

## A phonetic sketch of Urama

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Urama (Glottocode: uram1241) is one of the varieties of the Northeast Kiwai group (iso code: kiw).<sup>1</sup> It is spoken in the middle of the delta area of the Gulf Province of Papua New Guinea, in the following villages on Urama Island on the coastal edge of the delta: Kivaumai, Larimia, Aibigahe, Kinomere, and Mirimailau; it is also spoken in Morovamu and Mairivepea on the island immediately to the east, in Gauri, Tovei and Omaumere further inland to the northwest, and Era Goiravi and Naharo further inland to the northeast. Urama Island is indicated by the triangle marker on the inset map of the Gulf of Papua in Figure 1 (map created using the free and open source application QGIS).



**Figure 1.** Map of the Gulf of Papua region, southern Papua New Guinea

There are roughly 6,000 speakers of Northeast Kiwai (Simons & Fennig 2017, based on W. Foley’s 2011 estimates); the population of Urama Island is much more difficult to

<sup>1</sup> We wish to thank and acknowledge the Urama community. Author names appear in alphabetical order. All errors remain with the authors.

estimate (see Brown et al. 2016: 1). Other dialects in the Northeast Kiwai group include Kope, Gibaio, Anigibi, and Fomomoto. The people living to the west of the Urama speak another Kiwaian language, Kerewo, but the people to the east speak an unrelated language, Purari. The Kiwaian family includes: Bamu, Northeast Kiwai, Southern Kiwai, Kerewo, Wabuda, and Morigi.

As the region constitutes a historical trade route, there has existed opportunity for language contact, most notably reflected in the lexicon. According to Wurm (1951), words in the various languages of the family have been diffused across different lexical strata, which reflect different historical periods. On this view, different strata are found in different languages, including non-Kiwaian languages located upriver.

A previous description of the phonetics and phonology of Urama is provided by Brown and colleagues (2016). This work aims to expand on those observations, including more complete generalisations regarding consonantal distributions, vowel qualities, vowel length, and tone.

Data presented in this paper were collected between 2014 and 2017. Locations for data collection by the third author include Kivaumai and Kapuna Hospital, and the first and second authors collected data in Auckland, New Zealand. Urama speakers who were consulted include: Roy Harai and his mother Gai'a of Kivaumai; Torogo Hinimo of Mirimailau; Nick of Kinomere; Nou of Kivaumai, and Karika Anea of Kivaumai. Data was collected by targeted elicitation of words, phrases, and sentences, and also through the collection of unscripted narratives. Elicitation during some sessions was largely exploratory, or dedicated to the compilation of a lexical/syntactic database, so the corpus of recordings available is not systematically organized for phonetic analysis, but instead stands as a sampling from which to draw preliminary generalisations.

## Consonants

Urama has a consonant inventory that is characteristic of other Papuan languages of the region (Foley 1986: 55). The consonant phones are presented below, with marginal phones indicated in parentheses:

Table 1. Urama Consonants

	Bilabial	Labiodental	Alveolar	Velar	Glottal
<b>Plosive</b>	p b		t d	k g	ʔ
<b>Nasal</b>	m		n		
<b>Fricative</b>		β	(s)		h
<b>Flap</b>			r		

There are relatively few consonant phonemes in the inventory, including a series of voiceless and voiced stops, a set of nasals, the fricatives /β/ and /h/, and the flap /r/, the latter of which occurs in word-initial position in a few pronouns, clitics, and particles, and in words borrowed from Motu and English. Examples of native lexical words (or at least lexical words with an uncertain source) with an initial flap include /rãβãràβã/~rãβùràβù/ 'gills'<sub>(01)</sub> and /rúbírúbí/ 'noise'<sub>(02)</sub>. In initial position in some word-forms, the flap is often produced as an alveolar lateral [l]. The status of /s/ is marginal, occurring largely in loans, though there are a few native words that begin with /s/. Some speakers produce /β/ as a labiodental fricative [v]; before low and rounded vowels the frication lessens and a rounded approximant [w] can be heard instead.<sup>2</sup> Thus, [v] and [w]

<sup>2</sup> While the underlying status of [w] is unclear, for some speakers, it appears to be in free variation with [β] and [v] in word-initial position. The wordlist by Brown and colleagues (2016) lists only 15 words beginning with <w>, and some of these have variants with [v]: *wadu~vadu* 'bamboo';

are surface variants of /β/. The syllable /βu/ seems to be quite rare; the only examples involve the prefix /oβ/ + a verb root beginning with /u/. The glottal stop /ʔ/, while occurring frequently in words, exhibits the highest frequency between identical vowels (e.g., /útáʔà/ ‘to sleep’<sub>(03)</sub>). It occurs word-internally, though if it is also assumed to occur word-initially in otherwise vowel-initial words, then this would make the distribution of this sound comparable to all other consonants (and would force all words to have onsets).

