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## Mojeño Trinitario

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## ILLUSTRATION OF IPA

Mojeño Trinitario

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Mojeño Trinitario (Glottocode trin1274) is a variety of Mojeño, an indigenous language of the Arawak family spoken in Lowland Bolivia. The Trinitario variety of Mojeño is spoken in the Isiboro-Secure Indigenous Territory, the Multiethnic Indigenous Territory, along the Mamoré river, in Trinidad and around the villages of San Lorenzo de Moxos and San Francisco de Moxos. It is spoken by around 3000 speakers (Crevels & Muysken 2009) and is endangered by the gradual loss of inter-generational transmission (Crevels 2002). Old Mojeño data (Marbán 1702) has been crucial in the identification of the Arawak family, when Gilij compared it to the Maipure language (Gilij 1780-1784). A basic introduction to Mojeño Trinitario is Rose (2015). Previous work on the said variety (Gill 1957, Ibáñez Noza et al. 2007, Ibáñez Noza et al. 2009), on a sister variety Mojeño Ignaciano (Olza Zubiri et al. 2002), and on the variety spoken in Jesuit missions in the 17th century (Marbán 1702) present very little information on phonetics. An official alphabet has been proposed in 1995 (Fabricano Noe et al. 2003)<sup>1</sup>. The historical development of the actual Mojeño Trinitario phonological system has been discussed in de Carvalho & Rose (2018). That paper shows that most of the phonological innovations of Trinitario result from a rather pervasive process of rhythmic syncope, which affected this variety only. Consequently, it

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<sup>1</sup> This proposal was the result of a workshop coordinated in 1995 by Colette Grinevald and Pilar Valenzuela and sponsored by the Bolivian Sub-secretaría de Asuntos Étnicos of the Education Ministry, and UNICEF.

displays a much more complex phonological inventory and syllable structure than Ignaciano and Old Mojeño. My knowledge of the language is based on fieldwork conducted since 2005 (11 months in total), resulting in a collection of 10 hours of recorded speech, plus various word lists. I have been working with 30 consultants, but most of the data linked to this paper have been recorded with Claudio Guaji Jare (from the area of San Lorenzo de Mojos, now living in Trinidad).<sup>2</sup> Most of the examples included in this paper have been recorded as a word list, with three repetitions of each item, so that the timing is comparable across examples. The data in the Prosody section have been recorded in a carrier sentence 'kope WORD *nhiŋ*"wi:ʔi / 'nke:ʔi *kope* WORD *njichvii'i* / *nkee'i* 'Yesterday WORD I said/told you'. Praat (Boersma 2001) has been used for acoustic analyses. Vowel plots have been produced with the phonR package of the R software (McCloy 2016, R Core Team 2019). The IPA transcription is phonemic in this paper, unless specified as phonetic by square brackets. Transcription in the official alphabet is given in italics. In the spectrograms, the transcription is phonetic.

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<sup>2</sup> Data from Natividad Tamo Noza, Jeronimo Tamo, Eulogio Ibañez Noza, Florencia Carire Tamo, Francisco Muiva Jou and Leonardo Jou Ichu are also offered at certain points.

## **Consonants**

Mojeño Trinitario shows an inventory of 28 consonants, with 16 simple consonants using six manners of articulation and six places of articulation, and 12 consonants with secondary articulations. Voicing is not contrastive. Some discussion follows on the phonetic realization of some of these consonants, mainly those showing some allophony or for which the phonetic realization is a strong argument for their phonological status. The other segments are realized as expected from their IPA transcription.

	bilabial		alveolar		palatal	velar		glottal	
plosive	p	p <sup>w</sup>	p <sup>j</sup>	t	c	k	k <sup>j</sup>	ʔ	ʔ <sup>j</sup>
nasal	m	m <sup>w</sup>	m <sup>j</sup>	n	ɲ				
fricative				s	s <sup>j</sup>	ç		h	h <sup>j</sup> h <sup>w</sup>
affricate				ts	ts <sup>j</sup>	tʃ			
tap				r	r <sup>j</sup>				
approximant	w		β <sup>j</sup>		j				

	IPA	Orthography	Gloss
p	'pohiʔi	<i>poji'i</i>	'guayava'
p <sup>w</sup>	'p <sup>w</sup> ehʃu	<i>puejchu</i>	'in order to'
p <sup>j</sup>	'p <sup>j</sup> opna	<i>piopna</i>	'go up!'
t	'toʔu	<i>to'u</i>	'its voice'
c	'core	<i>tyore</i>	'puma'
k	'koʃno	<i>kochno</i>	'motacú (tree sp.)'
k <sup>j</sup>	'k <sup>j</sup> owre	<i>kiowre</i>	'woodpecker'
ʔ	'ʔoʔe	<i>'o'e</i>	'rainbow'
ʔ <sup>j</sup>	'ʔ <sup>j</sup> oru	<i>'yoru</i>	'fog'
m	'moposi	<i>moposi</i>	'bee'
m <sup>w</sup>	'm <sup>w</sup> isre <sup>3</sup>	<i>muisre</i>	'cap'

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<sup>3</sup> /m<sup>w</sup>/ in this word can be contrasted with /m/ in the 'mirore *mirore* 'mask'.

m <sup>j</sup>	sim <sup>j</sup> om <sup>j</sup> riko	<i>simiomriko</i>	‘she sent it’
n	no	<i>no</i>	‘the (human plural)’
ɲ	‘noŋko	<i>ñocho</i>	‘his grand-father’
s	so <sup>j</sup> seçi	<i>sosegi</i>	‘scorpion’
s <sup>j</sup>	nko <sup>j</sup> sihwi [βi]	<i>nkosiojvi</i>	‘I make you enter’
ç <sup>j</sup>	‘çiore	<i>giore</i>	‘anaconda’
h	‘hosre	<i>josre</i>	‘hat’
h <sup>w</sup>	‘h <sup>w</sup> iti	<i>juiti</i>	‘now’
h <sup>j</sup>	‘kh <sup>j</sup> ure	<i>kjiure</i>	‘crocodile’
ts	‘kotsso	<i>kotso</i>	‘rat’
ts <sup>j</sup>	‘tsiope	<i>tsiope</i>	‘fish sp.’
tʃ	‘tʃora	<i>chora</i>	‘parrot’
r	‘ropo	<i>ropo</i>	‘brocket’
r <sup>j</sup>	ma <sup>j</sup> riono	<i>mariono</i>	‘stones’
w	‘womʔi	<i>wom'i</i>	‘pampa’
β <sup>j</sup>	‘βioçjenu	<i>viogenu</i>	‘our Lord/chief’
j	‘jona	<i>yona</i>	‘surubi (fish sp.)’

