

2. Phonemic inventory and syllable structure. Madija has the consonant inventory shown in (1). There are three series of oral noncontinuant—voiceless unaspirated, voiceless aspirated, and voiced. The three series include bilabial stops, dental stops, dental affricates, and velar stops. There is no voiced velar stop. There are two nasal stops, bilabial and dental. The only fricative is the laryngeal fricative. The only liquid varies between a lateral and nonlateral flap, as described below.²

(1) <i>p</i>	<i>t</i>	<i>ʈ</i>	<i>k</i>
<i>p^h</i>	<i>t^h</i>	<i>ʈ^h</i>	<i>k^h</i>
<i>b</i>	<i>d</i>	<i>ʒ</i>	
			<i>h</i>
<i>m</i>	<i>n</i>		
	<i>r</i>		

There are four vowels in Madija: *i*, *e*, *a*, and *o*. The vowel *e* is generally an open mid front vowel, and *o* sometimes fluctuates to [u]. The vowel *o* may be linked to an onset position in the syllable, where we transcribe it as *w*. In this position it is pronounced as [w] if it precedes a back vowel (never *o*), as in *awa* [awa] ‘tree’, and [β] if it precedes a front vowel, as in *awi* [aβi] ‘tapir’.

The examples in (2)–(3) establish the contrasts claimed above.

(2) <i>p</i>	<i>apa</i> ‘eat’	<i>poni</i> ‘she, her’
<i>p^h</i>	<i>wap^ha</i> ‘monkey (sp.)’	<i>p^horo</i> ‘swat’
<i>b</i>	<i>aba</i> ‘fish’	<i>bobo</i> ‘owl (sp.)’
<i>t</i>	<i>ehete</i> ‘fiesta’	<i>tatarade</i> ‘mouse (sp.)’
<i>t^h</i>	<i>et^he</i> ‘dog’	<i>t^hat^ha</i> ‘plant (sp.)’
<i>d</i>	<i>ede</i> ‘tree trunk’	<i>dahoni</i> ‘canoe’
<i>ʈ</i>	<i>ʈiʈipe</i> ‘gnat’	<i>ʈoda</i> ‘flea’
<i>ʈ^h</i>	<i>ʈ^hiʈ^hite</i> ‘arrow’	<i>ʈ^homi</i> ‘worm, parasites’
<i>ʒ</i>	<i>hizi</i> ‘honey, bee’	<i>zipa</i> ‘clay pot’
<i>k</i>	<i>akomi</i> ‘piranha’	<i>karo</i> ‘rubber’
<i>k^h</i>	<i>ak^hara</i> ‘full’	<i>k^hara</i> ‘hard, strong’
<i>h</i>	<i>tehe</i> ‘egret’	<i>hata</i> ‘daughter’

² There are two minor facts regarding the distribution of these sounds which we should mention. First, the *r* is not commonly found word-initially. Second, the unaspirated voiceless affricate is considerably rarer than either the aspirated or the voiced one.

<i>m</i>	<i>amani</i>	'her blood'	<i>mahi</i>	'sun'
<i>n</i>	<i>eneni</i>	'her nose'	<i>nami</i>	'earth'
<i>r</i>	<i>ero</i>	'cockroach'	<i>robo</i>	'iguana'
(3) <i>a</i>	<i>ada</i>	'decorative wristband'	<i>hiza</i>	'strange'
<i>e</i>	<i>ede</i>	'tree trunk'	<i>hizee</i>	'joke'
<i>i</i>	<i>idi</i>	'grandfather'	<i>hizi</i>	'honey, bee'
<i>o</i>	<i>odi</i>	'hole'	<i>hizora</i>	'wide'

The flap is generally lateral when it is both preceded and followed by the vowel *i*, and not lateral elsewhere.

(4) <i>po[r]e</i>	'pierced'
<i>o[r]i</i>	'paddle'
<i>o[r]a</i>	'tree (sp.)'
<i>ʒe[r]o</i>	'grass'
<i>e[r]ibo</i>	'our ears'
<i>hi[r]ee</i>	'be without'
<i>hi[l]i</i>	'sing'

Madija has a very simple syllable structure. In fact, we claim that every syllable in Madija is of the unmarked syllable type CV postlexically, and we posit a very simple association of phonemes to the skeleton.³ We allow for the linking of *o* to an onset (C) position, however, and the possibility of a C position being left unassociated.

There are only two restrictions of any significance. The first is that *i* is not linked to a C position in any lexical representation, although it may be linked to C postlexically. There are no instances of [y] that are not preceded by [i]. The second restriction is that *o* cannot be linked to two positions inside a single syllable. There is no syllable *wo* at any level of representation.

As illustrated below, Madija allows the left-to-right association of the vowels *i* and *o* to an empty C position postlexically. In many other cases the C position is filled by a glottal stop. This occurs whenever the vowels are identical (as in *poo* [poʔo] 'manioc'), at the beginning of an utterance (as in *oni* [ʔoni] 'name'), and between certain vowels (such as *ai*), especially (but not exclusively) when the second vowel is suffixal (as in *ka-i* [kaʔi] 'it is cooked', which contrasts with *kaikai* [kaikai] 'parrot'). Elsewhere the C position is simply not filled, resulting in what is phonetically a syllable without an onset. The lexical and phonetic representations of several words are given in (5).

³ On the lexical/postlexical distinction, see Kiparsky (1982; 1985) and Mohanan (1986).

(5a)	Lexical	Phonetic
<i>onii</i>	<i>o n i</i>	<i>ʔ o n i ʔ i</i>
[ʔoniʔi]	^	
'other (fem.)'	V C V V	C V C V C V
(5b) <i>oaa</i>	<i>o a</i>	<i>ʔ o a ʔ a</i>
[ʔowaʔa]	^	\
'other (masc.)'	V V V	C V C V C V
(5c) <i>tia</i>	<i>t i a</i>	<i>t i a</i>
[tiya]		\
'you'	C V V	C V C V
(5d) <i>kao</i>	<i>k a o</i>	<i>k a o</i>
[kao]		
'prick'	C V V	C V C V
(5e) <i>k^hai</i>	<i>k^h a i</i>	<i>k^h a i</i>
[k ^h ai]		
'crack'	C V V	C V C V

There is some variation in these postlexical processes of glottal insertion and spreading, with the result that some words have three possible pronunciations, as shown in:

(6) *roi* [roi], [roʔi], [roβi], 'wood borer'