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“How Can I Write My Language?” Linguistic Analysis and Language Revitalization: Lessons from Waimiri Atroari Syllable Structure

ABSTRACT: There are few linguistic studies of the Waimiri Atroari language and all are relatively recent: Hill and Hill (1985), Lacerda (1991), Bruno (1995, 1998, 2003, 2004, 2005, 2006, 2008, and 2009). Yet, the point of this paper is that linguistic analysis is crucial for language revitalization. To support this position, I discuss the experience of the Waimiri Atroari with formal education and orthography, in particular as it relates to syllable structure. I describe how syllable structure works in Waimiri Atroari and I discuss the failings of orthographies that do not take into account the language structure.

KEY WORDS: Orthographies; Syllable structure; Waimiri Atroari Language.

RESUMO: Existem poucos estudos linguísticos sobre Waimiri Atroari, a maioria deles são relativamente recente: Hill e Hill (1985), Lacerda (1991), Bruno (1995, 1998, 2003, 2004, 2005, 2006, 2008 e 2009). Este artigo defende que a análise linguística é crucial para revitalização de uma língua. Para fundamentar minha posição, discutimos a experiência do grupo com a Educação formal e com as diferentes ortografias propostas para a língua, particularmente relacionadas à estrutura silábica. Mostramos como funciona a estrutura silábica em Waimiri Atroari e abordamos os problemas das ortografias que não levaram em conta a estrutura da língua.

PALAVRAS-CHAVE: Ortografias; Estrutura Silábica; Língua Waimiri Atroari.

1. THE WAIMIRI ATROARI PEOPLE AND FORMAL EDUCATION

Until recently, Waimiri Atroari was not written. In 1985, one village had contact with a national group of Catholic missionaries known as Indigenous Missionary Council (CIMI). During this time, a missionary couple —Egydio and Dorothy Schwade— established a phonological proposal and developed an alphabet, based on their linguistic studies. They taught about twenty village men to read. Later, the couple was refused access by National Indian Foundation (FUNAI), but the village people wanted to continue to study. Table (1) below shows how this missionary couple registered the sounds in Waimiri Atroari.

Table 1. Schwade's orthography

Phoneme	Orthography Symbol
/p/	<p>
/t/	<t>
/tʃ/	<tx>
/k/	<k>
/b/	
/d/	<d>
/dʒ/	<dj>
/m/	<m>
/n/	<n>
/ŋ/	<ñ>
/s/	<s>
/ʃ/	<x>
/h/	<h>
/r/	<r>
/w/	<w>
/y/	<y> to represent the glide
/i/	<i>
/e/	<e>
/i/	<î>
/u/	<u>
/o/	<o>
** They did not register long vowels.	

In 1986, another missionary couple from Evangelical Mission of the Amazonian (MEVA) —Joseph and Tamara Hill— who had worked and done linguistic research with the Wai-Wai people (another Carib group), tried to continue working in the same village. They also did a preliminary description of the phonology and established another orthography, which diverged from the Schwade's orthography. Later on, this couple was expelled as well. The problem with the orthographies that they developed was that they were not based on any profound linguistic study of the language. However, Hill's orthography was more linguistically accurate; for example, they registered long vowels, an important phonological feature in this language. Observe at table (1.1) the difference between Schwade's and Hill's orthography.

Table 1.1. The difference between Schwade's and Hill's orthography

Schwade's orthography	Hill's orthography
/ɲ/ ñ	ñ
/y/ y to represent the glide	j
/i/ î	y
They did not register long vowels	They registered long vowels as VV

In 1998, with the contract established between FUNAI and Eletronorte¹, the Waimiri Atroari decided that any educational experience from then on should be conducted in all villages, instead of restricting education to one village. From 1988 to 1993, FUNAI hired non-native teachers to teach the Waimiri Atroari people their native language, Portuguese, and mathematics. In May 1988, João das Letras, responsible for the educational sub-program, analyzed the different orthographic systems and chose particular aspects of each of them. In 1989 the linguist Ruth Monserrat, Edith Lacerda² (a teacher), and Edilberto Fonseca (the coordinator of the educational sub-program), began having meetings to discuss linguistic aspects relevant for the literacy project. Table (1.2) summarizes the points that were discussed in the meetings.