### The glottal stop /ʔ/

Ladefoged and Maddieson (1996:75) give the following acoustic description of glottal stops : "In the great majority of languages we have heard, glottal stops are apt to fall short of complete closure, especially in intervocalic positions. In place of a true stop, a very compressed form of creaky voice or some less extreme form of stiff phonation may be

superimposed on the vocalic stream." In Mojeño Trinitario, the glottal stop can be realized with different degrees of closure of the vocal folds. If there is a full closure of the vocal folds, it is simply expressed by a short pause characterized by the absence of voicing between two segments. This is observable in the spectrogram of 'pioçʔe *piog'e* 'your body' (Figure 1). If the closure of the vocal folds is less complete, they vibrate and there is some voicing during the pause, as in 'nwo:ʔo *nwoo'o* 'I want' (Figure 2). There may even be no pause and then the vocal folds continue to vibrate during the adjacent vowels, leading to creakiness, as in 'heʔe *je'e* VALID (Figure 3). Creakiness can also be observed at the onset of the vowel *e* after the glottal stop in Figure 1. In word-initial position before a consonant, the glottal stop is not always as visible in spectrograms as in that of 'ʔhiro *jiro* 'man' (Figure 4). It is nevertheless generally audible with some practice, giving the impression that the word begins with "more strength" according to some speakers, or with a geminate. A laryngograph could be used in a future fieldtrip to confirm the full closure of the vocal folds in this context. The presence of the glottal stop in word-initial position before a consonant is contrastive, as in 'ʔhiro *jiro* 'man' to be contrasted with 'hiro *jiro* 'fish sp.' (Figure 5). It substitutes for a word-initial vowel that has (synchronically or diachronically) syncopated in words with an iambic parse, as in ʔmot'ne-ko *'motneko* 'work (non-possessed)', derived from the root emotone 'work (possessed)', or 'ʔresia *'resia* 'church' a loan from Spanish *iglesia*. Finally, the variable presence or absence of the glottal stop in word-initial position before a vowel makes



it non-phonemic in that position. In all other positions, the glottal stop is phonemic.

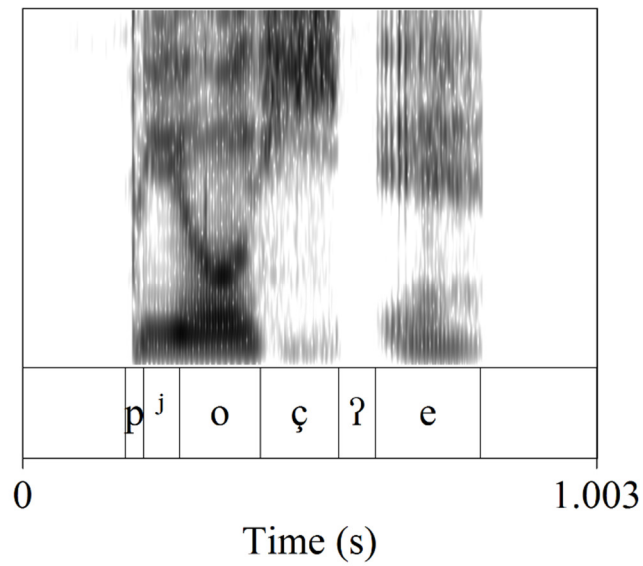


Figure 1: Spectrogram of 'pioç?e 'your body'

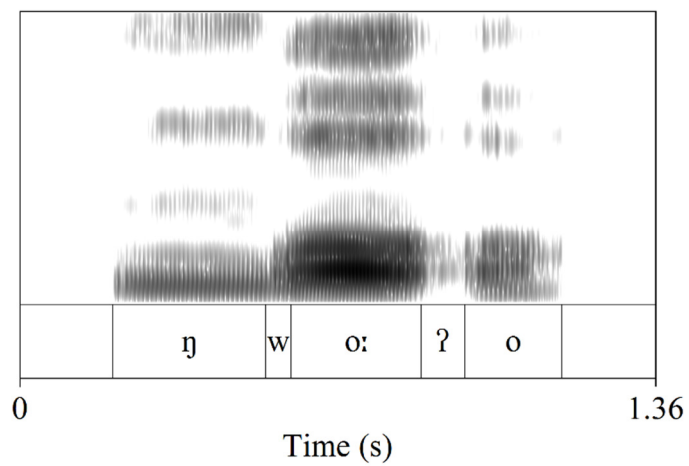


Figure 2: Spectrogram of 'nwo:ʔo 'I want'

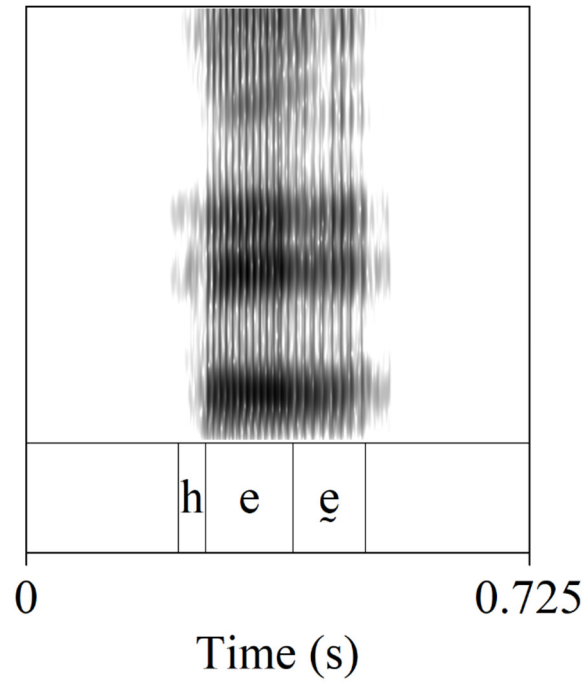


Figure 3: Spectrogram of 'he?e 'VALID'

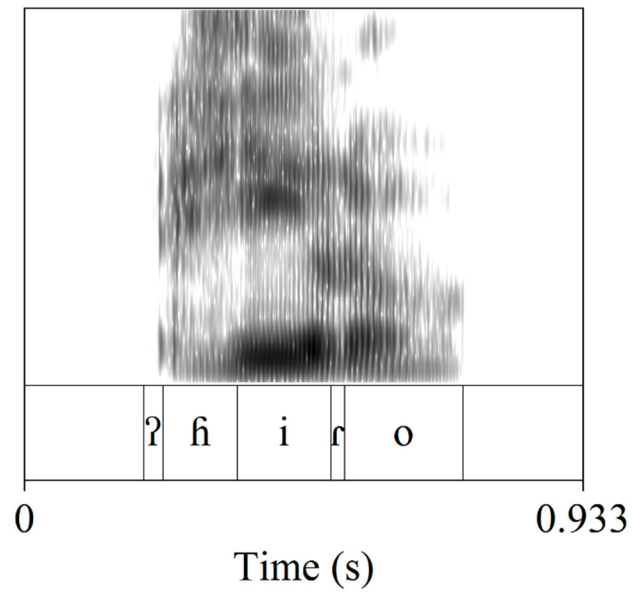


Figure 4: Spectrogram of 'ʔhiro' 'man'

