## ILLUSTRATIONS OF THE IPA

Valerie Guerin<br>Department of Linguistics, University of Hawaili at Mānoa<br>valerie.guerin@gmail.com

## Katsura Aoyama

Department of Speech-Language \& Hearing Sciences Texas Tech University Health Sciences Center<br>katsura.aoyama@ttuhsc.edu

Mavea is spoken on the eponymous island, Mavea, a satellite island off the east coast of Espiritu Santo Island, northern Vanuatu. The language is highly endangered. There are about 34 fluent speakers on Mavea Island (aged 30 and older), out of a total island population of around 210. There are at least another 30 Mavea speakers who have left the island permanently. These speakers now live throughout Vanuatu, mainly on Espiritu Santo Island (in the villages of Deproma and Matevulu), Aore Island, and in Port Vila, the capital city of Vanuatu. All Mavea speakers are bilingual in Bislama, one of the official languages of Vanuatu.

Mavea is part of the Oceanic language family. Based on a lexico-statistical comparative analysis of about 200 lexical items, Tryon (1976) established that Mavea shares $73 \%$ cognates with Tutuba, $72 \%$ with the now extinct language Aore, $67 \%$ with Tamambo, $66 \%$ with Araki, and $64 \%$ with Tangoa. These percentages suggest that Mavea is part of the North Central Vanuatu subgroup (see also Clark 1985).

The data provided in this Illustration originate from the first author's field work on Mavea, carried out for ten months between 2005 and 2007. The descriptions presented here primarily derive from the analysis of a male speaker (born in 1971), and a female speaker (born around 1945). All transcriptions are based on auditory evaluation.

## Consonants

The Consonants Table shows the phonemic inventory of Mavea. A slightly different phonemic inventory can be found in Tryon (1976: 13-25). That inventory is based on a 247 -word list, gathered and transcribed by Jacques Guy in the early 1970s. The only difference between Tryon's inventory and the one presented here is the voicing of the retroflex. It was reported as voiceless in Tryon 1976, but it is now voiced.

|  | Linguo- <br> labial | Bilabial | Labio- <br> dental | Alveolar | Retroflex | Velar |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Plosive | p | p |  | t | d | k |
| Nasal | m | m |  | n |  | y |
| Trill |  |  |  | r |  |  |
| Fricative | $\underline{\mathrm{v}}$ |  | v | s |  |  |
| Approximant |  |  |  |  |  | $(\mathrm{w})$ |
| Lateral approximant |  |  |  |  |  |  |

Note. One of the reviewers points out that many Austronesian languages have retracted post-alveolar consonants. The exact articulation of /d/ in Mavea remains to be established.

None of the plosives is aspirated, nor are they prenasalized as in the related language Tamambo (Riehl \& Jauncey 2005: 256).

The approximant is listed in parentheses in the table because its status as a phoneme is questionable, as we shall see below.

Near-minimal pairs are presented next, to illustrate the consonant phonemes. Note that throughout the text, the phonetic transcription of the accompanying sound files follows the phonemic transcription. The conditions for the allophonic variations reflected in the phonetic transcriptions are discussed below. The orthographic transcriptions (in italics) follow the phonetic transcriptions. The spelling conventions represented here were established in 2007 by the Mavea-speaking community. ${ }^{1}$ Linguolabials are not distinguished from labials in the orthography.

