

# Macuiltianguis Zapotec tone paradigms

George Aaron Broadwell

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## 1 Preliminaries

This manuscript is a listing of a few dozen verbs in Macuilianguis Zapotec, an Otomanguean language spoken in Oaxaca, Mexico. It is based on about a year's work with two speakers of the language, Ignacio Cano and Margarita Martínez, who now both reside in Los Angeles, CA.

The forms recorded here are based on joint work with Jie Zhang, John Foreman, and Pamela Munro, who I thank for their companionship and help.

### 1.1 Terminology and orthography

Macuilianguis Zapotec (MacZ) verbs begin with an aspectual prefix. These aspectual prefixes always have the same tones: /bè~gù-/ 'completive', /ru-/ 'habitual', /gú~í~é-/ 'potential'.

In the spelling system used here, grave accent shows a low tone, acute accent shows a high tone, circumflex shows a fall, and unmarked vowels have mid tone. Apostrophe represents glottal stop /ʔ/.

### 1.2 Phonotactics

MacZ verb stems are in general one or two syllables long. Longer verb stems are generally morphologically complex. For a monosyllabic stem, the allowable patterns are V, CV and CVʔ. For bisyllabic stems, the allowable patterns are VCV, CVCV, CVCV ʔ CVʔCV, and CVC<sub>1</sub>C<sub>1</sub>V(?). Although (C)VnCV is found in some noun stems, e.g. *intè* 'I', I do not know of any verb with this shape.

The most well-attested tone patterns for bisyllabic stems are ØL, ØM, ØH, LM, LH, and HM.<sup>1</sup> Looking only at the well-attested patterns, we can make the following generalization:

**A tonal melody is aligned with the right edge of the verb stem.**

Looking at the relationship between syllable type and tone, it seems that contour tones are only found on stressed open syllables.

### 1.3 Stress patterns and vowel length

The majority of bisyllabic verb stems have initial stress. This accounts for both the placement of the 1<sup>st</sup> person floating H and the fact that such syllables are always bimoraic: either long, closed by a glottal, or closed by a geminate.

However, some stems appear to have final stress. For these stems, the correlation between the docking site for the 1<sup>st</sup> person H tone and the heavy initial syllable of the stem breaks down. In these stems, the 1<sup>st</sup> person floating H is attracted to the second syllable. However, the initial syllable seems to show vowel length contrasts. And it is also possible for the initial syllable to have a contour tone. Consider the following forms:

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<sup>1</sup> There may also be some stems with the pattern HLH and HH, but these are less firmly established.

/-duadii'/, LH, 'to insult'

bè-dùàdíí'-yà'-nà 'I insulted him'	ru-dùàdíí'-yà'-nà 'I am insulting him.'	gú-dúàdíí'-yà'-nà 'I will insult him.'
bè-dùàdíí'-nà-nà 'She insulted him.'	ru-dùàdíí'-nà-nà 'She is insulting him.'	gú-dúàdíí'-nà-nà 'She will insult him.'

We can tell that this stem has stress on the second syllable by the fact that there is no change between the 1<sup>st</sup> and 3<sup>rd</sup> person forms. (For a LH stem with the regular stress pattern, we would expect falling tones in the 1<sup>st</sup> person forms.)

However, the fact that the initial syllable has a falling tone in the potential shows that this syllable must bear some degree of stress, since contour tones never appear on stressless syllables.

There are also some apparent vowel length contrasts in these initial syllables:

- 1) Bè-dèchú-yá'-nà.  
com-fold-1s-3  
  
'I folded it.'
- 2) Bè-nèèsí-yá'-nà.  
com-submerge-1s-3  
  
'I submerged it.'

The following formulation seems to capture the facts reasonably well:

- All initial syllables of verb stems are stressed.
- Some verb stems irregularly have an additional stress on the second syllable.
- The rightmost stressed syllable is the main stress.
- The 1<sup>st</sup> person floating H is attracted to the main stress.
- All main stressed syllables are heavy (either with a long vowel or closed by a geminate).
- Contour tones only appear on stressed, open syllables.
- All unstressed syllables have short vowels.
- Syllables with secondary stress show contrastive vowel length.