In addition, there is a surface glide [j], although this is not an underlying phoneme, and is the product of transitioning between vowels (as is [w] in some cases). These transitional glides will be discussed below in the section on vowels.

The voiceless stops are characterized by a small positive (i.e. short lag) voice onset time. This is illustrated in Figure 2, where it can be observed that there is a release burst, particularly in word-medial position. In slower speech, the voiceless stops can be produced with a larger positive (i.e. long lag) voice onset time.

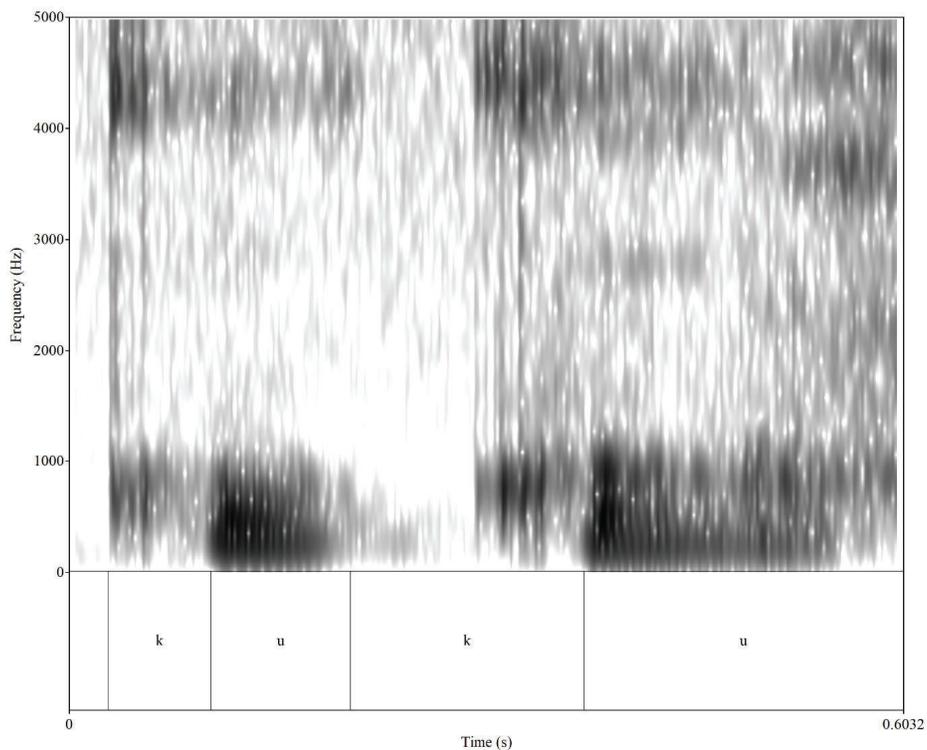


Figure 2. Spectrogram of /kúkù/ ‘stick’<sub>(04)</sub>

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*wapai~vapai* ‘bridge’; *wapea~vapea* ‘ship’; *wotu~votu* ‘who’. Some pairs are listed under entries for <v>: *vade~wade* ‘word’; *vato~wato* ‘dry, etc. These were tested for free variation, and in some instances the language consultant found only one variant of word initial [v] or [w] acceptable, indicating that this may be an emerging contrast.

The voiced stops exhibit a negative voice onset time, and are voiced through the duration of oral closure, as indicated by the word-initial and word-medial stops in Figure 3.

