʔolina] 'he grates it'
/dakula/ [dakūla] 'feather'
/taʔula/ [taʔūla] 'leaf plate'
/ukova/ [ʔukɔva] 'you call'
/uʔovala/ [ʔuʔɔvala] 'you vomit'

/k/ and /h/ contrast in the following environments:

/gikabuna/ [gikabúna] 'she bakes it'
/gihabuna/ [gihabúna] 'she uproots it'
/ukalina/ [ʔukalina] 'you beat it'
/uhalina/ [ʔuhalina] 'you make a mound'
/gikihina/ [gikihına] 'he pinches him'
/gihihina/ [gihihına] 'he slices it'
/kukuna/ [kukúna] 'skin of betel nut'
/huhuna/ [huhúna] 'her breast'
/mukumukuna/ [mükumükúna] 'crumbs'
/muhumuhuna/ [můhmůhúna] 'thin'
/g/ and /h/ contrast in the following environments:

/gikova/ [gikóva] 'he calls'
/hikova/ [hikóva] 'they call'

/gigavina/ [gigavína] 'he fixes it in'
/gihavina/ [gihavína] 'he makes a join'

/uhagana/ [?uhagána] 'you find it'
/uhahana/ [?uhahána] 'you lance it'

/gowa/ [gówa] 'cup'
/howahowa/ [howahówa] 'thick cloud'

/gayamana/ [gayamána] 'moon'
/hayahaya/ [hayaháya] 'dry'

/h/ and /ʔ/ contrast in the following environments:

/gihitana/ [gihitána] 'he sweats'
/giʔitana/ [giʔitána] 'he sees it'

/gaholina/ [gaholína] 'I pull it in'
/gaʔolina/ [gaʔolína] 'I grate it'

/gitahina/ [gitahína] 'he chips it'
/gitaʔina/ [gitaʔína] 'he spits it out'

/wehi/ [wéhi] 'rain'
/auweʔi/ [ʔauwéʔi] 'enough'

/uwahi/ [ʔuwáhi] 'you carry'
/yuwaʔi/ [yuwáʔi] 'over there'
/b/ and /v/ contrast in the following environments:

/gibidana/ [gibidáná] 'he brings up wind'
/gividana/ [gividáná] 'he chops it'
/gibaina/ [gibainá] 'he bumps it'
/givaina/ [givainá] 'he gets it'
/bala.uma/ [balaúma] 'evil spirit'
/valaga/ [valágá] 'coconut seed'
/gibetu/ [gibétu] 'he falls down'
/givetu/ [givetu] 'he stands in front'
/beliehi/ [beléhi] 'type of fruit'
/velemo?ena/ [velemo?ena] 'true'

/f/ and /v/ contrast in the following environments:

/gifewana/ [gifewána] 'he lifts it'
/giwewahi/ [giwewáhi] 'he takes it up'
/gufeya/ [guféya] 'by the river'
/guvega/ [guvega] 'young taro'
/vagita/ [vagita] 'wallaby'
/fakili/ [fakili] 'comb'
/kuafulina/ [kuáfulina] 'skin'
/ginavelina/ [ginavelina] 'he will shift away bush'
/fafalina/ [fafalina] 'side'
/gyavalina/ [gyavalina] 'he breaks it'
/h/ and /y/ contrast in the following environments:

/gihawa/ [gi'háwa] 'he counts'
/giyawa/ [gi'yáwa] 'it gets better'
/gaholina/ [gahóli'na] 'he pulls it in'
/gayolina/ [gáyolí'na] 'he carries it'
/halahalana/ [halahálána] 'gap between floorboards'
/yalayalana/ [yáláyálána] 'soft'
/oho/ [ôôôo] 'cough'
/koyo/ [kóyó] 'bad'
/uyu?uyuyuna/ [ôuyôôuyuyúôá] 'night'
/muhumuhuna/ [múhúmúhúôá] 'thin'

/h/ and /w/ contrast in the following environments:

