A Phonological Sketch of the Yucunany Dialect of Mixtepec Mixtec*

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1. Introduction

In this paper, we present a sketch of the phonology of the Yucunany dialect of Mixtepec Mixtec in terms of its segmental and tonal inventories as well as some phonological processes that we have observed. The Mixtepec Mixtec language is spoken by 12,000 people (Ethnologue, 2004). The speech community sits on the border between the Mixteca Alta and Mixteca Baja areas. The language is spoken in San Juan Mixtepec and many smaller surrounding towns in the ex-districts of Juxtlahuaca and Tlaxiaco. Previous discussions of Mixtepec Mixtec are found in Pike & Ibach (1978) and Josserand (1983).

Throughout the paper, we refer to the 'couplet', which is a common term for the structure of Mixtec roots (see, for example, Josserand 1983), since roots contain exactly two vowels. In Mixtepec Mixtec, root shape is as shown below:

(1)   (C)(C)V(C)V

2. Segments
2.1 Consonants
2.1.1 Consonant inventory

The phonemic consonantal inventory of Mixtepec Mixtec is shown below. The symbols used reflect the practical orthography devised by our Berkeley Mixtec working group. Symbols in parentheses represent phonemes that are marginally used in the language and/or occur only in loanwords.

(2)   Consonantal inventory

Manner	Bilabial	Dental	Alveolar	Palatal(ized)	Retroflex	Velar	Labiovelar
Stop/affricate	(p)	t	tz	(ty)	ch	k	kw
Fricative			s		x	(j)	
	v		z			g	
Nasal	m	n		ñ			
Liquid			l, (r, rr)				
Glide	(w)			y			

2.1.2 Labial variation

We have observed multiple allophones of the /v/ phoneme: [v], [β], and [b]. [v] is the most common, occurring invariably in word-initial position, as in *vílú* [vílú] 'cat'.

Word-medially, especially following a glottal stop, we have observed the [b] and [β] allophones occurring interchangeably with [v], as in the word *u'và* [uʔbà] ~ [uʔβà] ~ [uʔvà] 'salty'.

2.1.3 Phonotactic constraints on consonants

Consonants are restricted to onsets in Mixtepec Mixtec. We have found only one word containing a coda consonant, and it is a loanword: *árroòz* 'rice' < Spanish *arroz*.

Consonant clusters do not occur root-medially. They may occur word-initially or word-medially where prefixes concatenate with roots. The following clusters are attested:

(3)   Nasal + stop or affricate
/nt/   [nd]   *ndúchá*   'goat'
/ntⱻσ/   [ndz]   *ndzìkiì*   's/he walked'
/ntⱻΣ/   [nδⱻZ]*ncháá*   'blue'
/nk/   [Ng]   *kungà'á*   'we will talk (to somebody)'
/nkʷ/   [Ngʷ]   *ngwii*   'fox'

/s/ + stop
/st/   *stàá*   'tortilla'
/sk/   *skéta*   'run!'
/skw/   *Skwiía*   'Santiago Juxtlahuaca'

/Σ/ + consonant
/ΣtⱻΣ/   *xchàà*   'tomorrow'
/Σn/   *Ndìxnúùú*   'Heroica Ciudad de Tlaxiaco'

2.1.4 Loan and marginal consonants

The loan and marginal consonants of Mixtepec Mixtec are as follows. First, we have found /p/ only in loanwords such as *páìì* 'rebozo' < Spanish *paño* 'kerchief'. /r/ also occurs in loanwords, including *lúrrú* 'donkey' < Spanish *burro* 'donkey'. We have found /x/ only in loanwords such as the name *Jwáaà* 'Juan.' /P/ occurs in both Spanish loanwords and in the third person masculine respectful pronoun *-raà,* which may be a loan of unknown origin; Coatlán-Loxicha Zapotec has a third person human informal pronoun *ár*. The phoneme /w/ occurs only in function words, such as the first person plural exclusive pronoun *weè*. Finally, we have found /tʲ/ in only one word: *tyùtza* 'tree'.

2.2 Vowels
2.2.1 Vowel inventory

The vowel phonemes of Mixtepec Mixtec are shown below. This is a canonical five-vowel system with widely dispersed vowels.