| /t/ | /utu/ <br> 'louse' | ['utu] | utu |
| :---: | :---: | :---: | :---: |
| /d/ | /udu-m/ tooth-2SG.Poss 'your tooth' | [u'durm] | udum |
| /m/ | /mo-manan/ <br> 3SG-be.ashamed <br> 'he is ashamed' | [mo'manan] | momanan |
| /m/ | /mo-mana/ <br> 3SG-laugh <br> 'he laughs' | [mo'ma:na] | momana |
| /n/ | /mo-yara/ 3SG-whine 'he whines' | [mõ'ทarra] | mongara |
| /s/ | /masa/ <br> 'wooden stick' | ['masa] | masa |
| /p/ | /pepe-m/ liver-2SG.poss 'your liver' | [pe'perm] | pepem |
| /p/ | /ape/ 'where' | [ ${ }^{17}$ a:pe] ${ }^{2}$ | ape |
| /k/ | /mo-voko/ 3SG-white 'it is white' | [mo'ßo:ko ${ }^{\text {² }}$ ] | movoko |
| /n/ | /mo-vono/ <br> 3SG-blocked <br> 'it is blocked' | [mo'фo:no | movono |
| /v/ | $\begin{aligned} & \text { /viriu/ } \\ & \text { 'dog' } \end{aligned}$ | ['firiu] | viriu |

[^0]| /v//mo-vila/ <br> 3sG-lightning <br> 'there is lightning' | [mo'vila] | movila |
| :--- | :--- | :--- |
| /r/ | /pere-na/ <br> branch-3SG.POSS <br> 'its branch' | [pe're:na] |$\quad$ perena

There also exists a set of geminate consonants, with low functional load. The geminates include $/ \mathrm{n}: \mathrm{m}: \mathrm{l} \mathrm{r} /$. The contrasts are presented in the near minimal pairs below.

| /n/-/ni/ | /ko-sale $\quad$ nao/ 2SG-listen $\quad$ 1SG 'you listen to me' | [ko'sale nao] | kosale nao |
| :---: | :---: | :---: | :---: |
|  | /ko-sale $\quad$ n:a/ 2SG-listen $\quad 3 \mathrm{SG}$ 'you listen to him' | [ko'sale n:a] | kosale nna |
| /1/-/1:/ | /ko-lua/ 2SG-vomit 'you vomit' | [ko'lua] | kolua |
|  | /malu-na/ <br> under-3SG.POSS <br> 'its underneath' | [ma'lu:na] | malluna |
| /m/-/mi/ | /sama/ 'outrigger' | ['sa:ma] | sama |
|  | /amia/ <br> 'before' | ['am:a] | amma |
| $/ \mathrm{r} /-/ \mathrm{r} /^{3}$ | /ru/ 'go in' | ['ru] | ru |
|  | /ru/ <br> 'insist' | ['r:u] | rru |

In our 1600 -entry dictionary, all consonants other than the geminate $/ \mathrm{m}$ :/ were found in onset position. All consonants other than / $\mathrm{d} /$, and the geminates can occur in coda position. The geminate /r:/ does not appear in medial position. The restricted distribution of these phonemes could be due to limited amount of data. Note that, in Vanuatu, geminates are reported in Sakao, a language spoken in Espiritu Santo, geographically close to Mavea.

[^1]Table 1 Distribution of labial and linguolabial phonemes.

|  | $\mathbf{i}$ | $\mathbf{e}$ | $\mathbf{a}$ | $\mathbf{u}$ | o |
| :--- | ---: | ---: | ---: | ---: | ---: |
| $\mathbf{p}$ | 23 | 37 | 95 | 69 | 57 |
| $\mathbf{m}$ | 5 | 10 | 93 | 2 | 17 |
| $\mathbf{v}$ | 11 | 14 | 106 | 66 | 85 |
| $\mathbf{p}$ | 13 | 26 | 39 | - | 1 |
| $\mathbf{m}$ | 4 | 15 | 89 | - | 1 |
| $\mathbf{v}$ | 55 | 18 | 61 | - | 5 |

Geminates in Sakao are found in word-initial and medial position. The only restriction on geminates in Sakao is that /r:/ cannot occur word-finally (Crowley 2002: 600).