/hala/ [hálá] 'male pig'
/wala/ [wálá] 'coconut charm'
/ha?ami/ [ha?ámi] 'this way'
/wa?ami/ [wa?ámi] 'that way'
/amuha/ [ôamúôá] 'type of wood'
/ai?uwa/ [ôai?úôá] 'spoon'
/gihahána/ [gi'hahána] 'he lances it'
/wawana/ [wawána] 'steps'
/hohofina/ [hohôfíôna] 'coconut scum'
/wowomumu/ [wowômômôô] 'shame'
/v/ and /w/ contrast in the following environments:

/avaga/ [ʔavaga] 'we dance'
/awaga/ [ʔawaga] 'prepared food'

/gituva/ [giʔuva] 'he baits'
/autuwa/ [ʔautuwa] 'large rafter'

/vada/ [váda] 'single pitch roof'
/wade/ [wáde] 'there'

/hiqavalana/ [hiʔavalána] 'they carry'
/hiqavalava/ [hiʔavaláva] 'they censure'

/giʔalovena/ [giʔalovéna] 'he stops'
/gikilowena/ [gikilowéna] 'he dislikes'

/?/ and /y/ contrast in the following environments:

/gaʔolina/ [gaʔolina] 'I grate it'
/gayolina/ [gayolina] 'I pull it in'

/uʔuna/ [ʔuʔúna] 'his head'
/uyuna/ [ʔuyúna] 'you drink'

/hiyoyo/ [hiyoyo] 'they gather together'
/hiyoyo/ [hiyoyo] 'they get fruit'

/giʔalana/ [giʔalána] 'he makes a fence'
/giyalana/ [giyalána] 'he digs it up'

/giʔana/ [giʔána] 'he ate it'
/giyaya/ [giyáya] 'red-leafed plant'
/n/ and /l/ contrast in the following environments:

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ginada/</td>
<td>[gináda]</td>
<td>'it will stop'</td>
</tr>
<tr>
<td>/gilada/</td>
<td>[giláda]</td>
<td>'it smells'</td>
</tr>
<tr>
<td>/manawa/</td>
<td>[manáwa]</td>
<td>'graveyard'</td>
</tr>
<tr>
<td>/malawa/</td>
<td>[maláwa]</td>
<td>'type of vine'</td>
</tr>
<tr>
<td>/nimoga/</td>
<td>[nimóga]</td>
<td>'mosquito'</td>
</tr>
<tr>
<td>/limomo/</td>
<td>[limómo]</td>
<td>'dust-coloured insect'</td>
</tr>
<tr>
<td>/wonu/</td>
<td>[wónu]</td>
<td>'turtle'</td>
</tr>
<tr>
<td>/giwoluwolu/</td>
<td>[giwoluwólu]</td>
<td>'he talks angrily'</td>
</tr>
</tbody>
</table>
5.2. **Vowels**

5.2.1. **Workchart**

![Vowel Chart]

5.2.2. **Description**

/ɪ/ [i] Voiced high close front unrounded vocoid occurs word initially, medially and finally.

/ɪvi/ [ʔɪvi] 'mat'
/hiniva/ [hiníva] 'fan'
/ititiʔu/ [ʔiɾiʔu] 'grass'

/e/ [e] Voiced mid open front unrounded vocoid occurs word initially, medially and finally.

/ɛda/ [ʔɛda] 'path'
/lelena/ [leléna] 'he looks for it'
/medede/ [meɗeɗe] 'like that'

/u/ [u] Voiced high close back rounded vocoid occurs word initially, medially and finally.

/utu/ [ʔutu] 'lice'
/uʔuku/ [ʔuʔuku] 'my head'
/uyuna/ [ʔuyuna] 'you drink it'

/ʊ/ Voiced high close back rounded nasalised vocoid occurs following /m/.

/muhumuhuna/ [mũhumũhũna] 'thin'
/gimununa/ [gimũnũna] 'he fights him'
/muduna/ [mũdũna] 'beak'
/ɔ/  [ɔ] Voiced mid open back rounded vocoid occurs word initially, medially and finally.