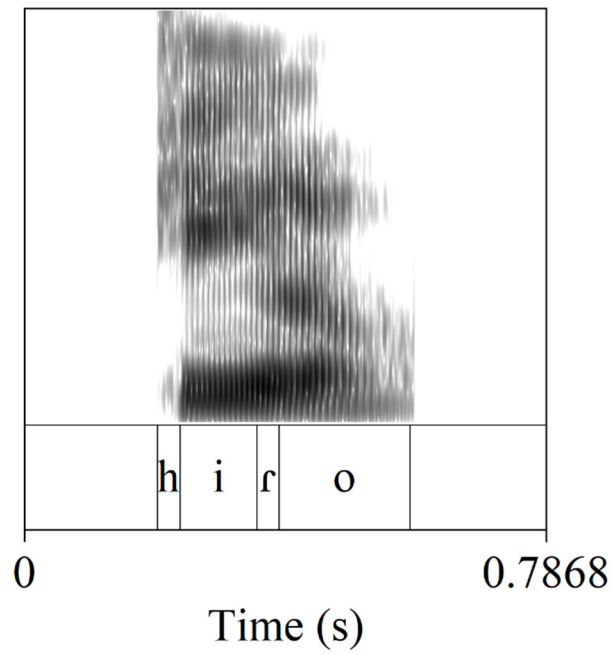


Figure 5: Spectrogram of 'hiro 'fish sp.'

The alveolar nasal /n/

The alveolar nasal consonant assimilates its place of articulation to that of a following (oral or nasal) obstruent. In many cases, there are morphological alternations that provide evidence for the underlying place of articulation of this nasal (as in the first example),<sup>4</sup> but there are also morpheme-internal cases without such evidence (as in the other examples).

njonpo ['nɲo <b>mpo</b> ]	<i>nyompo</i>	'I went' (1SG-go=PFV)
	<i>n-yon(o)=po</i>	
phonçi ['pho <b>ŋ</b> çi]	<i>pjongi</i>	'DEM.NH.SG.PAST.EV'
tinko ['ti <b>ŋ</b> ko]	<i>tinko</i>	'it is full'

The palatal nasal /ɲ/

The palatal nasal is distinct from an alveolar nasal followed by a palatal approximant. For example, 'ɲompo ñompo 'he carried' and 'njonpo nyompo 'I went' contrast. In the first word (shown in Figure 6), /ɲ/ in

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<sup>4</sup> This assimilation is triggered across morpheme boundaries by bilabial and palatal consonants, but not systematically by velar consonants.

*n*-ompo is morphologically in a prefix slot where it alternates with other prefixes (as in *n*-ompo ‘I carried’), showing that the root for ‘carry’ is *omo*, to which the perfective clitic =po is added in ‘*n*ompo. In the second word (shown in Figure 7), /*n*/ in *n*-jonpo alternates with other prefixes, showing that the root for ‘go’ is *jono* to which the perfective clitic is added in *n*-jonpo with vowel syncope. In the second word, the root-initial glide is realized as a palatal nasal following the alveolar nasal prefix.

Acoustic analysis shows that the duration of the palatal nasal corresponding to a phonemic /*n*/, as in Figure 6, is on average longer (0.122 sec) than that of the palatal nasal corresponding to a phonemic /*j*/ (0.078 sec), as in Figure 7.<sup>5</sup> It is also interesting to note that the prefixal alveolar nasal preceding the palatal in words like the one in Figure 7 is longer (0.172 sec) than the prefixal palatal nasal (0.122 sec) in words like that in Figure 6. The length of this initial /*n*/ could be due to the syncope of the vowel that was etymologically present (\**nu*-*jono*=po).

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<sup>5</sup> 12 occurrences of /*n*/ and 21 of /*nj*/ in similar phonological environments have been measured.

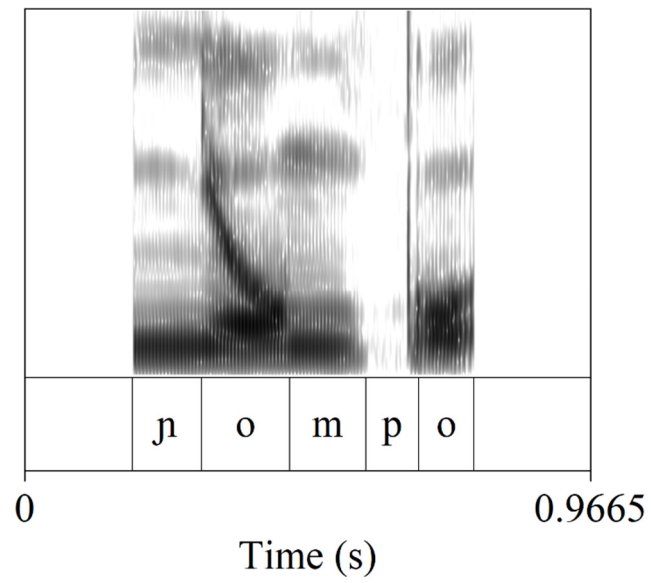


Figure 6: Spectrogram of 'jompo 'he carried'

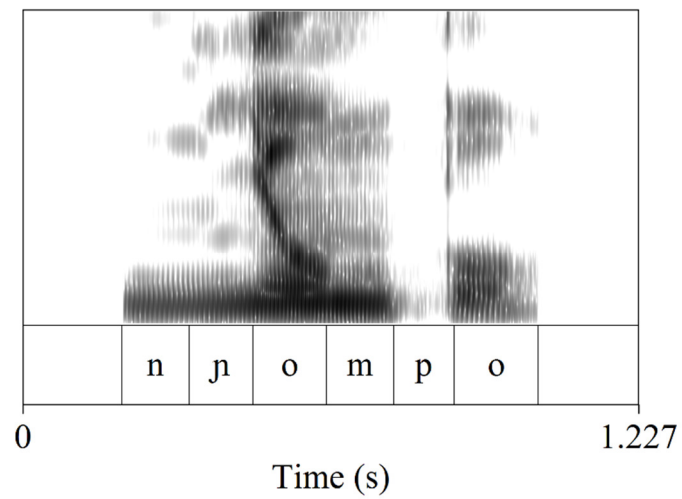


Figure 7: Spectrogram of 'njompo 'I went'

The palatal fricative /ç/

The phoneme /ç/ is always realized as a palatal fricative [ç] before /i/ and consonants, but as either [ç] or [çʲ] before vowels other than /i/, with inter-speaker and intra-speaker free variation.