Table 1.2. Meetings to discuss the orthography and linguistic aspects

November 1989	March 1990	November 1990
Do not register long vowels.		
Represent the phoneme /y/, registered as /j/, by the letter /i/. As a result, <i>maja</i> become <i>maia</i> 'knife.'		
Eliminate the letter /w/ used after or before /u/. <i>Paruwe</i> become <i>Parue</i> 'proper name.'		The glottal marked before the vowel would be marked after the vowel. <i>mar'e</i> become <i>mare'</i> (sp. of bird).
Do not use closed syllables: instead of <i>am.pa</i> write <i>amypa</i> 'other.'	Syllable reduction would be selected only for some words; as a result, <i>amypa</i> would be <i>ampa</i> .	It is possible to have CV, VC, CCV, CVC, and CCVC.

The problem with this system was that the Waimiri Atroari did not attend the discussions. Although the non-native teachers discussed the issues with Waimiri Atroari students in the villages, in the meetings with the linguist no *kinja* (Waimiri Atroari self denomination) were there. This system generated a climate of uncertainty among the community in relation to the way of writing the language.

The point is that there were two main issues with that formal educational system: 1) they had non-native teachers teaching them³; and 2) the non-native teachers did not stay for very long in the villages: every time a village got a new teacher, they needed time to learn the language and adapt to the village lifestyle. By the time they were adapted, they were leaving.

¹ The Northern Brazilian Electronic Power Company. ("Centrais Elétricas do Norte do Brasil S/A").

² Lacerda, having a natural talent, carried out by herself some linguistic research describing many aspects of the Waimiri Atroari language. I learned a lot from her.

³ My first contact with the Waimiri Atroari people happened in 1991. At that time, I also was a non-native teacher. I worked with them until 1993. At that time, I did not have any intention of doing linguistic research. However, I had the opportunity to work in a village that had the tradition of producing a lot of mythological stories and different kinds of texts, continuing the work established by the teacher, Carlos Augusto Queiroz, who had to leave the village because of health problems.

At that time, people from different villages used different orthographies; even in the same groups, people wrote sometimes with a different orthography than the one they were exposed to through formal education. In 1994, the Waimiri Atroari community decided to invest in training native teachers since the non-native teachers had difficulties with the Waimiri Atroari language and spent little time in the villages. By the end of 1994, I proposed to the community to do linguistic research with them. Below I provide an analysis of the phonological system and the syllable structure of this language, in order to clarify the discussion.

2. WAIMIRI ATROARI PHONOLOGICAL SYSTEM

The Waimiri Atroari phonemic inventory includes seventeen consonant phonemes and twelve vowel phonemes, seven short and five long. The consonant phonemes are /p/, /b/, /t/, /d/, /k/, /ʔ/, /s/, /ʃ/, /h/, /tʃ/, /dʒ/, /m/, /n/, /ɲ/, /r/, /w/, /j/, and the vowel phonemes are /i/, /e/, /ɛ/, /a/, /i/, /u/, /o/, /e:/, /a:/, /e:/, /i:/, /o:/. (Bruno 2003)

2.1. Segments

Table 2.0 and Table 2.1 show all 29 distinctive segments of Waimiri Atroari represented together with the orthographic symbols used in the literacy project

Table 2.0. Waimiri Atroari consonant distinctive segments

	Bilabial	Apico-Alveolar	Palatal	Dorso-Velar	Glottal
Stops	p b	t d	tʃ<tx> dʒ<dj>	k	ʔ<'>
Fricative		s	ʃ<x>		h
Nasal	m	n	ɲ<nj>		
Liquid		r			
Approximant	w		j<i>		

2.1. Consonants

2.1.1. Stops

The Phonemes /p/, /t/, /k/ are voiceless stops at bilabial, apico-alveolar, and dorso-velar points of articulation. They can occur initially and intervocalically. The Phonemes /b/ and /d/ are voiced stops at bilabial and apico-alveolar points of articulation. They also occur in the beginning of the word and intervocalically. Waimiri Atroari does not allow stops in coda position or at the end of the word.⁴ Note that /p/ and /k/ appear in cluster /pr/, /kr/, discussed in 2.1.6.