/ɔho/  [ʔɔho]  'cough'
/koloha/  [kolɔha]  'widower'
/gowa/  [gɔwa]  'cup'

/a/  [a] Voiced low open central unrounded vocoid tending to front position occurs word initially and medially in stressed and a few unstressed positions.

/awana/  [ʔawána]  'his mouth'
/anaga/  [ʔanága]  'his food'
/atala/  [ʔatála]  'thunder'

[A] Voiced mid open central unrounded vocoid occurs word initially, medially and finally in unstressed positions.

/amiga/  [ʔamíga]  'your food'
/gamiha/  [gamiha]  'banana'
/kakawana/  [kakawána]  'empty'
5.2.3. **Contrasts**

/i/ and /e/ contrast in the following environments:

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/igana/</td>
<td>[ʔigána]</td>
<td>fish</td>
</tr>
<tr>
<td>/egana/</td>
<td>[ʔegána]</td>
<td>name</td>
</tr>
<tr>
<td>/tifa/</td>
<td>[ʔifá]</td>
<td>wall</td>
</tr>
<tr>
<td>/tefa/</td>
<td>[ʔefá]</td>
<td>overhanging rock</td>
</tr>
<tr>
<td>/gavilina/</td>
<td>[ʔavilína]</td>
<td>I clear away bush</td>
</tr>
<tr>
<td>/gavelena/</td>
<td>[ʔaveléna]</td>
<td>I gave it to him</td>
</tr>
<tr>
<td>/daki/</td>
<td>[ʔakí]</td>
<td>seagull</td>
</tr>
<tr>
<td>/gidake/</td>
<td>[ʔakáke]</td>
<td>he is angry</td>
</tr>
<tr>
<td>/ginagina/</td>
<td>[ʔinágína]</td>
<td>he marries her</td>
</tr>
<tr>
<td>/agena/</td>
<td>[ʔagéna]</td>
<td>his foot</td>
</tr>
</tbody>
</table>

/e/ and /a/ contrast in the following environments:

<table>
<thead>
<tr>
<th>Word</th>
<th>Pronunciation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/geva/</td>
<td>[ʔevá]</td>
<td>rafters</td>
</tr>
<tr>
<td>/gava/</td>
<td>[ʔevá]</td>
<td>down there</td>
</tr>
<tr>
<td>/enana/</td>
<td>[ʔenána]</td>
<td>cow's bone</td>
</tr>
<tr>
<td>/anana/</td>
<td>[ʔanána]</td>
<td>we will go</td>
</tr>
<tr>
<td>/awane/</td>
<td>[ʔawáne]</td>
<td>valley</td>
</tr>
<tr>
<td>/awana/</td>
<td>[ʔawána]</td>
<td>his mouth</td>
</tr>
<tr>
<td>/gahegena/</td>
<td>[ʔahégena]</td>
<td>I threw it away</td>
</tr>
<tr>
<td>/gahagana/</td>
<td>[ʔahagána]</td>
<td>I found it</td>
</tr>
<tr>
<td>/kadeda/</td>
<td>[ʔaˈdədə]</td>
<td>name of dance</td>
</tr>
<tr>
<td>/kadada/</td>
<td>[ʔaˈdədə]</td>
<td>we should sleep</td>
</tr>
</tbody>
</table>
/a/ and /o/ contrast in the following environments:

/daki/   [ɗáki]    'seagull'
doki/    [ɗɔki]    'skirt'

/afana/  [ʔafána]    'seed'
ofana/   [ʔɔfána]    'beak'

/gidamana/    [gidämána]    'he goes across'
gidamona/    [gidämɔna]    'he covers'

/uhabu/    [ʔuhábu]    'you uproot'
uhobu/     [ʔuhőbu]    'you go down'

/lakolako/    [lakoláko]    'orange-leafed plant'
lakoloko/    [lakolóko]    'possessions'

/o/ and /u/ contrast in the following environments:

/gakolina/    [gakolína]    'I scrape it'
gakulina/    [gakúlina]    'I light a fire'