## Linguolabials

Linguolabials (also known as apico-labials) are produced with the tongue touching the upper lip (Maddieson 1987: 21). They have been reported in two languages spoken in Brazil (Umotina and Pirahã) and in Chaga, one of the Bantu languages of Tanzania (Maddieson 1987: 22). In Vanuatu, they are found in at least seven languages, forming an areal feature of South Santo and North Malakula (Maddieson 1987: 23, Lynch 2005: 389). In Mavea, there are three linguolabials: the stop $/ \mathrm{p} /$, the fricative $/ \mathrm{v} /$, and the nasal $/ \mathrm{m} /$. They contrast respectively with the bilabials $/ \mathrm{p} /, / \mathrm{m} /$, and the labiodental $/ \mathrm{v} /$ in the speech of only two speakers (that is about $6 \%$ of the Mavea-speaking community). ${ }^{4}$ In the speech of all other speakers, linguolabials are produced as labials; /v/ is pronounced as $[\phi]$, [ $\beta$ ], [v] or [ f$]$, $/ \mathrm{m} /$ as $[\mathrm{m}]$, and $/ \mathrm{p} /$ as [p]. According to Tryon (1976: 13-25) and Lynch (2005: 391), linguolabials evolved from bilabials followed by non-rounded vowels in Proto Oceanic (POc), the ancestor language. In our dictionary, linguolabials and labials are distributed as is shown in table 1.

As can be seen in this table, linguolabials appear predominantly before non-rounded vowels, with a majority before $/ \mathrm{a} /$. They are absent before the rounded vowel $/ \mathrm{u} /$. Somewhat unexpectedly, however, they are found preceding the rounded vowel [o], albeit rarely. In our dictionary, there are seven lexemes, listed below, where the linguolabials occur before [o]. ${ }^{5}$

| /opo/ | [opo] | opo | 'warm' |
| :--- | :--- | :--- | :--- |
| /domo/ | $[$ domo $]$ | domo | 'be sorry for' |
| /dovo/ | $[$ dovo | dovo | 'through' |
| /eldovo/ | $[$ eldovo $]$ | eldovo | 'harvest new yam' |
| /ovo/ | [ovo] | ovo | 'frigate bird' |
| /rovo/ | [rovo] | rovo | 'plate, dish' |
| /rovorovo/ | [rovorovo | rovorovo | 'kind of flat fish' |

## /pl

The voiceless bilabial stop /p/ has four allophones, [f], [v], [ $\beta$ ], and [p]. In onset position, [p] is preferred, but [f] sometimes (though rarely) appears as an alternative. In word-final position, any of the allophones may surface. Across morpheme boundary and in between vowels, only [p] appears. This allophonic variation is also found in borrowed words. The Bislama lexeme kap 'cup' may be pronounced with any of the allophones, given that $/ \mathrm{p} /$ is in

[^2]coda position. These variations were found in the speech of individual speakers and across a range of speakers.

## /v/

The voiced labiodental fricative $/ \mathrm{v} /$ appears to have many allophones, including [ $\phi$ ], [ $\beta$ ], [ f ], [ v ], and [ v ], with or without breathy onset and rounding. [ f$]$ is preferred over [ v$]$ wordfinally, and [v], $[\phi]$, or [ $\beta$ ] are preferred intervocalically. [f] can be found intervocalically, too, especially in the speech of younger speakers. In word-initial position, [v] and [f] appear in free variation.

## /t/ and /d/

When Tryon's (1976) data were collected, /t/ and retroflex / $\mathrm{t} /$ contrasted in their manner of articulation. Today, the voiceless alveolar /t/ contrasts with the voiced alveolar retroflex /d/.

## $/ \mathrm{w} /{ }^{6}$

The approximant $/ \mathrm{w} /$ is listed in parentheses in the aforementioned inventory, because its distribution is very limited. [w] serves as the onset of a word in only three lexemes: ['weti] 'vein', ['wepe] 'Pacific imperial pigeon', and ['war] 'water'. The word for 'water' is reconstructed in POc as *waiR and in Proto North Central Vanuatu as *wai.

## Ir/

The phoneme /r/ has two allophones, namely the trill [r]:

```
/mo-ara/ ['marra] moara
3SG-red
'it is red'
```

and the tap [r]:
/vira-na/ [fi'ra:na] virana flower-3sG.Poss
'its flower'
The allophones appear in free variation.