'çihoçi [ 'çifioçi]	<i>gijogi</i>	'tree sp.'
'koçure [ 'koçʲure]	<i>kogiure</i>	'lake'
i: 'mʷiça [i: 'mʷiça ~ i: 'mʷiçʲa]	<i>iimuigia</i>	'You all dance!'

The glottal fricative /h/

The glottal fricative /h/ is often realized voiced [ɦ] between vowels (and occasionally between a vowel and a consonant), as in ʔnu: 'hinæ̃hi 'nuuhinaehi 'immediately' realized [ʔnu:fiɛɦi]. Other variants involve a slight palatal, velar or pharyngeal friction.

The alveolar affricate /ts/

The affricate /ts/ contrasts with the sequence t+s, even though both start as an alveolar stop and end with an alveolar fricative. The observation of Figures 8 and 9, as well as the duration measures in Figure 11,<sup>6</sup> show that the sequence t+s is much longer than the affricate /ts/, and that this additional length is due to the duration of the fricative part, as in fact

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<sup>6</sup> Figure 11 is computed from duration measures on 52 words from six speakers with either /ts/ or t+s in comparable phonological environments.

the stop part is shorter in the bi-phonemic sequence.<sup>7</sup> As a result, the ratio of the duration of the fricative part with respect to the stop part is 81% in the phonemic affricate, while it is 212% in t+s sequences. Note that the total length of the affricate in the coda position in Figure 10 is very comparable to the stop coda in Figure 8 (0.168 sec vs. 0.148 sec).<sup>8</sup>

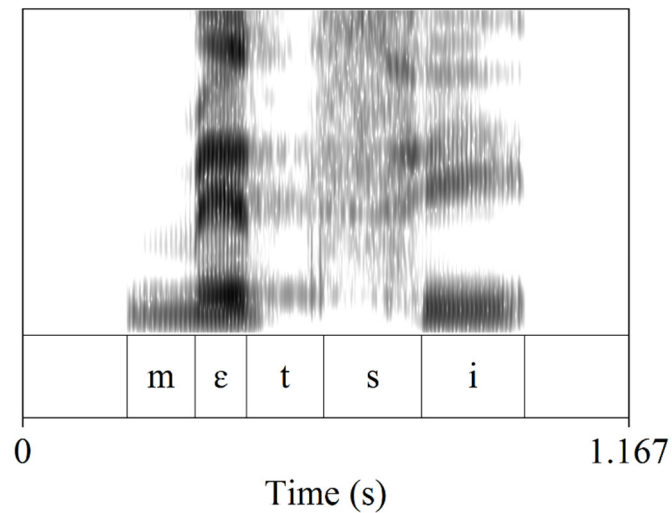


Figure 8: Spectrogram of 'met.si' 'pot'

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<sup>7</sup> The duration of the fricative in consonant sequences cannot be attributed to the fact that it is the single segment of a simple onset, as it is also longer in words where /s/ is part of a word-initial complex onset t+s.

<sup>8</sup> Tests for syllabification are described in footnote 17.



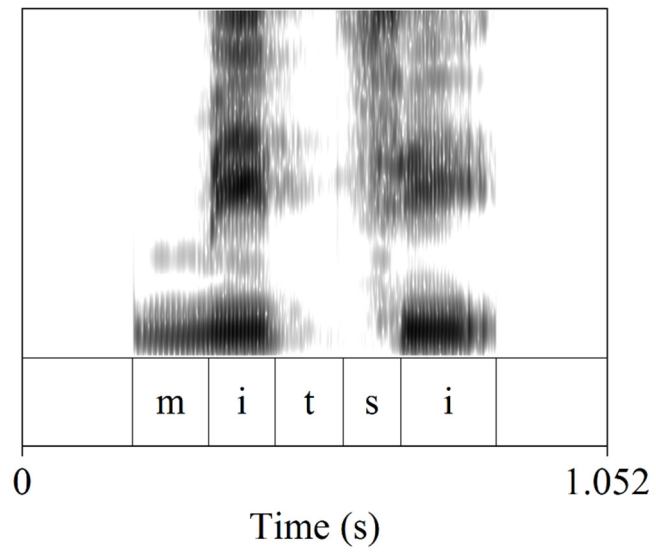


Figure 9: Spectrogram of 'mi.tsi' 'cat'

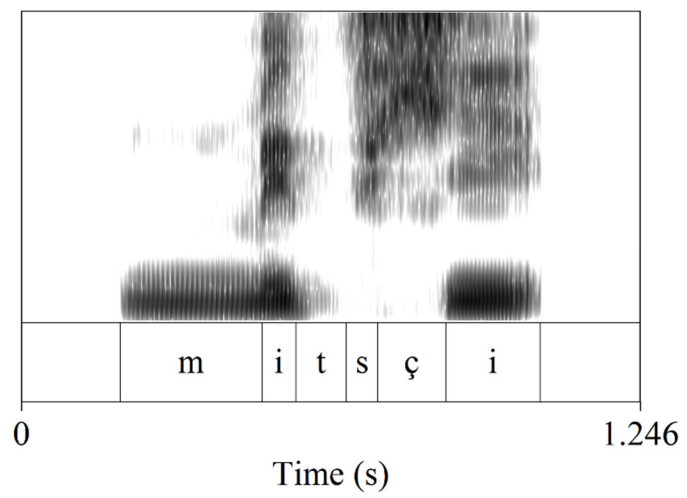


Figure 10: Spectrogram of 'mitsçi' 'backbone'