(4)   Vowel inventory

	Front	Central	Back
High	i		u
Mid	e		o
Low		a	

Each of these vowels has a nasalized counterpart. Although the vowels' duration varies contextually (for example, vowels bearing a contour tone are somewhat longer than vowels bearing a level tone), vowel length is not phonologically contrastive.

2.2.2 Vowel distribution

The vowels /i/, /u/, /o/, and /a/ occur regularly throughout the language, but the /e/ vowel is rare, occurring in few words. One instance of /e/ is found in *ve'e* 'house'.
Although each of the vowels shown in (4) has a nasalized counterpart, /õ/, and /ɛ☐/ are rare. Some examples are shown below (nasalization is indicated in our orthography via underlining):

(5)   *nákò̱'o̱* 'let's go!'
       kwé̱eè̱ 'slow'

The nasalized vowels /∀☐/, /ã/, and /ʊ☐/ are common, as in the examples below.

(6)   <u>ii</u>   'one'   <u>íí</u>   'skin'   <u>ìñù</u>   'six'
       Jwá̱aà̱ 'Juan'   *kà̱'à̱* 'talk!'   *tzà̱'ù̱* 'fifteen'
       nù̱ú 'face'   *chu̱'ú* 'spider'   *tzànu̱* 'brother's wife'

Interestingly, a majority of monomorphemic words in Mixtepec Mixtec have the same vowel in both syllables. This could be due to a historical vowel harmony process, though no such process exists as part of the synchronic phonology.
There are apparently no diphthongs in the language. In the rare examples containing non-identical adjacent vowels (e.g., *páiì* '*rebozo*'), the vowels belong to different syllables. We have not found any couplets with three different vowels not separated by consonants; such a couplet would probably have to be analyzed as having a diphthong since, as mentioned above, couplets contain exactly two syllables.

3. Suprasegmentals
3.1 Tone
3.1.1 Tone inventory

Mixtepec Mixtec has a three-tone system. The tonal inventory, as exemplified below, includes High (H), Mid (M), and Low (L) tones. In our orthography, H tone is represented by an acute accent, L tone by a grave accent, and M tone is not marked. Since

vowel length is not contrastive, in our orthography we use additional vowels as needed to accommodate tone markings for contour tones.

(7)   L
chùù	'star'	*tzàtù*	'spicy'
ndàà	'flat'	*ìṉ̃ù̱*	'six'

       M
aa	'yes'	*luu*	'little'
u̱u̱	'yes'	*i̱i̱*	'one'

       H
ncháá	'blue'	*vílú*	'cat'
i̱í	'hail'	*kóní*	'female turkey'

3.1.2 Tone patterns on monomorphemic couplets

Couplets exhibit a maximum of three tones. The observed one-, two-, and three-tone patterns on couplets are shown below.

(8)
L	CVV	*chùù*	'star'	*ìì*	'nine'
		ndàà	'flat'	*tzà̱'ù̱*	'fifteen'
	CVCV	*sòkò*	'shoulder'	*sùtù*	'priest'
		ùvì	'two'	*ùtzà*	'seven'
M	CVV	*ngwii*	'fox'	*ve'e*	'house'
		luu	'little'	*u̱'u̱*	'five'
	CVCV	*mula*	'mule'	*machu*	'mule'
		yachi	'near'		
H	CVV	*ncháá*	'blue'	*nchá'á*	'salsa'
	CVCV	*kóló*	'male turkey'	*lóchí*	'vulture'
		kóní	'female turkey'	*ndúchá*	'goat'
LM	CVV	*chàa*	'man'	*kàa*	'metal'
		ñà'a	'thing'	*sò'o*	'ear'
	CVCV	*tzànu̱*	'brother's wife'	*tìka*	'cricket'
		tìtzi	'stomach'	*yùcha*	'river'
LH	CVV	*stàá*	'tortilla'	*nù̱ú*	'face'
		kòó	'snake'	*kò'ó*	'plate'
	CVCV	*kùmí*	'four'	*nàmá*	'soap'
		tzàtú	'coffin'	*sàví*	'rain'