## Consonant combination ${ }^{7}$

In the onset position of a word or a syllable and across syllable boundaries, there may be at most two consecutive consonants. However, at the end of a word or in word-medial position, complex codas do not occur.

Table 2 lists all the consonant clusters found in the onset position of a word in our data. ${ }^{8}$ The first member of the cluster is a coronal or a labial, while the second member of the cluster is in most cases a coronal, but can also be dorsal or labial.

No two identical consecutive consonants were found across syllable boundaries in our data except for geminate consonants. ${ }^{9}$ The approximant [w] was not found in any consonant combination. The retroflex [d] was found only once as first member of a combination, while [p] was not found as first member of a consonant combination. On the other hand, the segments $/ \mathrm{r} /$ and $/ 1 /$ can be used as first member of a combination before any other consonants. The most

[^3]Table 2 Consonant combination in onset position of a word.

| Cluster | Example | Meaning |
| :--- | :--- | :--- |
| /rk/ | rkata | 'stick to something' |
| $/ \mathrm{rp} /$ | rpasi | 'burn something' |
|  | rpaia | 'bang something' |
| $/ \mathrm{vl} /$ | Vleal | 'hit' |
| /sp/ | Vleia | 'pick up something' |
| /pi/ | spitia | 'pierce something' |
| /nt/ | ple | 'spread wings' |
| /nd/ | ntaa | 'be afraid' |

commonly found second members of a consonant combination across a syllable boundary are $[\mathrm{s}]$ and $[\mathrm{t}]$, and the least commonly found is [p].
Note that, across syllable boundaries, two consecutive consonants are distributed over two syllables: one in the coda and one in the onset position.

```
/ravti/ [rav.ti] ravti
'break'
```

There are cases where two consecutive consonants appear in the onset of a syllable. One case is when the first consonant is $/ \mathrm{p} /, / \mathrm{t} /, / \mathrm{k} /$, or $/ \mathrm{v} /$ and the second consonant is $/ \mathrm{r} /$.

```
/vavrui/ [va.vrur] vavrui
'kind of tree'
```

The other case is when the first consonant is $/ \mathrm{p} /$ or $/ \mathrm{v} /$ and the second consonant is $/ 1 /$.

```
/saltavles/ [sal.ta.vles] saltavles
'kind of tuna fish'
```

More details on consonant combinations across syllable boundaries are provided in the appendix.

## Vowels

Mavea has five phonemic vowels. In the graph in figure 1, the first two formants of the five vowels are plotted against each other. The graph is based on the pronunciation of a female speaker in her 60s. At least thirty tokens of each vowel were used. The consonants in the tokens were varied but not equally distributed in place and manner of articulation. The ellipses were fitted using the 'direct least-square fitting' algorithm described in Pilu, Fitzgibbon \& Fisher (1996). ${ }^{10}$ Please note that the outliers ( $>2$ standard deviations from the mean) were disregarded during the fitting process.

[^4]

Figure 1 Plots of the first two formants for a female speaker.
Evidence for the vowel phonemes is presented below in the form of (near-)minimal pairs.

```
/u/-/o/ /puru-m/ [pu'rum] purum
    back-2SG.POSS
    'your back'
    /poro-m/ [po'rom] porom
    ear-2sG.Poss
    'your ear'
/o/-/a/ /n:o/ ['n:o] [1 nno
    2SG
    'you'
    /n:a/ ['n:a] nna
    3SG
    's/he, it'
/u/-/e/ /vulu-na/ [fu'lu:na] vuluna
    feather-3sG.POSS
    'its feather'
```