⁴ The only exception is for the negation particle *kap*.

(1) /p/			(2) /t/		
py.ru.wa	[pi.ru.wa]	'arrow'	te.ty.ky	[te.ti.ki]	'Brazilian nut'
pa.pa	[pa.pa]	'father'	ty.ru.wa	[ti.ru.wa]	'ceramic pan'
pa.tu.wa	[pa.tu.wa]	'pataua berry'	wa.ty	[wa.ti]	'fire'
wa.ra.pi.nji	[wa.ra.pi.ji]	'proper name'	ma.ty.ty	[ma.ti.ti]	'kind of basket'
py.ry.ry	[pi.ri.ri]	'frog'	ta.ra.ra	[ta.ra.ra]	'thunder'

(3) /k/

ka.nu.wa	[ka.nu.wa]	'canoe'
sam.ka	[sam.ka]	'hammock'
xi.ri.ki.ki	[ʃi.ri.ki.ki]	'Sp of parakeet'
kaa.pa	[ka:.pa]	'plantation field'

(4) /b/

bi.ky	[bi.ki]	'son' (female speech)	ma.da.na	[ma.da.na]	'lier'
ma.ba	[ma.ba]	'macaw'	de.he.de.de	[de.he.de.he]	'cough'
ba.ky.ma	[ba.ki.ma]	'salt'	my.dy	[mi.di]	'house'
ka.ba.ha	[ka.ba.ha]	'Sp. of armadillo'	da.nja	[da.ɲa]	'cicada'

(5) /d/

Sometimes /p/ occurs in free variation with the voiced stop /b/ and the nasal /m/. Like the phoneme /p/, the phoneme /b/ also occurs in variation with the nasal /m/. Although the examples below show this free variation, /p/, /b/, and /m/ are distinctive segments as shown in Table 2.0, which shows minimal or near minimal pairs.

(6) [p]~[b]

kampa~kamba	'Let's go'
akybyhy~akymyhy	'porridge'

(7) [p]~[m]

kampa~kama	'Let's go'
panana~manana	'bumblebee'

(8) [b]~[m]

babyka~bamyka	'wide'
benry~menry	'design, drawing'

The examples in (6) and (7) show that Waimiri Atroari does have nasal assimilation: for example, *impa* 'then, after.' However, it is also possible to find examples where nasal assimilation does not occur, such as *nytynpa* 'he/she went' and *sakenpa* 'angry'. The cases where nasal assimilation does not occur involve a morpheme boundary, for example *ny-tyn-pa* or *saken-pa*.

2.1.2. Palatals

The phonemes /tʃ/, and /dʒ/ are voiceless and voiced affricates, respectively. In Waimiri Atroari, the sequence of these palatal segments is perceived as a single unit. They can occur initially and intervocalically.

(9) /tʃ/ <tx>

txa.my.ry	[tʃa.mi.ri]	‘elder, old’
txi.dji	[tʃi.dʒi]	‘type of basket’
i.txi	[i.tʃi]	‘forest’

(10) /dʒ/ <dj>

dja.ky.ny	[dʒa.ki.ni]	‘proper name’
wu.dji	[wu.dʒi]	‘clay’
ka.dji.wi	[ka.dʒi.wi]	‘worm’

Although /dʒ/ <dj> occurs more frequently before /i/ than /d/, this does not mean that /d/+i/ always results in the palatalization of /d/. See the examples in (11)–(13) where /d/ remains before /i/.

- (11) di.mi.na ‘proper name’
 (12) dia [di.ja] ‘species of tree’
 (13) di.re.he ‘scale’

2.1.3. Fricatives

The phonemes /s/, /ʃ/ <x>, and /h/ are voiceless fricatives at apico-alveolar, alveopalatal, and glottal points of articulation, respectively. They can occur in the beginning and in the middle of the word. In this group, /s/ and /h/ can appear in word-medial coda position, but never at the end of the word.