MH	CVV	*yo'ó*	'rope'	*che'é*	'cute'
		ch<u>u</u>'ú	'spider'	*ña'á*	'woman'
	CVCV	*yatá*	'old'		

HM	CVV	*xí'a*	'hawk'		
	CVCV	*tzóko*	'possum'	*tzíka*	'far'
		ñáni	'brother'	*ká'nu*	'big

HL	CVV	*cháì*	'chair'	*kwá'à*	'red'
		chá'à	'short'	*nchá'ì*	'black'
	CVCV	not attested			

ML	CVV	*yoò*	'drinking vessel'	*saà*	'bird'
	CVCV	*xitò*	'uncle'	*tutù*	'paper'
		yu'và	'ice'	*u'và*	'salty'

| LML | CVV | *xàaà* | 'chin' | *xìoò* | 'dress, skirt' |
| | CVCV | *ndàakù* | 'broom' | | |

LHM	CVV	*tzàáa*	'new'		
	CVCV	*yòóso*	*metate*	*yùúti*	'sand'
		kàása	'sister's husband'	*tìíchi*	'avocado'

MLH	CVV	*viìí*	'healthy-looking'		
	CVCV	*yosòó*	'grassy plain'	*ixìí*	'hair'
		tikwàá	'orange'	*ikìí*	'squash'

| MHM | CVV | *Skwiía* | 'Santiago Juxtlahuaca' | | |
| | CVCV | *kotóo* | *sarape* | | |

HML	CVV	*Jw<u>áaà</u>*	'Juan' (< Spanish)	*páiì*	*rebozo*
	CVCV	*yúkuù*	'yoke' (< Sp. *yugo*)	*ánaà*	'heart'
		Mínaà	'Los Tejocotes'	*súkuù*	'high'
			(< Sp. *mina* 'mine')		

HLH	CVV	*chîí*	'fingernail'	*<u> îí</u>*	'skin'
		kwîí	'narrow'	*kwîí*	'green'
	CVCV	*xîní*	'hat'		

Note that not all possible combinations of three tones are observed. Some generalizations regarding the gaps in the set of tone patterns on couplets are as follows. First, we do not find patterns with two adjacent instances of the same tone (e.g. *HHL, where the first syllable is H-toned and the second has a HL falling tone)[1]. We can rule out such patterns via a version of the Obligatory Contour Principle, which bans adjacent

identical tone specifications, applying to underlying forms. However, we must also rule out some couplets with multiply linked underlying tones to avoid unattested patterns such as *HHL arising from underlying HL (where the H tone is linked to both the first and second syllable). This is problematic since we wish to claim that couplets with the same tone on both syllables, e.g. *vílú* 'cat', have only a single, doubly linked tone. One way of solving this problem is to assume that tones are not linked underlyingly; they are associated to the couplet via an algorithm associating tones to tone-bearing units one-to-one from left to right. This would prevent underlying /HL/ from surfacing as *HHL.

Pike & Ibach (1978) report that HM and MH contours do not occur on a single syllable; however, we have found two MHM words in the Yucunany dialect which do exemplify these two contours on a single syllable. *Skwiía* 'Santiago Juxtlahuaca' has a MH contour on the first syllable and *kotóo* 'sarape' has a HM contour on the second syllable. Thus, although HM and MH contours are rare, they are not banned outright.

In addition to the unattested patterns mentioned above, we have not found the tone patterns LMH, LHL, MLM, MHL, HLM, or HMH on couplets. As far as we can tell, this is not a unified category of tone patterns that can be ruled out via any principled constraint or set of constraints. Therefore, we conclude that these are accidental gaps that may (or may not) be filled during future work on this language.

3.2 Nasalization

As mentioned above, all five vowels of Mixtepec Mixtec have contrastively nasalized counterparts, although the mid vowels /õ/ and /ɛ̃/ are rare. Below are some minimal and near-minimal pairs differing in nasalization:

(9) *luu*   'little'   *uu*   'yes'
     ñíí   'husband'   *íí*   'skin'
     kàa   'metal'   *kà'à*   'talk!'
     nàmá 'soap'   *ñùmá*   'wax'

In addition to contrastive nasalization, we find contextual nasalization on vowels following nasal consonants, as also reported by Pike & Ibach (1978). However, in the Yucunany dialect, this contextual nasalization is non-neutralizing, so oral and nasal vowels do contrast following a nasal consonant as seen in the examples below.