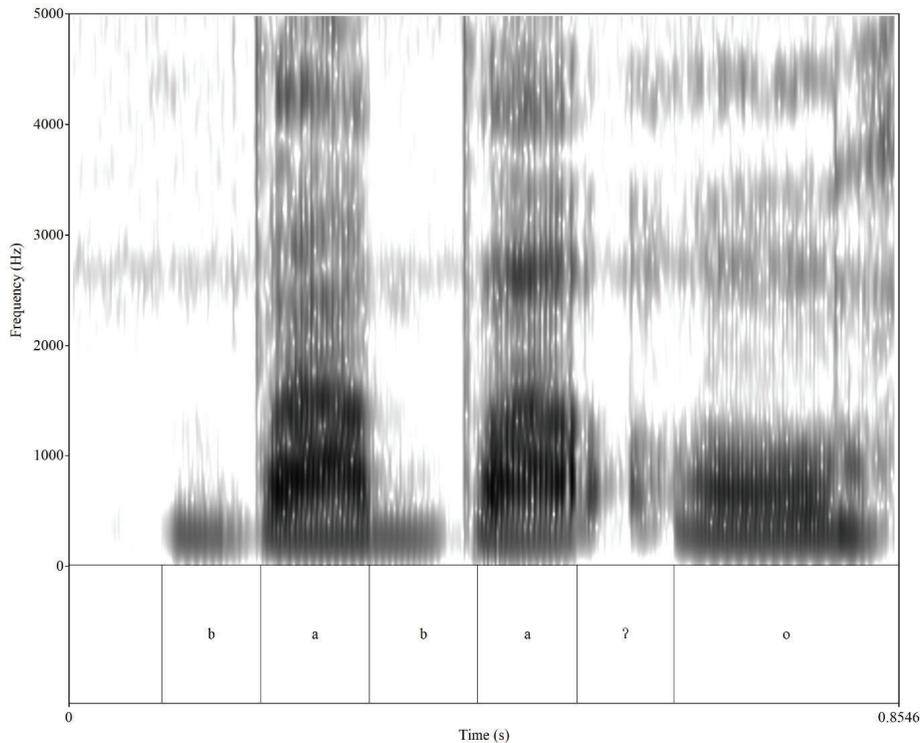


Figure 3. Spectrogram of /bàbàʔó/ 'tree fungus'<sup>(05)</sup>

There is no indication of frication (in terms of high energy noise), indicating there is no lenition of the stops in intervocalic position.

The following forms illustrate these consonantal contrasts in word-initial and word-medial positions:

(1)	Word-initial		Word-medial
	[b]	/bátá/ 'scale (n.)' <sup>(06)</sup>	/bàbàʔó/ 'tree fungus' <sup>(07)</sup>
	[d]	/dádò/ 'jellyfish' <sup>(08)</sup>	/édéʔà/ 'put down, place' <sup>(09)</sup>
	[g]	/gàbó/ 'path, road' <sup>(10)</sup>	/gági/ 'fat (N)' <sup>(11)</sup>
	[h]	/hátò/ 'only' <sup>(12)</sup>	/áháʔò/ 'come out' <sup>(13)</sup>
	[k]	/kákáá/ 'bailer' <sup>(14)</sup>	/hákà/ NEG <sup>(15)</sup>
	[m]	/mábó/ 'armband' <sup>(16)</sup>	/émé/ 'skirt' <sup>(17)</sup>
	[n]	/nátò/ 'footprint, trace, track' <sup>(18)</sup>	/bánà/ 'mangrove' <sup>(19)</sup>
	[p]	/pátà/ 'swamp' <sup>(20)</sup>	/dápé/ 'adze' <sup>(21)</sup>
	[r]	/ráútù/ 'with' <sup>(22)</sup>	/bàrà/ 'riverbank, side' <sup>(23)</sup>
	[s]	/sákù/ 'bald' <sup>(24)</sup>	/résà/ 'razor' <sup>(25)</sup>
	[t]	/tótó/ 'platform' <sup>(26)</sup>	/bátá/ 'scale (n.)' <sup>(27)</sup>
	[β]	/bàtíí/ 'place' <sup>(28)</sup>	/tàbá/ 'mudskipper' <sup>(29)</sup>

## Vowels

Also characteristic of the Papuan languages generally (see Foley 2000: 367) is Urama's vowel inventory, which includes five vowels, as indicated in Table 2.