(14) /s/

se.he	[se.he]	‘tall’
py.kwa.se	[pi.kwa.se]	‘to shoot arrows’
ias.ka	[jas.ka]	‘relatives’

(15) /ʃ/ <x>

xi.ba	[ʃi.ba]	‘fish’
a.wa.xi	[a.wa.ʃi]	‘sugar cane’
xeri	[ʃe.ri]	‘skate fish’

(16) /h/

hi.ri	[hi.ri]	‘Cajun fruit’
tah.ko.me	[tah.ko.me]	‘elder man’
tyhnaka	[tih.na.ka]	‘over, above, on’
wa.ha	[wa.ha]	‘many, much’

In some words, it is possible to find free variation among [ʃ] <x> ~ [h], [s] ~ [h], and [s] ~ [ʃ] <x>, such as *baxinja* ~ *bahinja* ‘child, small,’ *anahkwa* ~ *anaskwa* ‘native fruit,’ and *syhy* ~ *xyhy* ‘body hair’.

Interestingly, Waimiri Atroari exhibits phonological peculiarities uncommon to the Carib family, the most striking of these being the occurrence of a consonantal system which includes five segments produced with friction (three fricatives, /ʃ/<x>, /h/, and /s/, and two affricates, /tʃ/<tx> and /dʒ/<dj>). The existence of both the glottal fricative /h/ and the glottal stop /ʔ/ is a rare phenomenon in the family. According to Gildea (1995), these consonants originated from a historical process of syllabic reduction: in some languages, this process results in a stop; in other languages, the result is a fricative. In Waimiri Atroari, though, both outcomes occur.

2.1.4. Nasals

The phonemes /m/, /n/ and /ɲ/ are nasals produced at bilabial, apico-alveolar, palatal points of articulation, respectively. They can occur in the beginning and middle of the word. The phonemes /m/ and /n/ can occur in the coda position. However, they do not appear at the end of the word. The only exceptions are found with the second position particle *ram* and the word *takrehen* 'delay, linger.'⁵ Although the phoneme /ɲ/ <ɲj> usually appears following and preceding /i/, it is also found in other environments.

(17) /m/

a.ba.ma	[a.ba.ma]	'blind'
ma.ma	[ma.ma]	'mother'
sam.ka	[sam.ka]	'hammock'

(18) /n/

na.na	[na.na]	'pineapple'
ia.na.na	[ja.na.na]	'mythological pers'
ny.tyn.pa	[ni.tin.pa]	'she/he went'

(19) /ɲ/ <ɲj>

nja.wa	[ɲa.wa]	'rain'
xi.nja	[ʃi.ɲa]	'flute'
wo'.ɲji	[woʔ.ɲi]	'clay'

2.1.5. Glottal

The occlusive glottal /ʔ/ occurs between vowels and between a vowel and a consonant. When a glottal appears in an intervocalic environment, the two vowels are always identical. It can appear in the middle of the word, and in the end of the word as the coda of a final syllable.

(20) /VʔV/ <V'V>

ta.be'e	[ta.beʔe]	'capybara'
a'a	[aʔa]	'1+3 PRO'

(21) /VʔC/ <V'C>

no'.sa	[noʔ.sa]	'she/he sleeps'
wo'.ɲji	[woʔ.ɲi]	'clay'

⁵ The underlying representation of *takrehen* is *takrehene*; therefore, this coda at the end of the word is not common.

(22) /CV?/<CV'>

i.re' [i.reʔ] 'how'

(23) /CCV?/<CCV'>

a.kra' [a.kraʔ] 'Sp. of fish'

2.1.6. Liquid

The phoneme /r/ is the only liquid segment in this language. It is a flap with some lateral release. In Waimiri Atroari, with the exception of the second particle position *ram*, there are no words beginning with /r/. Moreover, /r/ can form clusters /kr/ and /pr/ in CCV syllables.