(10) *nàmá* 'soap'   *ñùmá*   'wax'
      ánaà 'heart'   *ìñù*   'six'
      kóní 'female turkey'   *tzànu*   'brother's wife'
      mula 'mule'   *nùú*   'face'

In couplets, vowel nasalization usually occurs in both syllables or neither, although there are also rare examples of couplets with nasalization only in the second syllable (e.g., *tzànu* 'brother's wife').

3.3 Glottalization

Glottalization is contrastive on the first vowel of the couplet, there is apparently no contrastive glottalization on the second vowel of the couplet. Glottalization is sometimes realized as creaky voicing, but more commonly as a glottal stop following the first vowel (as reflected in our orthography, where glottalization is indicated by ' after the first vowel). Below are some minimal and near-minimal pairs differing in glottalization.

(11) *ncháá* 'blue'   *nchá'á* 'salsa'
      kòó   'snake'   *kò'ó*   'plate'
      ùvà   'sour'   *ù'và*   'salty'
      chùú   'chicken'   *chu'ú* 'spider'
      yuvà   'wild vegetable'   *yu'và* 'ice'

4. Phonological rules
4.1 Tone rules
4.1.1 Gradient Smoothing

In LHH sequences, the first H is lowered to M. This phenomenon was also documented in Chalcatongo Mixtec by Hinton et. al. (1991). As shown below, LH-final roots, when followed by the H-toned 2sg familiar suffix, undergo Gradient Smoothing, so that the final syllable of the root surfaces with M tone.

(12) *chîí*   'fingernail'   *chîi gú*   'your fingernail'
      kwîí   'narrow/thin'   *kwîi gú*   'you are narrow/thin'
      tikwàá   'orange'   *tikwàa gú* 'your orange'
      nàmá   'soap'   *nàma gú*   'your soap'

We formalize Gradient Smoothing below. Note that we are assuming that the mora is the tone-bearing unit, though this assumption is not crucial.

(13)   μ   μ   μ
       | ǂ |
       L   H   H

This rule delinks H between L and H. In order for this rule to yield surface [LMH], we must assume that the unlinked H is deleted via Stray Erasure, and that a vowel without a phonological tone is realized phonetically with Mid tone. However, we do not wish to argue that there is no phonological Mid tone; rather, we claim that there are two representations that correspond to surface Mid tone: phonologically specified Mid, and tonal non-specification.

4.1.2 Low Tone Spreading

When an underlying LH sequence spans two syllables, the L is realized on both syllables, yielding surface [L.LH]. Low Tone Spreading (LTS) is also documented in Chalcatongo Mixtec (Buckley 1991). The effect of LTS can be seen in the 2sg. As shown below, the 2sg clitic surfaces with level H tone when it follows a H or M tone.

(14) *lúrrú*   'donkey'   *lúrrú gú*   'your donkey'
      tikwàá   'orange'   *tikwàa gú*   'your orange'
      xá'nu̱   'cigarette'   *xá'nu̱ gú*   'your cigarette'
      tzàáku   'corral'   *tzàáku gú*   'your corral'
      kàa   'metal'   *kàa gú*   'your metal'

When preceded by a L tone, the 2sg *gú* surfaces with a LH rising tone, as seen below.

(15) *cháì*   'chair'   *cháì gú*   [τϽΣáì □ùú]   'your chair'
      chá'à   'short'   *chá'à gú*   [τϽΣá'à □ùú] 'you are short'
      ánaà   'heart'   *ánaà gú*   [án:aà □ùú]   'your heart'
      yuchì   'knife'   *yuchì gú*   [yuτϽΣì □ùú] 'your knife'

LTS also appears to apply within lexical items. There is no contrast between LH and L.LH in roots, and as shown below, an underlying /LH/ sequence surfaces as [L.LH].