/ulo/        [ʔuto]    'pigeon'
olo/         [ʔoło]    'beard'

/hifo/    [hifo]    'chest illness'
hifu/      [hifu]    'woman's armband'

/gitotona/    [gitotóna]    'he cuts it'
gitutuna/    [gitútuna]    'he hammers it'

/gibobona/    [gibobóna]    'he cuts it'
gibubuna/    [gibubúna]    'he makes it'
The following five-way contrasts occur:

| /gava/ | [gáva] | 'down there' |
| /giba/ | [gíba] | 'property' |
| /guba/ | [gúba] | 'big cloud' |
| /gowa/ | [gówa] | 'cup' |
| /geva/ | [géva] | 'rafters' |
| /gikolana/ | [gikolána] | 'he washes it' |
| /gikolina/ | [gikolina] | 'he scrapes it' |
| /gikoluna/ | [gikolúna] | 'he picks it' |
| /givilona/ | [givilóna] | 'he twists it' |
| /gilelena/ | [gílelena] | 'he looks for it' |
| /lalaka.u/ | [lalakáu] | 'stormy sky' |
| /liline/ | [líline] | 'next to' |
| /luluna/ | [lulúna] | 'his bone' |
| /lolowa/ | [lolówa] | 'safe' |
| /lelega/ | [lélega] | 'sand' |
| /melala/ | [melála] | 'village' |
| /filili/ | [filíli] | 'type of leaf' |
| /debalulu/ | [debalúlu] | 'type of yam' |
| /aulolo/ | [aulólo] | 'pain' |
| /kulele/ | [kúlele] | 'flute' |
5.3. **Suprasegmental Items**

5.3.1. **High pitch, length and stress** are non-phonemic. They are closely linked in that stress always occurs with length, and usually with high pitch. High pitch and length can occur without stress. High pitch occurs on the antepenultimate and/or on the penultimate syllables of words. High pitch and stress are influenced by intonational patterns.

5.3.2. **Stress** is predictable.

1. It occurs on the penultimate syllable of 2 - 11 syllable words.

2. An exception occurs with a low-high vowel sequence of two moras in antepenultimate and penultimate positions, when the stress always occurs on the first vowel.

   `/ga-u-da/  [gáu-da]  'poison stone'
   `/ba.i/     [bái]     'crossbeam'
   `/kua.i-ba/ [kwaíba] 'bark'

3. Secondary stress occurs on the first syllable of the stem in 4 - 11 syllable words.

   `/galu?e.ta/  [gálu?eta]  'dog'

5.3.3. **Intonation.** Three contrastive intonational patterns have been observed: interrogative, tentative pause and final pause.

   Interrogative and final pause contrast in the pitch patterns in that the difference between high and low pitch is greater in the interrogative patterns and the stress is accentuated. Also in the interrogative pattern there appears to be three pitches, high, mid and low.
'Are you going?'

'We are going.'

'Is the dish there?'

'The dish is there.'

Tentative pause contrasts with final pause and interrogative in that the final pitch remains high.

'Munava una ginaula tan, kaliva taye sa na fela ana livi la.'

'When Munavauna is of marriageable age, a certain man will come to her mat.'

'Weni naho bu, ititi u matabu ginalubawabwena.

Ginalubawabwena, au gina kabu yamumuna.'

'When the rain falls, all the grass will soak up the rain. It will soak up all the rain, then it will grow well.'
6. **Distribution**

6.1. **General distribution of phonemes.** A syllable in Vivigana consists of a nucleus of one or two vowels with a single mora of length and optional consonant onset.

6.1.1. **The following types of syllable structure occur:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
<th>Transcription</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>/la.oga/</td>
<td>[lάογα]</td>
<td>'type of grass'</td>
</tr>
<tr>
<td>CV</td>
<td>/nīa/</td>
<td>[nία]</td>
<td>'coconut'</td>
</tr>
<tr>
<td>CVV</td>
<td>/waiwā/</td>
<td>[wǎiwǎ]</td>
<td>'mango'</td>
</tr>
</tbody>
</table>

6.1.2. **Words of 2-2 syllables have been found.**

V syllable occurs word medially and finally, never word initially nor contiguous to another V syllable.