[^5]|  | /vele-na/ <br> tail-3SG.POSS <br> 'its tail' | [fe'le:na] | velena |
| :---: | :---: | :---: | :---: |
| /a/-/e/ | $\begin{aligned} & \text { /masa/ } \\ & \text { 'wooden stick' } \end{aligned}$ | ['massa] | masa |
|  | /ese-m/ <br> name-2SG.POSS <br> 'your name' | [ $\mathrm{e}^{\prime}$ se:m] | esem |
| /a/-/u/ | /sasa/ <br> 'work' | ['sa:sa] | sasa |
|  | /susu-m/ <br> breast-2SG.POSS <br> 'your breast' | [su'sum] ${ }^{12}$ | susum |
| /i/-/u/ | /pai-m/ shoulder-2SG.POSS 'your shoulder' | [pa'im] | paim |
|  | /pau-m/ <br> knee-2SG.POSS <br> 'your knee' | [pa'um] | paum |

All of the vowels can appear initially, medially, or finally. Our impressionistic observation is that vowels become nasalized before [ $\mathrm{\eta}]$. It appears that there is no or little nasalization before or following [m] and [ n ], and following [ y$]$. This, however, needs to be verified instrumentally.

## Vowel lengthening

Length is not phonemic. Vowels are lengthened as a result of stress. There are, however, exceptions to this claim. Some stressed vowels, such as stressed vowels before geminate consonants, are not lengthened. This is similar to the Italian-style short-long vowel distribution before long-short consonants. ${ }^{13}$ On the other hand, some vowels are lengthened without being stressed. This occurs mainly in connected speech and not in isolation, as discussed in section 'Exceptions to penultimate stress placement', below.

## Vowel deletion and reduction

In final position of words containing at least two syllables, the vowels $/ \mathrm{i} /$, $/ \mathrm{u} /$, and $/ \mathrm{o} /$ may undergo deletion in rapid speech.

```
/sileti/ [si'le:ti]~ [si'lett] sileti
```

'worm'
In the same position, the vowels /a/ and /e/ do not delete.

[^6]A vowel preceding a stressed syllable is also likely to delete, unless deletion results in an illicit consonant cluster. This type of deletion was found to affect the vowels $/ \mathrm{u} /, / \mathrm{o} /, \mathrm{i} /$, and $/ \mathrm{a} /$ in our data. An example follows.

```
/vi.ri.a/ [vi.'ri.a] ~ ['vri.a] viria
```

'black'
Finally, the final vowel /o/ of three morphemes prefixed to a verb (namely mo- ' 3 sG ', sopo- 'NEG', and mo- 'COND') assimilates to the verb's initial vowel if this vowel is $/ \mathrm{a} / \mathrm{or}$ /e/. This results in a long vowel, [a:] or [e:]. Note, however, that the /o/ is maintained in the spelling.

```
/mo-ara/ ['marra] moara
3SG-red
'it is red'
/mo-ese/ ['me:se '] moese
3SG-blue
'it is blue'
```


## Free variation in vowels

A final vowel /a/ or /o/ in words that are at least two syllables long may be realized as [e]. Variation between [a] or [o] and [e] in unstressed final syllables is free.

```
/para/ ['parra] ~ ['pa:re] para
'spider'
```


## Vowel sequence

In a sequence of two consecutive vowels, if the second vowel is /i/ or /e/, it may phonetically 'merge' with a preceding vowel in rapid speech to become the glide [ I ] and produce a phonetic diphthong. If the first vowel of this sequence is penultimate and receives stress, the phonetic diphthong does not form.

There can be up to four consecutive non-identical vowels in a word. Words with three vowels are monomorphemic or polymorphemic. Most four-vowel strings occur in polymorphemic words. If there are three or four consecutive vowels in a word, and if one of the middle vowels is $/ \mathrm{i} /, / \mathrm{u} /$, or $/ \mathrm{o} /$, then the high front vowel is pronounced as the glide [ I ], and the back vowels are pronounced as [w].

```
/ko-vakoi-a/ [kova'kora] kovakoia
2SG-wash-3SG
'you wash it'
/ko-tarao-a/ [kota'rawa] kotaraoa
2SG-choose-3SG
'you choose it'
```