(16) /kùmí/ →   [kùm:ìí]   'four'   /nàmá/ →   [nàm:àá]   'soap'
      /tsàtú/ →   [tsàtùú]   'box'   /sàví/ →   [sàvìí]   'rain'

We formalize LTS as shown in (17).

(17) μ   μ
 | ⟍ |
      | ⟍ |
      L   H
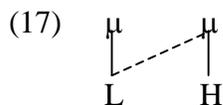
4.2 Segmental rules
4.2.1 Nasal Place Assimilation

There is no place contrast in nasals immediately preceding another consonant. The nasal is invariably pronounced at the same place of articulation as the following consonant. This does not apparently result in any nasal place alternations, but the pattern is robust in the lexicon, as in the examples below.

(18) [ndìkaà]   'pine cone'   [ndàakù]   'broom'
      [nda'á]   'hand'   [Ngàú]   'Santa María Tepostlantongo'
      [Ngwii]   'fox'   [nchaa]   'blue'

We posit a rule of Nasal Place Assimilation to account for this pattern. In this and subsequent rules, C and V refer to Root nodes of consonants and vowels, respectively.

(19)

```
              C                    C
             / |                   |
     [nasal] ≠ |                   |
              Place             Place
```
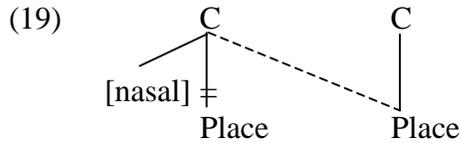
We have not found any cases of [mp] (or, more likely given the Post-Nasal Voicing Assimilation rule to be discussed, [mb]). However, this is not surprising since as mentioned earlier, /p/ is a marginal phoneme found only in loanwords.

An alternative to this approach would be to claim that there is a prenasalized stop series, so that the word-initial onsets in the examples in (18) are single segments. We have opted to analyze these as complex N+C onsets based on evidence from verbs, which are marked by an *n-* prefix in the completive aspect when the root begins with /t/ or /ts/. In these cases, the onset of the completive form of the verb surfaces as [nd] or [ndz], respectively, and these onsets sound identical to those found in the couplets in (18). Some examples are provided below:

(20) *tíìì*   'I am holding'   *ndìiì*   'I held'
      tíviì yù   'I am blowing'   *ndìviì yù*   'I blew'
      tzatzíî   'I am eating'   *ndzàtzíî*   'I ate'
      tzí'ì yù   'I'm dying'   *ndzì'ì yù*   'I died'
      tzí'ìì   'I am drinking'   *ndzì'ìì*   'I drank'

4.2.2 Post-Nasal Voicing Assimilation

In the examples in (20) above, couplet-initial /t/ and /tz/ surface as [d] and [dz], respectively, when preceded by the completive *n-* prefix. There is no contrast between, e.g., [nt] and [nd]; in every combination of a nasal consonant + other consonant, the entire sequence is voiced. We account for this via a Post-Nasal Voicing Assimilation rule, as formalized below.
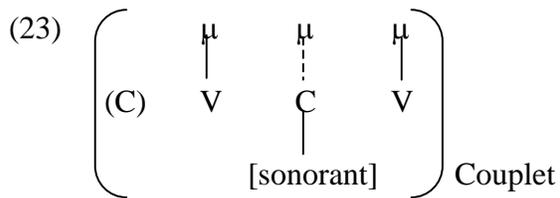
(21)

```
    C              C
    |          ⟋  ╱ //
    |    [+voi]      [-voi]
 [nasal]
```
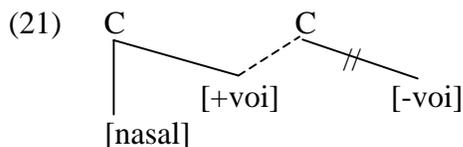
4.2.3 Sonorant Gemination

Sonorant consonants are audibly lengthened intervocalically in a root, as shown in the narrow transcriptions below.

(22)   *kùmí*   [kùm:ìí]   'four'   *ùnì*   [ùn:ì]   'three'
        ìñù̱   [ì̱n:yù̱]   'six'   *kóló*   [kól:ó] 'male turkey'

We have not systematically investigated the difference in duration between lengthened and non-lengthened sonorants, but in a typical token of *vílú* 'cat', the duration of medial [l] is 165 ms, compared to 119 ms for the initial [l] in a typical token of *lóchí* 'vulture'.