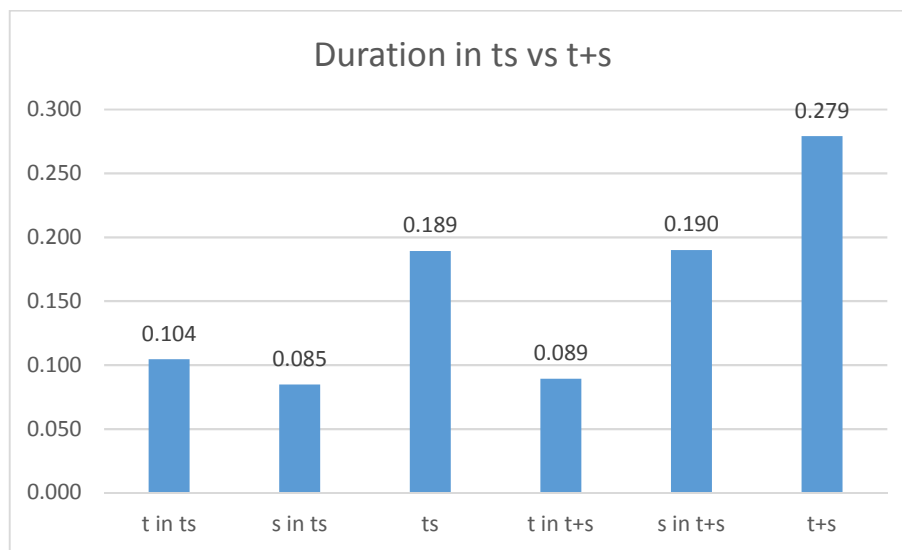


Figure 11: Duration measures for /ts/ vs. t+s in seconds

#### The rhotic /r/

The phoneme /r/ displays an array of slightly differing realizations in variation, with some lateral and retroflex articulations. It often triggers the presence of a schwa-like transitional vocoid [ə] immediately preceding it when following a consonant, as in *trappes'rawo* *trappesrawo* 'shining', that is realized [tʰrap:esə'rawo].

#### The labio-velar approximant /w/

The phoneme /w/ is realized by two major allophones in complementary distribution: the bilabial fricative [β] is found (in free variation with the rarer labio-dental fricative [v]) before a front vowel, and the labio-velar approximant [w] before other vowels or consonants. Word-initially before a consonant, /w/ can also be realized with a short

vocalic sound [wɔ], or as a single non-syllabic vocalic realization [ɹ]. When preceding the consonant /j/, it merges with it in a labio-palatal glide [ɟ].

wɛʃhiri'çapo [βɛʃhiri'çapo]	<i>vechjirigiapo</i>	'we spoke.IRR'
'wija ['βija ~ 'vija]	<i>viya</i>	'our father; the Lord'
'wono ['wono]	<i>wono</i>	'Southern wind'
'wajosi ['wajosi]	<i>wajosi</i>	'horsefly'
'wwupere ['ɹwupere]	<i>vwupere</i>	'our hand'
'npowçi ['ɲpowçi]	<i>mpougi</i>	'my arm'
'wraju ['ɹraju]	<i>wrayu</i>	'chicken'
tkow'jore [tko'ɟore]	<i>tkowyore</i>	'(s)he/it is going to bathe'

There are two types of exceptions to this complementary distribution. First, the allomorph /wi/ of the negative auxiliary /wo/ does not comply with the distribution stated above.<sup>9</sup> As a consequence, an opposition can be found between [w] and [β] in the following minimal pair 'wiʃʔo *wich'o* 'we call him/her/it' vs. 'wiʃʔo *wich'o* 'not yet' realized respectively [βiʃʔo ~ viʃʔo] and [wiʃʔo]. Second, the labio-velar allophone of /w/ is also found before a front vowel, when this sequence results from the syncope of a non-front vowel from the sequence of w + non-front

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<sup>9</sup> /wi/ is found when the negative auxiliary is followed by some TAME (Tense Aspect Mood Evidentiality) clitics.

vowel + front vowel. The labiovelarized /w/ is systematically realized as [w], even though it now precedes a front vowel, as in *nati'wina* *natiwina* ‘their being first’ (segmentable in *na-tiwo-ina* 3PL-first-IRR), realized [natiwina].

#### Consonants with secondary articulation

The secondary articulations most often result from palatalization or labio-velarization of the preceding consonant in the process of resolution of a hiatus. Because the presence of these secondary articulations is not always predictable in synchrony, the palatalized and labio-velarized consonants are nevertheless considered as phonemes here. Figure 12 (repeated from Figure 1) and Figure 13 illustrate the phonetic contrast between a consonant with a secondary palatal articulation (nine segments in the consonant inventory) and the same consonant followed by a (consonantal) palatal approximant. The words 'piɔçʔe *piog'e* ‘your body’ and 'pjoçi *pyogi* ‘your penis’ are made up of the prefix *pi-* ‘2SG’ (with its /i/ syncope as will be explained in the prosody section) and the roots *-oçʔe* ‘body’ and *-joçi* ‘penis’, respectively. Both words show a steady palatal element after the initial stop, followed by a glide transition, even though both words are

syllabified in two syllables only: 'piɔç.ʔe and 'pjo.çi.<sup>10</sup> Measures show that on average, the palatal steady state of the secondary articulation (0.068 sec) is somewhat shorter than that of the phonemic /j/ (0.078 sec).<sup>11</sup> However, since the second word alternates in a paradigm with forms like ma'joçi *mayogi* 'his penis', it is clear that phonologically the palatal segment is a consonant in a complex onset in 'pjoçi *pyogi* 'your penis'. It would be interesting to conduct perception tests on that contrast.

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<sup>10</sup> In both words, the vocalic sound could be (at least partly) a phonetic residue of the syncopated vowel of the prefix pi- 'your'.

<sup>11</sup> 21 occurrences of /pi/ and 12 of /pj/ in similar phonological environments have been measured.

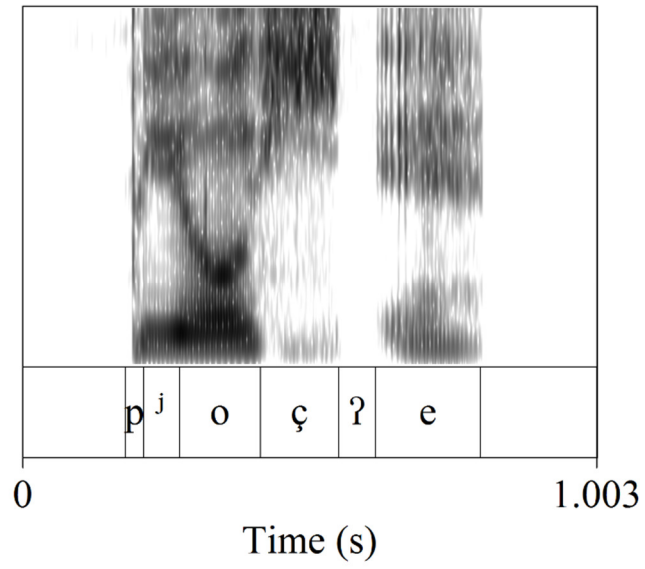


Figure 12: Spectrogram of 'pj o ç ? e' 'your body'