Two identical consecutive vowels are only possible at morpheme boundaries. The two vowels merge, resulting in a longer vowel.

```
/ko-one-a/ ['komea] koonea
2SG-see-3SG
'you see it'
```


## Stress

Primary stress falls predominantly on the penultimate syllable. Adding a suffix shifts the stress, suggesting that stress is not phonemic.

```
/patu/ ['patu] patu
'head'
/patu-ira/ [patu'ira] patuira
head-3PL.Poss
'their head'
```

Secondary stress falls on every second syllable to the left of the syllable receiving primary stress.
/tamanatu-ku/ [ta mana'tu:ku] tamanatuku
husband-1sG.POSS
'my husband'

## Exceptions to penultimate stress placement

We found at least two exceptions to the claim that stress is on the penult in Mavea.
(i) There are some lexemes whose last syllable is closed, and which are clearly stressed on that last syllable.

```
/tamaa-m/ [ta'mam] tamam
father-2sG.poss
'your father'
```

The above example contrasts with the following one, which has a closed final syllable and penultimate stress.

```
/mo-manan/ [mo'maman] momanan
3SG-be.ashamed
'he is ashamed'
```

The main difference between these examples is that [ta'mam] 'your father' contains the possessive suffix /-m/ '2SG.POSS'. This morpheme historically derives from POc *mu '2SG.POSS'. To account for the data, we assume that the vowel /u/ of the possessive is present underlyingly, although it has been lost on the surface. The possessive morpheme thus counts as a syllable for stress assignment. ${ }^{14}$ This explanation is corroborated by the following example, where the final vowel deletes, but stress placement does not change.
/sileti/ [si'le:ti] ~[si'le:t] sileti
'worm'
(ii) Stress sometimes falls on the last (open) syllable of a disyllabic verb. This is the case of [mo'si] 'he goes down' in the following sentence, extracted from the text below.

```
/mo-van~vano mo-si/ [movan'va:no mo'si]
3SG-RED~walk 3sG-go.down
'he walked down'
```

[^7]These verbs are used in a serial verb construction and we suspect that stress placement is affected by this syntactic construction. This claim, however, requires further validation. A similar exception to penultimate stress placement is found in Lewo, a language spoken in central Vanuatu. Early (1994: 68) argues that final stress in disyllabic verbs in Lewo is due to subject markers being extra-metrical. Whether this is also true of subject markers in Mavea remains to be established.

## Transcriptions

The following transcription is narrated by a female speaker, born around 1945. She is one of the two speakers on Mavea Island who uses linguolabials on a regular basis. The transcription is an excerpt from a narrative about her father. Note that in the text we mark phrasal and sentential stress. Not all vowels receiving stress are lengthened, and some phrase-final vowels are lengthened without being stressed.

## Phonetic transcription

'nao | 'nao ta'ma:ku || ma mo'lulvo: || 'am:a mo'lulvo ro: | mo'to mo'va sur pon a'ite $r^{2} \|$ movan'vaino mo'si moma'surr || a'lao na tas moma'surr ma'tan ti'narra || məs moma'surr ma'tan ti'na:ra ro || molpar'para ro 'monrə: || $\partial \mathrm{k}^{\top} \|$ 'mon ka'kato 'фo:ko a'ite || ma'tan 'ama ro ka'kato 'ßorko mo'derre | 'merre || ka'kato 'vorko mosopo'tea || ka'kato $\beta$ i'rie na || ə 'tarro ro 'ma:ma moma'surr mo'si | molpar'parra va ma'tan ti'na:ra ro 'mom ka'kato 'фoiko a'ite || ro morn ka'kato 'ßorko ro | 'merv ro|| ka'kato 'ßorke mo'tapair 'marma ro mo'terte || 'terte nə 'maima mo'sa:ima | m mo'sa: || rmpm 'ma:ma mo'meltapul mo'sa:ima || mo'sa: | mo'pon mo'suruv ro 'mon ma || 'tamleser a'ite || 'moma ro mo'varara na 'movə || 'nıo nel na'par ko'ma kolpar'para\|

## Phonemic transcription with interlinear English gloss

The first line of the following text is a morphophonemic transcription. The second line provides the English gloss.