     To account for this pattern, we posit a rule of Sonorant Gemination that inserts a mora linked to the medial sonorant. In effect, this causes the medial sonorant to become a coda to the first syllable in addition to being the onset of the second syllable.

(23)

$$
\begin{array}{cccc}
 & \mu & \mu & \mu \\
 & | & \vdots & | \\
(C) & V & C & V \\
 & & | & \\
 & & \text{[sonorant]} &
\end{array} \quad \text{Couplet}
$$

5. Morphophonology
5.1 Completive aspect allomorphy

     Verb stems apparently can only begin with /t/, /ts/, /k/, or /sk/. As shown below, when the stem begins with /k/, the completive aspect is marked by *nì-* and a complex set of tonal alternations for which we do not yet have a full analysis.

(24)   *ká̱'à̱ yù*   'I am talking'   *nìkà̱'à̱ yù*   'I talked'
      kíkuù   'I am sewing'   *nìkìkuù*   'I sewed'
      ká'viì   'I am reading'   *nìka'viì*   'I read (past)'
      kánaà   'I am yelling'   *nìkanaà*   'I yelled'

Verb stems beginning in /t/ or /ts/ are marked by an *n-* prefix in the completive form and also a floating L tone prefix, which corresponds to the low tone of the *nì-* allomorph.

(25)   *tíiì*   'I am holding'   *ndìiì*   'I held'
      tíviì yù   'I am blowing'   *ndìviì yù*   'I blew'
      tzatzíî   'I am eating'   *ndzàtzíî*   'I ate'
      tzí'ì yù   'I'm dying'   *ndzì'ì yù*   'I died'
      tzí'iì   'I am drinking'   *ndzì'iì*   'I drank'

When the stem begins with /sk/, the completive is not marked segmentally but takes the floating L tone prefix.

(26)   *skétaà*   'I am running'   *skèétaà*   'I ran'
   *skánaà ñaà*   'I am throwing it'   *skàánaà ñaà*   'I threw it'

There is a difference in the way that the floating L tone associates in each of these groups. In the /t/- and /ts/-initial group the floating L replaces the stem-initial tone. In the /sk/-initial group the floating L concatenates to the left of the stem-initial tone. At present, we do not have an explanation for why the different stem types exhibit different tonal behaviors in the past tense.

5.2 1sg allomorphy and non-homophony

The 1sg is ususally marked by a floating L tone that associates to the end of the root. When the root has final H tone, the L associates straightforwardly to the end of the root, yielding a HL falling tone on the final syllable with no further tone changes.

(27) *nàmá*   'soap'   *nàmáà*   'my soap'
      kwîí   'narrow/thin'   *kwîî*   'I am narrow/thin'
      xínìí   'hat'   *xínìî*   'my hat'
      vílú   'cat'   *vílúù*   'my cat'

The association of the floating L (indicated by circling) to the end of the root is schematized below.

(28) *nama* + 1s   *nàmáà*

L H (L)   L H L
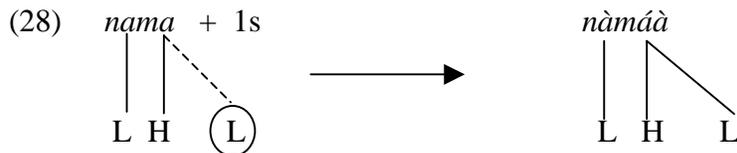
The tonal behavior of M-final roots in the 1sg depends on the preceding tones. On M-final roots where preceding tone is M or H, the floating L tone of the 1sg associates to the end of the root, and the final syllable of the root surfaces with a level L tone rather than the ML falling tone that would have been expected if no tone changes occurred.

(29) *la'la*   'mucus'   *la'là*   'my mucus'
      ve'e   'house'   *ve'è*   'my house'
      tá̱'a̱   'relative'   *tá̱'à̱*   'my relative'
      xá'nu̱   'cigarette'   *xá'nù̱*   'my cigarette'

Since the final M of the root does not surface in the 1sg, we characterize the tone change as delinking (and subsequent deletion via Stray Erasure) of the final M of the root, as illustrated below.