(24)

wa.ra.ra	[wa.ra.ra]	'turtle'	te.me.re	[te.me.re]	'jaguar'
py.ry.ry	[pi.ri.ri]	'frog'	pa.na.ry	[pa.na.ri]	'long time ago'
ma.kry.kry	[ma.kri.kri]	'pernilong'	kra.txi.ni	[kra.tʃi.ni]	'proper name'
we.ri	[we.ri]	'woman'	me.pry	[me.pri]	'tapir'

2.1.7. Approximants

The Phonemes /w/ and /j/ are a bilabial glide and a palatal glide, respectively. Hill (1985) calls them ambivalent segments (consonantal or vocalic). In the present orthography, /w/ and /j/⁶ are interpreted as a consonant in initial position of the syllable, but in the nucleus the same segments are interpreted as the vowels /u/ and /i/.

(25) /w/

kwa.ta	[kwa.ta]	'spider monkey'
ka.wa	[ka.wa]	'menstruation'
wo.ky	[wo.ki]	'banana'

(26) /j/

ia.na.na	[ja.na.na]	'mythological person'
ma.ba.ia	[ma.ba.ja]	'papaya'
iee	[jee]	'tooth'

2.2. Vowels

Table 2.1. Waimiri Atroari vowel distinctive segments

	Front	Central	Back
High	i	i<y> i:<yy>	u
Mid	e e:<ee>		o:<oo>
Low	ɛ<e>	a a:<aa>	

⁶ Today, in the orthography used in the literacy project, the community does not use [y] to represent the glide. For the glide, they use [j] as established by Hill and Hill (1986). Now /i/ is used both in onset and nuclear position, such as *hi.ri* 'cajun fruit' and *ma.ba.ia* [ma.ba.ya] 'papaya.' In order to address the community request and to not do radical changes, we used the symbol [y] for the /i/.

2.2.1. High Vowels

From the group of high vowels, only the high front vowel /i/ and the high central unrounded /ɨ/ can occur in the beginning of the word as a V syllable. The high round vowel /u/ has a very restricted distribution. It occurs only preceding or following bilabials.

(27) /i/

i.txi	[i.tʃi]	'forest'	ky.my	[kimi]	'bacaba berry'
hi.ri	[hi.ri]	'cajun fruit'	py.ry.ry	[pi.ri.ri]	'frog'
wi.we	[wi.wi]	'wood'	sy.na	[si.na]	'water'
i.na.xi.xi	[i.na.ʃi.ʃi]	'bat'	y.ry.se	[i.ri.se]	'to do'

(28) /ɨ/ <y>

(29) /u/

su.we.ri	[su.we.ri]	'deer' (animal)
ty.ru.wa	[ti.ru.wa]	'ceramic pan'
wu.se	[wu.se]	'to kill'
wu.re	[wu.re]	'fan'
hu.myn.ta.py.pia	[hu.min.ta.pi.pi.ja]	'We made him bleed'
hu.pa.kah.py.pia	[hu.pa.kah.pi.pi.ja]	'We made him wake up'

2.2.2. Mid Vowels

In this group, the middle front unrounded vowel /e/ ranges from closed to open /ɛ/. This vowel /ɛ/ occurs in closed syllables, and is glottalized or lengthened in an open syllable followed by a syllable with an initial consonant. On the other hand, the middle back rounded vowel /o/ does not allow for this possibility.

(30) /e/

me.re.py	[me.re.pi]	'palm fruit'	i.ake	[ya.kɛ]	'alligator'
we.ri	[we.ri]	'woman'	ma.re'e	[ma.rɛʔɛ]	'guam' (bird)
yee	[ye:]	'tooth'	ke.pa	[kɛ.pa]	'she/he said'
be.he	[be.he]	'ceremonial slash'	pa.ru.we	[pa.ru.wɛ]	'proper name'

(31) /e/ [ɛ]

(32) /o/ and /oː/

tah.ko.me	[tah.ko.me]	'elder man, antique man'
wo.ky	[wo.ki]	'banana'
poo.po	[po:po]	'moth'

2.2.3. Low vowels

In Waimiri Atroari, /a/ is a low, central, open unrounded segment.