## Abbreviations

| 1 | first person | HST | hesitation marker | POSS | possessive |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | second person | IMPF | imperfective aspect | RED~ | reduplication |
| 3 | third person | IT | iterative aspect | SG | singular <br> COMP |
| complementizer | LOC | location | TR | transitive marker |  |
| FST | false start | NEG | negation |  |  |
| nao |  | nao tama-ku |  | ma | mo-lo-ulvo |

amia mo-lo-ulvo ro mo-to mo-va suri pon aite ro
before 3 SG-IMPF-young then 3SG-stay 3SG-go about night one then
mo-van~vano mo-si mo-masura alao na tasi
3SG-RED~walk 3SG-go.down 3SG-descend sea.shore LOC sea
mo-masura matan tinara mos mo-masura matan tinara ro 3SG-descend place name FST 3SG-descend place name then mo-lo-par~para ro mo-one $u \quad u \quad k \quad$ mo-one 3SG-IMPF-RED~follow.reef then 3SG-see HST HST FST 3SG-see kakato voko aite matan amia ro kakato voko mo-dere heron white one because before then heron white 3SG-no

| mo-ere | kakato | voko | mo-sopo-tea | kakato | viria | na |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG-not.have | heron | white | 3SG-NEG-one | heron | black | only |


| u | taro | aro | mama | mo-masura | mo-si |
| :--- | :--- | :--- | :--- | :--- | :--- |
| HST | time | here | dad | 3SG-descend | 3SG-go.down |


| mo-lo-par $\sim$ para | va | matan tinara | ro | mo-one | kakato |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG-IMPF-RED $\sim$ follow.reef | go | place name | then | 3SG-see | heron |

voko aite ro mo-one kakato voko ro mo-evui ro
white one then 3SG-see heron white then 3SG-finish then
kakato voko mo-tapair mama ro mo-tete
heron white 3SG-shake dad then 3SG-fly

| tete | na | mama | mo-sa | aima | m | mo-sa |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| fly | but | dad | 3SG-go.up | home | FST | 3SG-go.up |

rmpm mama mo-me-lo-tapula mo-sa aima
FST dad 3SG-IT-IMPF-return 3SG-go.up home

| mo-sa | mo-pon | mo-suruvu | ro |
| :--- | :--- | :--- | :--- |
| 3SG-go.up | 3SG-night | 3SG-sleep | then |


| mo-one | ma | tamlesea | aite | mo-ma | ro | mo-vara-i-a |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 3SG-see | COMP | elder | one | 3SG-come | then | 3SG-tell-TR-3SG |

nia mo-v u nio nele napar ko-ma ko-lo-par~para
3SG 3SG-say HST 2SG this today 2SG-come 2SG-IMPF-RED~follow.reef
Orthographic version
Nao, nao tamaku, ma molulvo. Amma molulvo ro, moto mova, sur pong aite ro, movanvano mosi momasur, alao, na tasi, momasur 'Matan tinara.' Momasur 'Matan tinara' ro, molparpara ro, moon, um, um, moon kakato voko aite. Matan amma, ro, kakato voko modere, moere. Kakato voko mosopotea. Kakato viria na. Um, taro ro mama momasur mosi molparpara va 'Matan tinara' ro, moon kakato voko aite. Ro moon kakato voko ro, moev ro, kakato voko motapair mama ro motete. Tete, na mama mosa aima, um mosa, um, mama momeltapula mosa
aima. Mosa mopong mosuruv ro, moon ma tamlese aite. Moma ro movaraia nna mov: 'Nno nel napar koma kolparpara?'