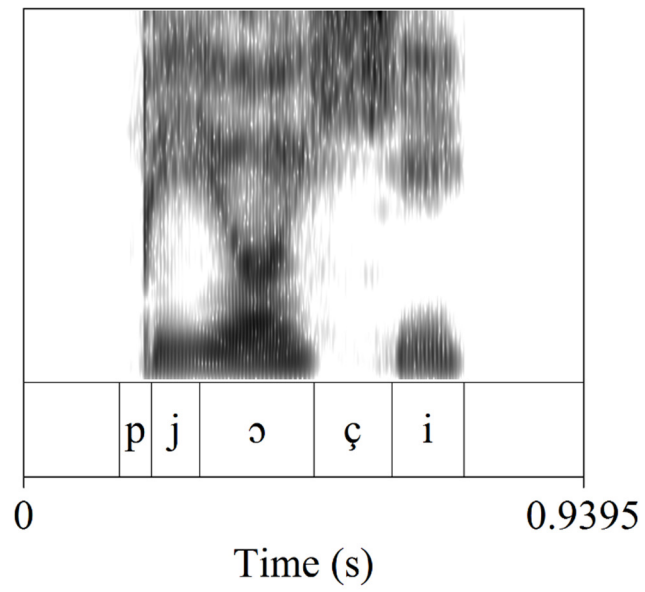
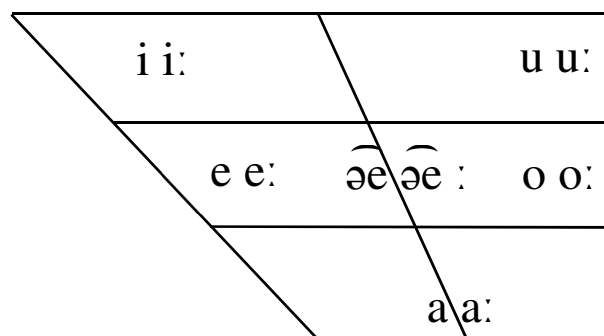


Figure 13: Spectrogram of 'pjoçi 'your penis'

### Vowels

The vowel inventory consists of 12 vowels, with six vowel qualities and a length contrast.<sup>12</sup>



i	'iko	<i>iko</i>	'bean'
e	'eti	<i>eti</i>	'you all'
a	'aʃu	<i>achu</i>	'hammock'
o	'oni	<i>oni</i>	'there'
u	'uʃu	<i>uchu</i>	'capybara'
æ̃	'æ̃eko	<i>aeko</i>	'river dolphin'

<sup>12</sup> Note that the symbol /a/ is used here for a low central vowel.

i:	i: 'm <sup>w</sup> iça	<i>iimuigia</i>	'You all dance!'
e:	e: 'mana	<i>eemana</i>	'nun'
a:	a: 'kare	<i>aakare</i>	'mayor'
o:	'o:jo	<i>ooyo</i>	'where'
u:	'u:pe	<i>uupe</i>	'frog'
æ̃:	tæ̃: 'resi	<i>tæeresi</i>	'glass'

### Phonetic realizations

Figure 14 plots the five simple vowels of two speakers.<sup>13</sup> The distribution of the vowels is close to the cardinal vowels.

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<sup>13</sup> Each speaker repeated 20 words three times each, i.e. four words per vowel. In order to neutralize potential divergent coarticulatory effects, each vowel has been recorded in four similar environments: all unstressed final syllables with the preceding consonant being /p/, /ʔ/, /s/ or /t/. The default is `ellipse.conf=0.6827`, which is a roughly 68% confidence level corresponding to  $\pm 1$  standard deviation of the normal density contour estimated from the data.



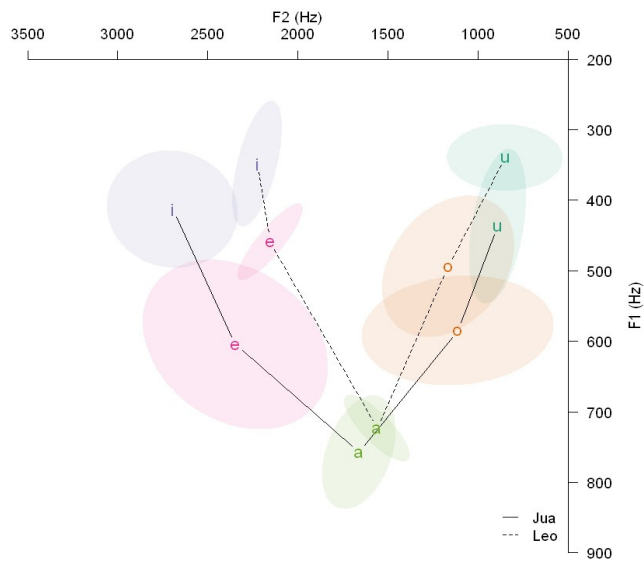


Figure 14: Mojeño Trinitario simple vowels

Figure 15 plots the long vowels and the complex central vowel of two speakers.<sup>14</sup> Again, the distribution of the long vowels is canonical and corresponds to that of their short counterparts. Long back vowels show a trajectory tending towards a more posterior and closed articulation. The complex central vowel shows a trajectory starting as a central vowel and evolving towards a more anterior and closed articulation.

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<sup>14</sup> Each speaker repeated about 20 words three times each, i.e. four words for most vowels (three for the complex central vowel and only one for its long counterpart). In order to neutralize potential divergent coarticulatory effects, each vowel has been recorded in four similar environments : all in the word initial syllable followed by a consonant, and preceded by either /t/, /n/, /s/ or a pause.

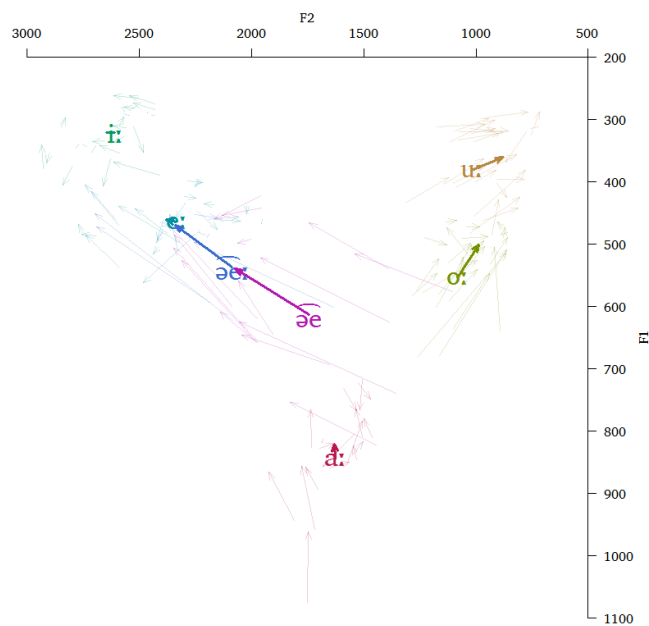


Figure 15: Mojeño Trinitario long vowels and the central vowel

Additional information is that the short mid vowels /e/ and /o/ have two phonetic realizations, mid-high and mid-low, in free variation, but with a preference for the mid-high realization in open syllables. The realization [y] has also sometimes been attested for /u/.