Table 2. Urama vowels

	Unrounded		Rounded
	Front	Central	Back
<b>High</b>	i		u
<b>Mid</b>	e		o
<b>Low</b>	a		

A plot of the means of F1 and F2 for each of the vowels from a small corpus of words (74 vowel tokens from a list of disyllabic and trisyllabic words uttered by a single speaker, Roy Harai) is presented in Figure 4.<sup>3</sup>

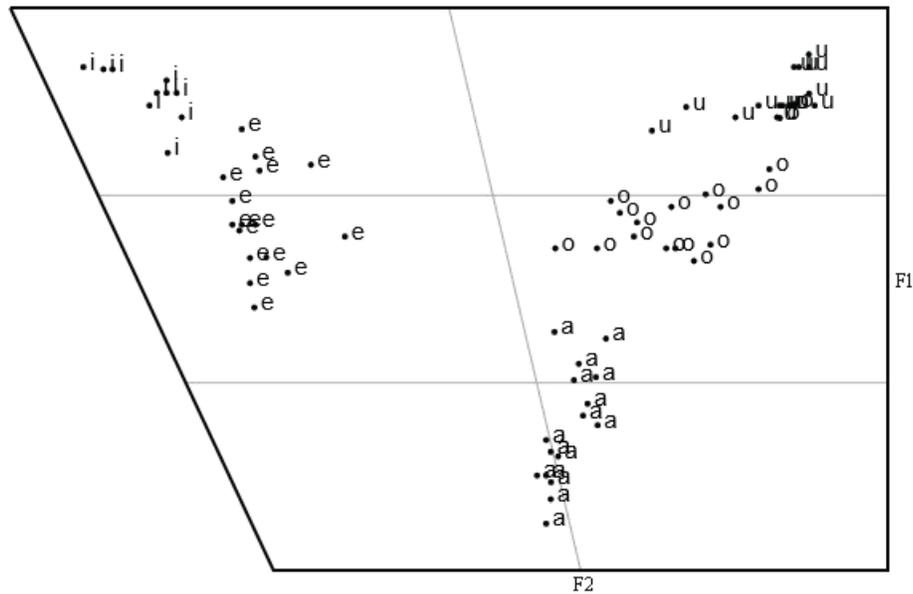


Figure 4. Vowel formant plot

The mid front vowel exhibits a broader range in height, and the mid back vowel tends to exhibit a broader range in backness, which derives a slight asymmetry in the inventory of mid vowels. In fast speech, there is a tendency (illustrated in the narrative) for /a/ in sequences of vowels to raise to [e], particularly when between high front vowels: [káβáíèì]~[káβáíàì] ‘the wind’.

These vowels are illustrated in the following forms:

- (2) /ímóʔà/ ‘spit (v.)’<sup>(30)</sup>  
 /émò/ ‘calf (of leg)’<sup>(31)</sup>  
 /ámò/ ‘breast’<sup>(32)</sup>  
 /òmò/ ‘river’<sup>(33)</sup>  
 /ùmú/ ‘dog’<sup>(34)</sup>

As mentioned above, there appear to be no underlying consonantal glides in the language, though glides are sometimes derived from underlying vowels in some sequences. In these

<sup>3</sup> Generated using Formant Plot online: <https://www.adambaker.org/formant-chart/formant-chart.html>

contexts, glides and vowels are in free variation. For instance, it is not uncommon for /...oa.../ and /...ua.../ sequences to surface as [...owa...] and [...uwa...], respectively. As an example, the form /táúò/ ‘old’<sup>(35)</sup> can surface as [táú.wò] or [táú.ò]. By extension, there do not seem to be contrasts between forms like [wára] and [úára] ‘fence’<sup>(36)</sup>, which would be expected if the glides were underlying in the language.<sup>4</sup>

Vowel length appears to be contrastive, evidenced by the following words: [ó:bó] ‘woman’<sup>(37)</sup> and [óbó] ‘water’<sup>(38)</sup>. There are only a handful of forms which exhibit such contrasts. One possible source of this vowel length contrast is accidental, whereby two identical and adjacent underlying vowels surface as a single long vowel. A likely contributing factor is the historical loss of some intervocalic consonants, resulting in vowel clusters, including clusters of identical vowels (Wurm 1973). This is Martin’s (2016) analysis of Kope, and thus it is extendable to Urama. Some Urama speakers have neutralized the vowel length difference in, for example, /ná:mú/ ‘older brother’<sup>(39)</sup> as [námú] and /má:mú/ ‘mother’<sup>(40)</sup> as [mámú]. This suggests that the vowel length contrast, important in other NE Kiwai dialects, may be being lost in Urama.