CV occurs in all positions.

CVV occurs word initially, medially and finally, but never following a V syllable.

**Examples of various combinations of syllables follow:**

6.1.2.1. **Two syllable words**

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
<th>Transcription</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV.CV</td>
<td>/keke/</td>
<td>[kέκε]</td>
<td>'no'</td>
</tr>
<tr>
<td>CVV.V</td>
<td>/buai/</td>
<td>[bǔai]</td>
<td>'drink'</td>
</tr>
<tr>
<td>CVV.CV</td>
<td>/waiwa/</td>
<td>[wǎiwǎ]</td>
<td>'mango'</td>
</tr>
<tr>
<td>CVV.CVV</td>
<td>/kuikui/</td>
<td>[kǔiκǔi]</td>
<td>'type of banana'</td>
</tr>
</tbody>
</table>

6.1.2.2. **Three syllable words**

<table>
<thead>
<tr>
<th>Type</th>
<th>Example</th>
<th>Transcription</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV.CV.CV</td>
<td>/kaliva/</td>
<td>[kαλίβα]</td>
<td>'man'</td>
</tr>
<tr>
<td>CV.V.CV</td>
<td>/ga.uda/</td>
<td>[gάυδα]</td>
<td>'poison stone'</td>
</tr>
<tr>
<td>CVV.CV.CV.CV</td>
<td>/gaiilo/</td>
<td>[gaiilo]</td>
<td>'coconut dish'</td>
</tr>
<tr>
<td>CVV.CVV.CV</td>
<td>/kuakuamo/</td>
<td>[kǔαkǔάμο]</td>
<td>'spider'</td>
</tr>
<tr>
<td>CV.CV.CVV</td>
<td>/gimukua/</td>
<td>[gimǔkǔa]</td>
<td>'it rots'</td>
</tr>
</tbody>
</table>
6.1.2.3. **Four syllable words**

| CV.CV.CV.CV  | /swaivile/ | [?swaivile] | 'cooking spoon' |
| CV.CV.V.CV   | /avai.eka/ | [?avaiéka]  | 'cooking pot'   |
| CV.CV.CV.CV  | /hinafane/ | [hinafâne]  | 'centre'        |
| CV.V.CV.CV   | /ma.yugaya/| [maugâya]   | 'type of tree'  |

6.1.2.4. **Five - seven syllable words**

| CV.CV.CV.CV.CV | /fifiwalana/ | [fifiwalâna] | 'strong' |
| CV.CV.CV.CV.CV.CV.V | /hiluludebua.u/ | [hiluludedsb'au] | 'they call across the trail' |

6.2. **Specific distribution of phonemes**

6.2.1. **Vowels** All vowels occur in V slot of V syllable type, but only high vowels occur in word final position.

All vowels occur in V slot of CV syllable.

Vowels occurring in first slot of CVV syllable are /a/, /u/, /o/.

Vowels occurring in second V slot of CVV syllable are /i/, /e/, /a/, /u/, /o/.

6.2.2. **Sequences of vowels**

6.2.2.1. Within the syllable, the following sequences can occur: /ai/, /ao/, /au/, /oi/, /ui/, /ue/, /ua/, /uo/.

6.2.2.2. Across syllable boundaries, the following sequences have been found:

- **Two vowels** /iu/, /ei/, /eu/, /ai/, /ao/, /au/, /oi/, /ui/, /ue/, /ua/, /uo/, /ou/.
- **Three vowels** /ai.e/, /ai.u/, /ua.i/, /ua.u/

7. **Non-contrastive features** A non-phonemic glottal stop may occur intervocalically at word junctures in slow or deliberate speech, and before vowel initial words in isolation. In text material it is sometimes present, sometimes absent.
8. **Unsolved issues**

8.1. **Length** There appears to be phonemic length on the vowels /i/, /u/, /o/, /a/ when they occur in the first syllable of three syllable words. Conditioning rules for some examples have been found, but no clear statement to cover the whole of the data can yet be formulated.