(30)   ta'a   + 1s   ta'a   tá'à

            HM   (L)   HM   L   HL
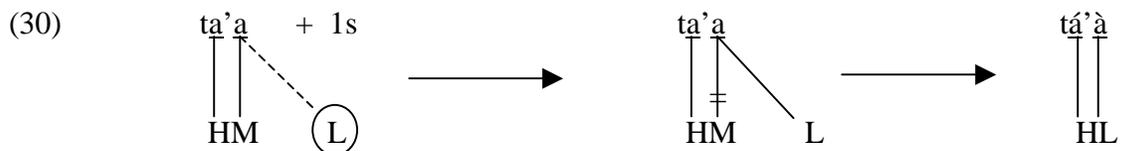
There is an unusual exception to the above generalization, which is that, unlike other roots ending in HM, if the root has the tone pattern LHM, then the final M of the root is retained in the 1sg, as in the examples in (31).

(31)   *yùúti*   'sand'   *yùútìì*   'my sand'
       tzàáku   'corral'   *tzàákuù*   'my corral'
       yòóso   '*metate*'   *yòósoò*   'my *metate*'
       kàása   'sister's husband'   *kàásaà*   'my sister's husband'

This may relate to the fact that there are no LHL roots. However, it cannot result from a general ban against LHL sequences, since such sequences can be derived.

        As shown below, when the root has final M tone and the preceding tone is L, the M is retained in the 1sg.

(32)   *kwà'a*   'man's sister'   *kwà'aà*   'my sister'
       sì'i̠   'leg'   *sì'i̠ì*   'my leg'
       tìtzi   'stomach'   *tìtzìì*   'my stomach'
       kàa   'metal'   *kàaà*   'my metal'

We schematize this situation below. The floating L tone associates to the end of the root, but the M tone is not delinked. Thus, rather than LL (which might be expected based on the behavior of HM- and MM-final roots), these roots surface with LML tone in the 1sg.

(33)   *kwà'a* + 1s   *kwà'aà*   **kwà'à*

       L M (L)   ⟶   L M   L   L L

One possible analysis for the above pattern is that the Obligatory Contour Principle (OCP; Leben 1973, 1978, Goldsmith 1976) is active in this language, penalizing (derived) sequences of L tones. Deleting the M would have yielded a sequence of L tones in these words, but this could be blocked by a version of the OCP as formalized below.

(34)   *   μ μ

           L L

        Until now we have discussed the behavior of roots ending in H or M tones only. Roots with final L tone take a different allomorph of the 1sg marker: *=yù*. Some examples are provided below.

(35)   *chá'à*   'short'   *chá'à yù*   'I am short'
       cháì   'chair'   *cháì yù*   'my chair'
       tutù   'paper'   *tutù yù*   'my paper'

sòkò	'shoulder'	*sòkò yù*	'my shoulder'

It is interesting to note that this allomorphy has the effect of preventing homophony between 1sg and unmarked forms. If L-final roots took the floating L tone allomorph, their 1sg forms would be homophonous with the unmarked form. In the dialect of Mixtepec Mixtec described by Pike & Ibach (1978), the 1sg is, in fact, homophonous with the unmarked form of L-final roots. Pike & Ibach give *-yù* as marking the 1sg polite; our Yucunany consultant does not distinguish polite from familiar in the 1sg.

Pike & Ibach (1978) appear to assume that *yù* is a suffix, but in Yucunany, *yù* can occur after noun+adjective, suggesting that it is not a suffix since material can intervene between *yù* the root. In cases where *yù* occurs with noun+adjective, the choice of the floating L tone vs. *yù* allomorph depends on the final tone of the adjective, irrespective of the tones of the noun. As shown below, when the noun has final L tone (as in *tììnà* 'dog'), the selection of the 1sg allomorph is determined by the final tone of the adjective that follows the noun.