### Syllable structure

Syllables in Urama are simple: (C)V. This means there is no consonant clustering, but strings of adjacent vowels are common. The following forms illustrate the range of possible syllables (with the proviso that V-initial words may be preceded by a glottal stop):

#### (3) Canonical syllables

V: /ábèà/ ‘father’<sup>(41)</sup> /dóhòì/ ‘afternoon, evening’<sup>(42)</sup> /káβáíà/ ‘wind’<sup>(43)</sup>  
 CV: /hóhò/ ‘face’<sup>(44)</sup> /híbà/ ‘crocodile’<sup>(45)</sup> /bòmó/ ‘pig’<sup>(46)</sup>

Forms such as those below illustrate that sequences of vowels are common: /túíái/ ‘the middle’<sup>(47)</sup>, /híβíòíìòròì/ ‘sunrise’<sup>(48)</sup>, /húhúíá/ ‘rainbow’<sup>(49)</sup>, /áíáú/ ‘cockatoo’<sup>(50)</sup>.

What appear to be diphthongs in fast speech are syllabified as separate syllables in careful speech: what would be syllabified as [ó.dàù] ‘go’<sup>(51)</sup>, with a diphthong in fast speech, is syllabified as [ó.dà.ù], with the vowels in separate syllables, in careful speech. That is, a V<sub>1</sub>V<sub>2</sub> diphthong in fast speech can be syllabified as V<sub>1</sub>.V<sub>2</sub> in careful speech. Another syllable type occasionally seen in contracted words is CVn, e.g., in [hin.ta.bo] ~ [hi.ni.ta.bo] ‘then’ [no recording; tone unknown]; it is also sometimes seen in words borrowed from English, for example, /ei.den.ti/ ‘agent’ [no recording].

### Tone

Urama exhibits a pitch accent system, but only a few words can be found where tone alone distinguishes their meanings:

#### (4) Minimal tone pairs

/nímò/ ‘louse’ <sup>(52)</sup>	/nìmò/ ‘us’ <sup>(53)</sup>
/múbà/ ‘sharp point’	/múbá/ ‘bend of a river’
/éʔà/ ‘see’	/èʔá/ ‘knife’ <sup>(54)</sup>

<sup>4</sup> There are, however, some cases of the appearance (or absence) of glides in intervocalic position: maua \*[mawa] ‘older cross-sibling’ vs [awaβo] \*[auaβo] ‘stupid’. These cases warrant further investigation.

It has been claimed for the nearby related language of Anigibi that the default tonal melody for words is a low (L) tone, but any syllable in a word may have a high (H) tone (see Donohue 1997). It seems clear, though, that in Urama words may consist of only L tones; cf. [òmə] ‘river’<sup>(55)</sup>. Careful analysis of the tone system has yet to be undertaken, so the tone data given here is tentative.<sup>5</sup> Some tonal melodies for words are given below, with H tones as a point of reference:

- (5) First syllable H (HL, HLL)  
 /tùà/ ‘lizard’<sup>(56)</sup>  
 /térè/ ‘floor’<sup>(57)</sup>  
 /imè/ ‘crab’<sup>(58)</sup>
- (6) First 2 syllables H (HH, HHL)  
 /tóé/ ‘fear’<sup>(59)</sup>  
 /gáhó/ ‘fish trap’<sup>(60)</sup>  
 /éhúmè/ ‘vein’<sup>(61)</sup>  
 /imítò/ ‘breadfruit’<sup>(62)</sup>
- (7) First 3 syllables H (HHH):  
 /úríó/ ‘picture’<sup>(63)</sup>  
 /húhíá/ ‘rainbow’<sup>(64)</sup>  
 /dóútú/ ‘tomorrow’<sup>(65)</sup>  
 /dúrupú/ ‘owl’<sup>(66)</sup>  
 /épéné/ ‘black ant’<sup>(67)</sup>  
 /hépátó/ ‘ear’<sup>(68)</sup>
- (8) Second syllable H (LH, LHL):  
 /dùú/ ‘sago’<sup>(69)</sup>  
 /àbó/ ‘post’<sup>(70)</sup>  
 /èʔá/ ‘knife’<sup>(71)</sup>  
 /mùkó/ ‘fire’<sup>(72)</sup>
- (9) Second and third syllable H (LHH):  
 /βàtíí/ ‘place’<sup>(73)</sup>
- (10) Third syllable H (LLHL):  
 /gùàgùá/ ‘frog’<sup>(74)</sup>

Martin (2016) provides an analysis of tone in Kope, where it is claimed that tone and vowel length interact. This is an area that remains to be explored in Urama. It is also unclear whether tone is implemented consistently with any dynamic F0 trajectories (i.e. rises or falls), or whether there is a ‘neutral’ or mid tone; this is an area for future research.