(33) /a/ and /aː/

a.ma.na	[a.ma.na]	‘Amazonian dolphin’
aːa	[aʔa]	‘1+3PRO’
kaa.pa	[kaːpa]	‘plantation garden’
kwa.da	[kwa.da]	‘bad, ugly’

2.3. Stress

In Waimiri Atroari, stress is not a contrastive feature. In bisyllabic words, stress falls on the final position syllable. Words with more than two syllables may possibly have primary and secondary stress. Syllable with long vowels and glottalized vowels are stressed.

(34)

(a) kaá.pa	‘garden’	(d) ka.pá	‘she/he talked’
(b) my.dý	‘house’	(e) wu.ré	‘fan’
(c) ta.béːe	‘capybara’	(f) ty.rý.ny	‘any small bird’

3. SYLLABLE STRUCTURE IN WAIMIRI ATROARI

In Waimiri Atroari, each syllable has a nucleus constituted by a vocalic phoneme. The syllable can also include a consonant element in onset position and another in final position as a coda. Onsetless syllables (V, VV, VC) only occur at the beginning of the word. Any consonant may appear in syllable-initial position, but only nasals /m/ /n/, fricatives /s/, and glottals /ʔ/<’> /h/ may appear in coda position. When CCV syllable occurs, the second C can only be either the liquid /r/ or the approximant /w/.

Table 3.0. The distribution of the phonemes in the syllables

	Onset		Coda	
	Left edge of the word	intervocalically	Left edge and middle of word	Right edge of the word
/p/	+	+	-	-
/b/	+	+	-	-
/t/	+	+	-	-
/d/	+	+	-	-
/k/	+	+	-	-
/ʔ/ <’>			+	+
/h/	+	+	+	-
/s/	+	+	+	-
/ʃ/ <x>	+	+	-	-
/tʃ/ <tx>	+	+	-	-
/dʒ/ <dj>	+	+	-	-

/m/	+	+	+	-
/n/	+	+	+	-
/ɲ/<ɲj>	+	+	-	-
/r/	-	+	-	-
/w/	+	+	-	-
/y/	+	+		-

In Waimiri Atroari, eight different syllable patterns are observed: V, VV, VC, CV, CVV, CVC, CCV, and CCVC.

(35) CV syllables occur word-initially, word-medially, and word-finally:

wa.ra.ra cv. cv.cv	'turtle'	ma.ty.ty cv.cv.cv	'kind of basketry'	sy. na cv.cv	'water'
ma.ba.ia cv.cv.cv	'papaya'	ma.ba cv.cv	'macaw'	ta.ra.ra cv.cv.cv	'thunder'

V, VV, and VC syllables occur only at the leftmost edge of the word. In V syllables, all the vowels can fill this slot, except the high, back unrounded /u/. On the other hand, VV syllables only appear as the prefix that marks 1st possessive and first object.

(36) /V/

a.ma.na v.cv.cv	'Amazonian dolphin'	i.txi v.cv	'forest, jungle'	i.myy v.cvv	'somebody's hand'
e.ty.pa v.cv.cv	'pain, sickness'	e.py.ry.ry v.cv.cv.cv	'flower'	a.ma.kra v.cv.ccv	'species of fish'

(37) /VV/

aa.my.dy vv.cv.cv	'my house'	aa.sam.ka vv.cvc.cv	'my hammock'	aa.py.ty vv.cv.cv	'my wife'
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(38) /VC/

im.ka vc.cv	'if'	im.pa vc.cv	'then, after'	am.pa vc.cv	'other, another'
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CVC, CCV, and CVV syllables, like CV syllables, can occur in different environments. CVC and CCV syllables can occur initially, medially, and finally; however, CVV syllables do not occur in medial position.

(39)/CVC/

tah.ko.me cvc.cv.cv	'elders'	ny.tyn.pa cv.cvc.cv	'he/she went'	no'.sa cvc.cv	'she/he sleeps'
sam.ka cvc.cv	'hammock'	ias.ka cvc.cv	'relatives'	pas.ky cvc.cv	'niece'
i.re' v.cvc	'how'	ram cvc	'second position particle'	kap cvc	'negation particle'

(40)/CCV/

kwa.da ccv.cv	'ugly, bad'	sa.kra cv.ccv	'white'	ma.kry.kry cv.ccv.ccv	'mosquito'
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(41)/CVV/

kaa.pa cvv.cv	'field'	ky.my cv.cvv	'our hands'	hee.ia [he:ya] cvv.cv	'I drink'
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CCVC syllables occur only in medial position, as a result of morphophonological conditions. In Waimiri Atroari, there is a morpheme *hky~hpa* 'after something' that appears at the end of the verb. Then, when syllabifying the /h/, it will fill the coda position.