The segment  $\widehat{əe}$  is generally realized as a complex sound with canonically a mid-central vocalic component followed by a mid-front vocalic component [əe] in careful speech, with both elements showing a lot of variation. In natural speech, it is regularly monophthongized, and is then usually pronounced either as a mid-central to low-high central vowel (between ə and i), or as a front vowel [ɛ ~ e]. It is comparable in length to short simple vowels. The diphthong also shows a (rare) long counterpart  $\widehat{əe}$ .

təh̃are [ˈtəh̃are]	<i>tæjare</i>	ta-ihare 3NH-name	‘its name’
tətə̃eni [təˈtə̃ni]	<i>tataeni</i>	tata-ini 1SG.father-PAST	‘my late father’
kə̃etʃa [ˈkə̃tʃa]	<i>kaecha</i>		‘shovel’
kə̃ere [ˈkə̃re]	<i>kaere</i>		‘sweet potato’
eskə̃era [esˈkə̃ra]	<i>eskaera</i>	< Sp. <i>escuela</i>	‘school’

A slight phonetic nasalization of vowels has been noticed when adjacent to, and especially when immediately following, a nasal consonant, as well as in word final position in the word list and at the end of sentences in texts, as is the case with an'coho *antyojo* ‘glasses’ (from Spanish *anteojos*) realized [aŋˈcoh̃õ]. Spontaneous nasalization of vowels and consonants as a boundary marker for syllables, words, or clauses is found scattered across Amazonia (Rodrigues 2003, Aikhenvald 2012).

### Length

Long vowels contrast with short vowels. Duration measurements show that /o:/ is more than twice as long as /o/ in the minimal pair exemplified below (0.363 sec vs 0.162 sec).<sup>15</sup>

'nope	<i>nope</i>	'my shinbone'
'no:pe	<i>noope</i>	'paddle'
'ntʃehi	<i>cheji</i>	'my niece'
'ntʃe:hi	<i>cheeji</i>	'my vulva'
'nhuko	<i>njuko</i>	'I smell'
'nhu:ko	<i>njuuko</i>	'I grow up'

### Distribution

Generally, all vowels can appear in all positions in the word, with two exceptions. First, the segment  $\widehat{ae}$  is essentially found word-internally.<sup>16</sup> There is only one word-final occurrence ( $n\widehat{ae}$  *nae*, the reduced form of the preposition *jeʔe ye'e* with a 3<sup>rd</sup> person plural prefix *na-* *na-*, as in  $n\widehat{ae}$  *no nae no* 'with the'). Second, long vowels are generally not found word-finally, except in very few items like the reduced realization [ta:] of *taha taja* 'INTER.NH', as in *ta: pem'tone taa pemtone* 'what is your

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<sup>15</sup> Vowel duration was averaged from 15 realizations of the *nope/no:pe* minimal pair, elicited from seven different speakers.

<sup>16</sup> This is due to the fact that, in most cases, this vowel results from morpheme concatenation.

work?'. All vowels can be found in any syllable type, except long vowels, which are not found in closed syllables.

### **Prosody**

The Mojeño Trinitario phonological/prosodic word is defined as the domain of stress, rhythmic syncope and phonotactics.

### **Syllable<sup>17</sup>**

The syllable structure observed in Mojeño Trinitario speech is the following: (C(C))V(:/C). It consists of an optional onset (that can be complex with maximally two consonants), and a rhyme with an obligatory vocalic nucleus. The rhyme can be either light or heavy (i.e. with a long vowel, or with a short vowel followed by a coda). Note that long vowels never combine with a coda.

Complex onsets and onsetless syllables are found word-initially only. Word-internal consonant sequences are therefore always heterosyllabic and show a great diversity (only affricate and tap-initial sequences are not found). Consonant sequences can consist of two identical consonants; this is attested with /p, t, k, m, n, s/. There are no vowel sequences within a word. Heavy nuclei (long vowels or short vowel +

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<sup>17</sup> My basis for identifying the syllable is the pause-insertion task. Speakers inserted breaks in their oral production of words when asked to either explicitly break the word into small chunks or to repeat it slowly and distinctly.

coda) are usually not found word-finally. None of the syllable types are found exclusively at morpheme boundaries.

#### Stress and rhythmic syncope

Primary stress falls on the rightmost foot.<sup>18</sup> The default parse is an iambic rhythmic pattern that applies to the underlying form of words, which is made up of open syllables only. Words are parsed from left to right by binary iambs, and the last syllable is extrametrical. The language shows another (minor) metrical parse, found exclusively with disyllabic roots (and a handful of exceptional trisyllabic roots), and only when they are bare or carrying post-root morphology only (disyllabic roots with prefixes fall under the default iambic parse): this trochaic parse applies also from left to right, and the last syllable is not extrametrical. The stress patterns and rhythmic syncope are described in greater details in Rose (2019).

There is considerable variability on an inter- and intraspeaker basis in the correlates of stress. Preliminary results indicate that the most robust acoustic correlate of word-level stress is intensity, while duration and F0 are less reliable diagnostics for stress (Gordon & Rose 2019). A major manifestation of the stress patterns is a pervasive process of

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<sup>18</sup> Rhythmic secondary stresses (not transcribed in this paper, except for some salient ones in the text) fall on other feet.

rhythmic syncope, described in detail in Rose (2019). Vowels in foot-internal non-head position, as well as unfooted moras, are targets for syncope. <sup>19</sup> The word-final syllable, extrametrical in the iambic parse, is not eligible as a target for syncope. Parenthesis indicate the foot parse in the form, with syncope vowels underlined (generally reconstructed from morphological alternations).

iambic				
'sma.tu	(s <u>V</u> 'ma)tu	<i>smatu</i>		'spider sp.'
'nhu.ma	(n <u>u</u> -'hu)ma	<i>njuma</i>	1SG-illness	'my illness'
'tkoh.ma	(ti-'ko)-huma	<i>tkojma</i>	3-VZ-illness	's/he is sick'
wo	wo (ti-ku-)(ko-	<i>wo</i>	NEG 3-	'may
tkuk.'hu.ma	'hu)ma	<i>tkukjuma</i>	NEG.IRR-VZ-illness	'you not be sick'

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<sup>19</sup> About half of the vowels that are targets for syncope are actually deleted, while others are regularly maintained, see Rose (2019). Vowel quality plays a statistical role in the (under)application of syncope. In the following examples (the first two with an iambic parse, the last two with a trochaic parse), vowels that occur in positions eligible for syncope but fail to undergo syncope are in bold.