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<sup>5</sup> There appears to be a great deal of variation in the realization of tone in the language. While many of the forms here are consistently produced with a particular melody by one speaker, slightly different melodies are found in the community Urama dictionary that is in preparation. What is noteworthy is that where there are disagreements, it is usually in the interpretation of an initial H (followed somewhere in the word by a L), where the dictionary entries have instead a L tone. Further research will hopefully shed light on the nature of this variation.

## Transcription

The following is a broad transcription of a sample of a narrative performed by a female speaker, Karika Anea from Urama Island, Papua New Guinea. As intonation and its effect on word-tone is not at present properly understood, tonal representations have been omitted from the broad transcription.

## Broad phonemic transcription

potoi kaβaia ra hiβio rai ro aiperemahibaido hotu ro  
 pupuohiai ita merei ata mamui oroβiei tapo ohuʔo  
 niti ro βade bida buaido ita paoido hotu ro oβaida merei  
 mamui aʔo eidai ri nu pupuohia pupuo merei ka  
 potoi kaβaia ro pupuhia ha pohududio, inai nu pupuhia  
 imuhu dudi ta merei nu mamui pupuo, pupuo ha pohidio  
 pupuohia apohidio ita potoi kaβaiei ro haʔimai ro ohiai  
 ka ita nu, nu ri emaʔai emehai ka  
 ita hiβioi ohui ka pupuohia ha pamai, ita mere  
 tutuhia tatoi merei mamui aʔoi itai ka  
 ita potoi kaβaiei ro aʔoi ka hiβioi nu pupuo ka

## Orthographic Transcription and Morpheme Glosses<sup>6</sup>

<i>Potoi</i>	<i>kavaia</i>	<i>ra</i>	<i>hivio</i>	<i>ra-i</i>	<i>ro</i>	<i>ai-p-eremahibai=do</i>
inland	wind	and	sun	and=DET	AG	ASRT-REM-dispute=DU

<i>hotu</i>	<i>ro</i>	<i>pupuo-hia=i</i>	<i>ita</i>	<i>mere=i</i>	<i>ata</i>
who	AG	strong-really=DET	then	person=DET	some

<i>mamui</i>	<i>orovie=i</i>	<i>ta</i>	<i>p-ohu'o.</i>
cloak	wear=NMLZ	in	REM-come.out

'The North Wind and the Sun were disputing which was the stronger, when a traveller came along wrapped in a warm cloak.'

<i>Niti</i>	<i>ro</i>	<i>vade</i>	<i>p-idabuai=do</i>	<i>ita</i>	<i>p-ao=ido</i>	<i>hotu</i>	<i>ro</i>
3DU	AG	word	PST-combine=DU	then	REM-say=DU	who	AG

<sup>6</sup> Morpheme glosses not found in the Leipzig Glossing Rules (Comrie et al. 2015) are as follows: DPST, distant past. Orthographic conventions are largely phonetic, though with <v> representing [β], <'> representing [ʔ], and <r> representing [ɾ].

*ovai-da mere=i mamui a'o eidai ri nu pupuo-hia*  
force-by person=DET cloak remove get for 3SG strong-really

*pupuo mere=i ka.*  
strong person=DET DECL

'They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other.'

*Potoi kavaia ro pupuo-hia ha p-ohududio, inai nu*  
north wind AG strong-really really REM-blow but 3SG

*pupuo-hia i-muhuduti ta mere=i nu mamui pupuo,*  
strong-really PL-blow with person=DET 3SG cloak strong

*pupuo ha p-ohidio pupuo-hia ap-ohidio ita potoi*  
strong really REM-hold strong-really MOD-hold then north

*kavaiai ro ha'ima-i ro ohiai ka ita nu,*  
wind AG tired-DET AG catch DECL then 3SG

*nuri ema'ai emehai ka.*  
therefore give leave DECL

'Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveller fold his cloak around him; and at last the North Wind gave up the attempt.'

*Ita hivio=i ohu=i ka pupuo-hia ha p-amai, ita*  
then sun=DET high=DET DECL strong-really really REM-dry then

*mere tutu-hia tato=i mere=i mamui a'o=i*  
person long-really without=DET person=DET cloak remove=NMLZ

*ita-i ka. Ita potoi kavaiai ro a'o=i ka*  
must-NMLZ DECL then north wind AG say=NMLZ DECL

*hivio=i nu pupuo ka.*  
sun=DET 3SG strong DECL

'Then the Sun shone out warmly, and immediately the traveller took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.'

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