(36)
nchá'ì	'black'	*tììnà nchá'ì yù*	'my black dog'
yá'à	'gray'	*tììnà yá'à yù*	'my gray dog'
ncháá	'blue'	*tììnà nchááà*	'my blue dog'
luu	'little'	*tììnà luu luù*	'my little baby dog'

As expected, when the adjective is held constant (as in the examples below using *nchá'ì* 'black'), the tones of the noun are irrelevant to the selection of the 1sg allomorph.

(37)
kwìkà	'comb'	*kwìkà nchá'ì yù*	'my black comb'
cháì	'chair'	*cháì nchá'ì yù*	'my black chair'
ve'e	'house'	*ve'e nchá'ì yù*	'my black house'
vílú	'cat'	*vílú nchá'ì yù*	'my black cat'
sa'màá	'clothing'	*sa'màa nchá'ì yù*	'my black clothing'
lúrrú	'donkey'	*lúrrú nchá'ì yù*	'my black donkey'

5.3 3sg vowel allomorphy

The 3sg familiar also exhibits phonologically conditioned allomorphy. The 3sg has three allomorphs whose distribution depends on the final segment of the root. On *i*-final roots, the 3sg is marked with *-à*.

(38)
sì'i̲	'leg'	*sì'a̲à*	'his leg'
kachìí	'cotton'	*kachìáà*	'his cotton'
kwî̲í	'narrow'	*kwî̲áà*	'he is narrow'
tzí'ì	'I am dying'	*tzí'à*	'she is dying'

| *yatzìí* | 'small water dipper' | *yatziaa* | 'his small water dipper' |
| *xìchí* | 'nose' | *xìchíà* | 'his nose' |

Elsewhere, the 3sg is marked using *ì* or *ñaà*. The *-ì* allomorph occurs with roots ending in *a, o,* and *u*, as shown below.

(39)
sáà'má	'clothing'	*sáà'mîì*	'his clothing'
vàá'a	'bad'	*vàá'ì*	'it is bad'
tá'a	'relative'	*tá'ì*	'his relative'
nda'á	'hand'	*nda'îì*	'her hand'
kò'ó	'plate'	*kò'îì*	'his plate'
yo'ó	'rope'	*yo'îì*	'his rope'
sò'o	'ear'	*sò'iì*	'his ear'
ma tzá'nu̱	'grandmother'	*ma tzá'nì*	'his grandmother'
kù'ù	'woman's sister'	*kù'ì*	'her sister'

The *-ñaà* allomorph occurs with roots ending in *a, o, e,* and *u*.

(40)
nchá'á	''salsa'	*nchá'á ñaà*	'his salsa'
yosòó	'grassy plain'	*yosòó ñaà*	'his grassy plain'
xitò	'uncle'	*xitò ñaà*	'his uncle'
xìoò	'dress'	*xìoò ñaà*	'her dress'
yoò	'drinking vessel'	*yoò ñaà*	'his drinking vessel'
ve'e	'house'	*ve'e ñaà*	'his house'
kiché'é	'bone'	*kiché'é ñaà*	'his bone'
kwéeè̱	'slow'	*kwéeè̱ ñaà*	'he is slow'

The *-ì* and *-ñaà* allomorphs overlap in their distribution, since both can occur with roots ending in *a, o*, and *u*. We have not been able to establish a generalization regarding the use of *-ì* vs. *-ñaà*. However, one clear generalization regarding the 3sg (familiar) is that roots ending in /i/ never take the *-ì* allomorph. This has the effect of preventing homophony with the plain form of roots ending in L-toned /i/ and with the 1sg form of underlyingly HM- and MM-toned roots ending in /i/.

6. Conclusion

In this paper we have provided a brief description of the phonological system of the Yucunany dialect of Mixtepec Mixtec as we currently understand it. Some of our most interesting results have been in the domain of phonologically based allomorphy. In particular, there are two categories (1sg and 3sg) where allomorphy has the effect of preventing homophony with other morphologically related forms. The exact distribution of these allomorphs and the historical origin of the allomorphy are part of our ongoing research on this dialect. Other phonological topics for future research include the distribution of nasalized vowels and patterns of loanword adaptation.

Notes

[1] We have found a small number of apparent counterexamples which we suspect are either synchronically or historically multimorphemic or borrowings since they have more than two syllables, e.g. *Kanámá* 'Cañama' (a toponym).

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