8.2. **Central vowel** In the case of /a/, the difference in timing also seems to be linked with a difference in quality. There appears to be a contrast between [a] and [A]. The grounds for regarding these vocoids as separate phonemes however, are insufficient for the following reasons:

1. There are no minimal contrasts as are found with the other vowels.
2. The contrast is limited to the first syllable of three syllable words.
3. Some conditioning factors are present, though not applicable to the whole of the data.
4. Because of the inherent nature of the central vowel [A], the addition of length could be easily heard as a vowel lower in quality.
5. **Vivigana** speakers who are literate in Bwaidoga have no difficulty in distinguishing the different vowel qualities from the same symbol.
9. **Orthography**

9.1. /t/  

<table>
<thead>
<tr>
<th>Sound</th>
<th>Phonemic</th>
<th>Written</th>
</tr>
</thead>
<tbody>
<tr>
<td>/t/</td>
<td>[t], [s]</td>
<td>t, s</td>
</tr>
<tr>
<td>/k/</td>
<td>[k]</td>
<td>k</td>
</tr>
<tr>
<td>/ʔ/</td>
<td>[ʔ]</td>
<td>ʔ</td>
</tr>
<tr>
<td>/b/</td>
<td>[ɓ], [p]</td>
<td>b</td>
</tr>
<tr>
<td>/d/</td>
<td>[ɗ], [tʰ]</td>
<td>d</td>
</tr>
<tr>
<td>/ɡ/</td>
<td>[ɡ], [ɡ̊]</td>
<td>ɡ</td>
</tr>
<tr>
<td>/ʃ/</td>
<td>[ʃ]</td>
<td>f</td>
</tr>
<tr>
<td>/v/</td>
<td>[v]</td>
<td>v</td>
</tr>
<tr>
<td>/h/</td>
<td>[h]</td>
<td>h</td>
</tr>
<tr>
<td>/m/</td>
<td>[m]</td>
<td>m</td>
</tr>
<tr>
<td>/n/</td>
<td>[n]</td>
<td>n</td>
</tr>
<tr>
<td>/l/</td>
<td>[l]</td>
<td>l</td>
</tr>
<tr>
<td>/w/</td>
<td>[w]</td>
<td>w</td>
</tr>
<tr>
<td>/y/</td>
<td>[y], [ẙ]</td>
<td>y</td>
</tr>
<tr>
<td>/i/</td>
<td>[i]</td>
<td>i</td>
</tr>
<tr>
<td>/e/</td>
<td>[ɛ]</td>
<td>e</td>
</tr>
<tr>
<td>/o/</td>
<td>[ɔ]</td>
<td>o</td>
</tr>
<tr>
<td>/a/</td>
<td>[ɑ], [ʌ]</td>
<td>a</td>
</tr>
<tr>
<td>/u/</td>
<td>[u], [u̯]</td>
<td>u, ū</td>
</tr>
</tbody>
</table>

Where CuV occurs, the /u/ is written /w/ because of the pressure from the trade languages, Dobu and Bwaidoga.

9.2. There has been no previous orthography for the Vivigana language, but some are literate in Bwaidoga.
9.3. **English words as spoken by Vivigana speakers.**