## Free English translation

Me, me, my dad, when he was young. A long time ago, when he was young, one day he walked down, to the shore, to the sea, he went down to 'Matan tinara.' He went down to 'Matan tinara' then, he was following the reef, he saw, uh, uh, he saw a white heron. Because before, there were no white herons. There was not one white heron. Only black herons. Uh, at the time, dad was walking down, he was following the reef at 'Matan tinara', then he saw a white heron. Then he saw a white heron, after, dad made the white heron jump with fear, then it flew away. It flew away, but dad went back home, um he went up, um, dad returned home. He went up, at night, he was sleeping then he saw that there was an old man. He came to talk to him, he said: 'Are you the one who was following the reef today?'

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Appendix. The list of consonant combinations that were found across a syllable boundary in the data

|  |  | Second consonant |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | t | k | v | v | m | m | y | r | n | 1 | s | p | p | d |
|  | t |  | 1 | 1 | 2 |  | 2 | 2 |  | 2 | 3 |  | 1 |  |  |
|  | k | 1 |  |  |  |  |  |  |  |  |  | 2 | 1 |  |  |
|  | v | 1 |  |  |  |  |  |  | 1 | 1 | 6 | 1 |  |  |  |
|  | v | 5 | 2 |  |  |  |  |  |  |  |  | 5 |  |  |  |
|  | m |  |  |  |  |  |  |  |  |  |  | 1 |  |  | 1 |
|  | m | 3 |  |  |  |  |  |  | 2 |  | 2 | 1 |  |  | 2 |
|  | v |  |  |  |  |  |  |  | 2 |  | 2 | 2 |  |  | 1 |
|  | r | 15 | 4 | 5 | 7 | 4 | 3 | 5 |  | 3 | 5 | 7 | 6 | 4 | 2 |
|  | n | 8 |  | 1 |  | 1 | 2 |  |  |  |  | 1 | 4 |  | 3 |
|  | 1 | 13 | 1 | 2 | 6 | 4 | 5 | 1 | 1 | 1 |  | 6 | 2 | 2 | 4 |
|  | s | 1 |  | 1 | 1 | 1 | 1 |  |  |  | 1 |  | 2 | 1 | 1 |
|  | p | 2 |  |  |  |  |  |  |  | 1 |  | 2 |  |  |  |
|  | p |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | d |  |  |  |  |  |  |  |  | 1 |  |  |  |  |  |

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[^0]:    ${ }^{1}$ See Guerin (2008) for a description of the spelling conventions.
    ${ }^{2}$ A glottal stop is occasionally found before or after a vowel at a word boundary.

[^1]:    ${ }^{3}$ There are no sound files associated with this set of data.

[^2]:    ${ }^{4}$ There is at least one speaker residing in Deproma who uses linguolabials when speaking Mavea. She is in her 70s and her first language is Tutuba.
    ${ }^{5}$ There are no sound files associated with this set of data.

[^3]:    ${ }^{6}$ There are no sound files associated with the data in this section.
    ${ }^{7}$ There are no sound files associated with the data in this section.
    ${ }^{8}$ It is possible that there was historically a vowel between the consonants. As for the nasal and stop clusters, it could be that the stop was historically prenasalized. However, from a synchronic perspective, there is no evidence for these claims.
    ${ }^{9}$ Geminate consonants are treated as CC and each C is split across a syllable boundary.

[^4]:    ${ }^{10}$ The MATLAB codes for fitting and drawing the ellipses were obtained from http://homepages. inf.ed.ac.uk/rbf/CVonline/LOCAL_COPIES/PILU1/demo.html (accessed 4 March 2009).

[^5]:    ${ }^{11}$ In slow elicitation, initial long consonants may sound fully syllabic.

[^6]:    ${ }^{12}$ The distribution of $[\mathrm{u}]$ as allophone of $/ \mathrm{u} /$ remains to be determined.
    ${ }^{13}$ We are thankful to one of the reviewers for pointing this out to us.

[^7]:    ${ }^{14}$ It is possible to assume, as a reviewer pointed out, that a closed final syllable always receives stress, and that the 'exception' is [mo'ma:nan] rather than [ta'mam]. If this is the case, however, we do not have an explanation to account for the 'exception'.