ta'nosi	( <b>ta</b> -'no)si	<i>tanosi</i>	3NH-stay	'it stays'
twe.no.'poj.re	(t <u>i</u> -we)( <b>no</b> 'po)=jore	<i>tvenopoyre</i>	3-fall=FUT	'(s)he/it will fall'
'e.to.na	('eto)-na	<i>étona</i>	one-CLF	'one'
pe.ti.'çi.ra	(peti)(-'çira)	<i>petigira</i>	house-DIM	'doll house'

## trochaic

'ep.re	('ep <u>V</u> )re	<i>e<pre< i=""></pre<></i>		'creeper ,
pak. 'çi.ra	(paku)(- 'çira)	<i>pakgira</i>	dog-DIM	'small dog'
et.naj. 'rep.k a	(eto)(-na=j <u>o</u> )( 're= <u>pu</u> )ka	<i>etnayrepka</i>	one- CLF=FUT=S PEC	'it could be that it will be one'

## Apocope

More rarely, the final vowel of words is deleted in rapid speech, either within a phonological phrase (and often in short, frequent words), or at the end of a phrase, as in the title of the text below where the final vowel of 'satʃe *sache* 'sun' is not realized.

**Text**

The Mojeño Trinitario version of the North Wind and the Sun is read by Claudio Guaji Jare. It is his own translation of the Spanish version of the tale. This section offers a phonetic transcription, a phonological one, and the transcription in the official alphabet (with some adaptations) aligned with a literal English translation.



## Phonetic transcription

to tho:'βekə 'khəʒ 'ʔenē to 'səf. to tho:'βekə 'khoʔə 'enē to 'səfə  
 tɛfʰirikwɔn'riʔihi tɛ to ,nəɦpu'keɦi ʔtumepon'riɦi, te tetaβik'pop'riʔi  
 'ʔetna mā,pwi:'riɾu cajkukwop'riʔi t:e phə 'ʔʃəpē ,mwẽp'koʃfepo.  
 tɛfoko'kompo tɛ to ,nəɦpu'keɦi na'tiwina nēet'pi'çehi to  
 ,tβehamwir'jokapo to ,mwẽp'koʃfepo, 'ʔeto ,mraki'nēhi to:  
 ʔtume'wo:ʔi. to tho:'βekə 'khəʒ ,mʳa'kehi to toʃfus'ra:ʔi  
 ,tɛk'tikwo'pwiçi to tahiʃ'ri, ʔeto'tsero to toʃfys... toʃfuk'po:i,  
 tēemjajku:nē'ʃehi to ,mwẽp'koʃfepo 'ema mā,pwi:'riɾu. ta'kepsə to  
 tho:'βekə 'khəʒ trassak'pwiçi to toʃfus'ra:i tēnāɦik'po:i to  
 tawori'ra:i. ta'kepsɪ to tʳap:es'rawo tamikufʳa to 'səfi, tɛ to  
 ta,ɦa:res'rawo ,ʔnu:ɦi'neɦi to maβɛʔ'ri tɔ ,mwẽp'koʃfepo 'ʔema  
 mā,pwi:'riɾu, 'thiʃo 'ʔeto tho:'βekə 'khoʔə, 'təe'ʃopo to ,mʳa'kehi to  
 ta,tume'wo:ʔi to 'səfi. 'heɛ, titə'wopo 'phoʔa ,ʔʃəsjə'ropi, ,ɾysru'paja.

## Phonological transcription

to tho:'weko 'khoʔə 'ene to 'səfə. to tho:'weko 'khoʔə 'ene to 'səfə  
 tɛfʰirikwon'riʔihi teʔ to nahpu'kəhi ʔtumepon'riʔihi, te  
 tetawikpop'riʔi 'etna mapui:'riɾu cajkukwop'riʔi te phə 'ʔʃəpə  
 mwẽp'koʃfepo. tɛfoko'kompo teʔ to nahpu'kəhi na'tiwina nēet'pi'çehi  
 to tweham'wi'riokapo to mwẽp'koʃfepo, 'eto mraki'nēhi to ʔtume'wo:ʔi.  
 to tho:'weko 'khoʔə mra'kəhi to... toʃfus'ra:ʔi tektikwo'pwihi to  
 tahiʃ'ri, eto'tsero to toʃfus... toʃfuk'po:ʔi, tēemjajkune'ʃehi to  
 mwẽpkoʃfepo 'ema map'wi:'riɾu. ta'keptse to tho:'weko 'khoʔə  
 trassak'pwihi to toʃfus'ra:ʔi tēnahik'po:ʔi to tawori'ra:ʔi. ta'keptse to

trappes'rawo tamikutfra to 'saŋe, teʔ to taha:res'rawo ʔnu:hi'nāehi to maweʔ'riʔi to m<sup>w</sup>epko'ʃepo 'ema map<sup>w</sup>i:'riru, 'thiʃo 'eto tho:'weko 'khoʔo, 'tāeʃopo to mra'kāehi to tatume'wo:ʔi to 'saŋe. 'Heʔe, tito'wopo 'phoka ʔʃos'o'ropi, rusru'paja.

Orthographic, aligned with English translation

To tjooveko kjo'o ene to sache

'The North wind and the sun'

To tjooveko kjo'o ene to sache techjirikwonri'iji te' to najpukeji 'tumeponri'iji, te tetavikpopri'i etna mapuiiriru tyaykukwopri'i te pjo 'chope muepkochepe.

'People tell that the North wind and the sun were discussing who was stronger, while a traveller was passing by, wrapped up in a large cape.'

Techokokompo te' to najpukaeji natiwina naetpigieji to tvejamuiiriokapo to muepkochepe, eto mrakineji to 'tumewoo'i.

'They agreed that the one would be the first to reach his taking off his cape would be might (in strength).'

To tjooveko kjo'o mrakaeji to... tochusraa'i tektikwopuiji to tajichri'i, etotsero to tochus... tochukpoo'i, taemiaykunecheji to muepkochepe ema mapuiiriru.

'The North wind got strong in his blowing, it blew on purpose, but as it was blowing, it made the traveler wrap himself even more in its cape.'

Takeptse to tjooveko kjo'o trassakpuiji to tochusraa'i taenajikpoo'i to taworiraa'i.

‘In the end, the North wind calmed its blowing, it abandoned its decision.’

Takeptse to trappesrawo tamikuchra to sache, te' to tajaaresrawo 'nuujinaeji to mave'ri'i to muepkochepeo ema mapuiiriru, tjicho eto tjooveko kjo'o, taechopo to mrakaeji to tatumewoo'i to sache.

‘Then the shining, the lighting of the sun. Immediately after this light started, the traveller took off his cape, for that reason the North wind knew the strength of the power of the sun.’

je'e, titowopo pjoka 'chosioropi, rusrupaya

‘All right, the old story is over, thank you.’

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