<table>
<thead>
<tr>
<th>English</th>
<th>Vivigana</th>
</tr>
</thead>
<tbody>
<tr>
<td>tin</td>
<td>tini</td>
</tr>
<tr>
<td>book</td>
<td>buki</td>
</tr>
<tr>
<td>pineapple</td>
<td>binafo</td>
</tr>
<tr>
<td>tea</td>
<td>si</td>
</tr>
<tr>
<td>salt</td>
<td>solu</td>
</tr>
<tr>
<td>soap</td>
<td>sofu</td>
</tr>
<tr>
<td>rice</td>
<td>laisi</td>
</tr>
<tr>
<td>knife</td>
<td>naifi</td>
</tr>
<tr>
<td>calico</td>
<td>kaleko</td>
</tr>
<tr>
<td>paper</td>
<td>fefe</td>
</tr>
<tr>
<td>August</td>
<td>hogosi</td>
</tr>
<tr>
<td>hat</td>
<td>hat</td>
</tr>
<tr>
<td>nail</td>
<td>neli</td>
</tr>
<tr>
<td>fly (canvas)</td>
<td>falai</td>
</tr>
<tr>
<td>picture</td>
<td>fikisa</td>
</tr>
<tr>
<td>cat (pussy)</td>
<td>fusi</td>
</tr>
<tr>
<td>grass</td>
<td>gelssu</td>
</tr>
<tr>
<td>pipe</td>
<td>faifa</td>
</tr>
<tr>
<td>missionary</td>
<td>misinale</td>
</tr>
<tr>
<td>Abraham</td>
<td>abelamo</td>
</tr>
</tbody>
</table>

9.4. **Sample text**

Phonetic transcription   Munavá.una  ginaulatána, kalíva
Proposed orthography     Munavauna   ginaulatana, kaliva
Literal translation      Munavauna   she-mature, man

sa?eyána na'ela ana iviya. Hinakemakéna, hinakemakéma
sa'eyana na'ela ana iviya. Hinakemakema, hinakemakema
one will come her mat-to. They will chew together (rpt)
kalimúhu laibida tūhi ta'f'akášna ana váns na'au'aśána
calimuhu laibida tuhi tafwakena ana vane na'au'aana
betel-nut laibida lime tobacco his love-potion will-go-on-eating

Munaváuna. kalíva ana váns. Munaváuna nuwána áhe
Munaváuna. kalíva ana vane. Munaváuna nuwana ahe
Munaváuna. man his love-potion M. desire-her already

ginána kalíva agains Munaváuna gigagahe hidevái una'élá
ginana kalíva againe Munaváuna gigagahe hidevai una'ela
it-will-go man towards Munaváuna she will say here you-will-com--

buysi kanána. 
ginanaungena anamidi
buys u kanana. 
ginanaungena anamidi
together we-will-go. he-will-take-away-her. We-will-stand

analele
analele
we-will-look-around. Munaváuna where she-go? night-time man

gi'élá gi'óseýšna. 

givone'sota o méma

he-come he-run-away-with-her. he-woman-take-away. o like-this

áimo dámiya. támó yana nima'onána gavádi kadavaini (yo)
aimo damiya. tamo yana nima'omana gavadi kadavainiyo
later will-stay. Some his gift-in-hand what we-will-take

au gidána. o a'uwu áimo kani'ive'áiyóyéšna.
au gidana. o auwe aimo kana'ive'aiyoyena.
will-go. o enough later we-will-go-give-gifts-to-bridal pair.
gâva tôva kana'ive'aiyoyêna âuwe ginâgi.
gava tôva kana'ive'aiyoyêna âuwe ginagi.
when we-will-give-gifts...? then she-will-marry.

kêke wada'itave'avina hagihagiys. kaliva ana vâns
keke wada'itave'avina hagihagiye. kaliva ana vane
not you-watch good. man his love-potion

kalimûhûya gi'âna taf'akâna giyûna laibidâlya
kalimuhuya gi'ana tafwakena giyuna laibidadeya
betel-nut-in she-eat-it tobacco she-smoke-it laibida-in

âda mêma âuwe ginâgina.
âda mema auwe ginagina.
and like-this later she-will-marry-him.

Free translation
When Munavauna is of marriageable age, a certain man will come
to her mat. They will chew betel nut together. She will eat
the love-potion in his laibida, lime and tobacco. Munavauna
will like him, and she'll say, "You come and we'll go together."
He will take her away. Then we will look for her and say,
"Where is Munavauna? A man has come and taken her away!"
We'll wait, and we'll collect some of her bride-price, and
later we will take our gifts to them. Then she will marry.
It is because of the love-potion in his betel-nut and laibida
which she eats, and in the tobacco which she smokes that she
marries him.