(42)/CCVC/

ny.bi.xi.kwah.pa cv.cv.cv.cvc.cv	'after being injured'	ki.ri.kwah.ky.pa cv.cv.cvc.cv	'after being burned'
wy.ka.prym.pa cv.cv.cvc.cv	'wood that serves as support for the house'		

4. DISCUSSION

In 1995, the educational sub-program and the community decided that some modifications to the orthography would be made. At that time, people from different villages used different orthographies; even in the same groups, people wrote sometimes with a different orthography that they were exposed to. The Waimiri Atroari teachers wanted to produce literacy material, but they were worried that these materials would not take into consideration dialectal differences or would not work at all because of the different, competing orthographies that were circulating.

In this year, I developed an orthographic proposal for Waimiri Atroari that draws on my analysis of the language structure and also my ethnographic research with the Waimiri Atroari. The community, the educational group and I decided to rethink the orthography. I

went to different villages and asked many questions, such as what they thought would change or not change in the orthography; and, from the different orthographies, what aspects we could continue to use, such as covering the dialectal differences; marking the long vowels; the *kinja* described things were missing from the orthographies when writing some words. Previous non-native people had not heard the differences between the contrastive short and long vowels in *kymy* 'bacaba berry' and *kymyy* 'hand', for example, and the orthography needed to change to record this distinction. The words with a CV pattern are still marked in that way, having slow speech as the referent. I did not want to make drastic changes because many *kinja* already knew how to write; therefore, we did not change any symbols from the previous orthography. In the table (4.0), I summarize all the differences between the old orthographies and the present orthography.

Table 4.0. Differences between the old orthographies and the one utilized today

Schwade	Hill and Silva	João das Letras and Ruth Monserrat	Current Orthography
/ɲ/- <ñ> To represent the glide <y>	/ɲ/ - <ñ>	/ɲ/ <nj> To represent the glide <j>	/ɲ/ - <nj> <i>
/i/ - <î> Did not register long vowels.	/i/ - <y> Did register long vowels.	/i/ - <y> They began marking long vowels, but later on decided not to mark them because the non-native teachers could not hear them. The other problem was related to syllable structure: words that typically have a CV pattern were sometimes written with a CVC pattern. For example, [ma.ry.ba] and [te.ty.ky] became [mar.ba] and [tet.ky].	/i/ - <y> Long vowels are registered. In this current orthography, we just made some adjustments that took into consideration the perceptions and requests of the <i>kinja</i> . The words with a CV pattern are still marked in that way, having slow speech as the referent. We did not change any symbols from the previous orthography.

In fact, I would have preferred to use [y] to represent the glide sound, but the community decided to continue denoting it as in Hill's orthography. Today, it is registered as [i]. If they used [j] to register the glide, it could make things more confusing because the letter [j] in Portuguese is used in a different way. Because the Waimiri Atroari schools are bilingual, I think we need to keep this in mind when elaborating orthographies. Finally, in the table (4.1), I provide the orthographic symbols that are used in the literacy project today.

Table 4.1. Current orthography, utilized in the literacy project

Phonemes	Orthographic Symbols
/p/	<p>
/t/	<t>
/tʃ/	<tx>
/k/	<k>
/b/	
/dʒ/	<dj>
/m/	<m>
/n/	<n>
/ɲ/	<nj>
/s/	<s>
/ʃ/	<x>
/h/	<h>
/r/	<r>
/w/	<w>
/i/	to represent the glide
/e/	<e>
/i/	<y>
/a/	<a>
/u/	<u>
/o/	<o>
Long vowels are marked as VV	aa, yy, ee, oo

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