Another possible minimal pair for vowel length may be these forms:

- 3) liixina'      'shade'  
libixxi      'hillside, other side of the mountain'

## 1.4 Underlying representations

I'll suggest that the following morphemes have the following underlying representations:

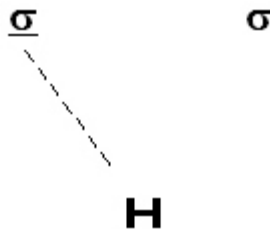
completive	be, L; gu, L
habitual	ru, M
potential	gu, H; i, H; e, H
1 <sup>st</sup> person	ya', HL; te', L?
2 <sup>nd</sup> person	lu', H
3 <sup>rd</sup> person	na, L

## 1.5 Rules

We can account for nearly all the tones found in data with the following seven rules

**Stress placement**                      Assign stress to the rightmost heavy syllable in the word

This will account for nearly all the verb stems in the data. Some verbs, however, have to be marked for an irregular final stress.



**Figure 1** H to stress

**H to stress docking**                      Dock H to stressed syllable

This rule is responsible for the additional H tone that shows up in many 1<sup>st</sup> person forms. This rule is blocked in verb forms where a H tone is aligned with the left edge of the word. (In particular, in the potential aspect, and when the word carries an interrogative H tone.)

**T to free docking**

Spread a tone to a free syllable on the right

This rule accounts for the spreading of prefix tones onto the stem.

**H spread**

Spread a H tone to any syllable on the right

The H of the potential prefix spreads right even if the following syllable already has a tone, creating a contour. The problem is to state the rule in such a way that it will not cause unwanted mischief. We could put some morphological information in the rule, but that is less than desirable. The best option may be to say that a H tone on a light syllable will spread to the right. This seems to correctly capture both the H spread found with the potential and the H spread across word boundaries that is seen in section 7.

H spread creates contours when the target is a stressed open syllable; otherwise it deletes the tone of the following syllable. See the following contrast:

Following syllable is stressed and open, contour created:

- 4) Bè-tùùbí-ná-nà  
com-roll:up-3sg-3sg

‘He rolled it up.’

Gú-tùùbí-ná-nà.<sup>2</sup>  
pot-roll:up-3sg-3sg

‘He will roll it up.’

Following syllable is not stressed and open, tone deleted:

- 5) Bè-tùppi’-nà-càná.  
com-pull:out-3sg-3pl

‘He pulled them out’

Gú-tùppi’-nà-càná.  
pot-pull:out-3sg-3pl

‘He will pull them out’

**Rightward H/M spread**


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<sup>2</sup> This form also shows the effects of Contour realignment, described below.

Spread H/M one syllable right and disassociate L (non-iterative) Condition:  $s_2$  is not closed with a glottal



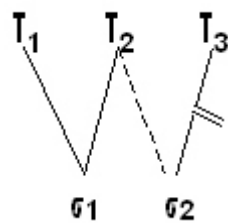
**Figure 2** Rightward  
H/M spread

This rule appears to be blocked from spreading onto the suffix tone when the verb stem ends in a glottal stop (see tone class 2 with /gallaʔ/).

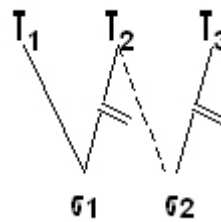
Perhaps a better way to state this is to say that  $s_2$  must be a light syllable.

**Contour realignment** version 1.) When  $T_1$  and  $T_2$  are linked to the same syll, disassoc.  $T_3$  and spread  $T_2$ .

b.) When  $T_1$  and  $T_2$  are linked to the same syll, disassoc.  $T_3$  and spread  $T_2$ , then dissociate  $T_2$ .



**Figure 3** Contour  
realignment (v. 1)



**Figure 4** Contour  
realignment (v. 2)

We see version (a) of the rule when the first syllable is open, version (b) of the rule when the first syllable is closed. See tone class 5 for some minimal contrasts of this sort.

**Obligatory Contour Principle** Delete a root H when it is immediately preceded by another H (within some phonological domain).

This rule is seen most notably when the verb is preceded by elements like *àbí*, as discussed in section 7 below.

It doesn't apply between a root-final H and the H of a suffix:

- 6) Lànà bè-xiiti'-nà-nà. 'S/he tied it up.'  
3sg com-tie-3s-3s
- Líbi'i bè-xiiti'-lí-ná. 'Y'all tied it up.'  
2pl com-tie-2pl-3s
- Lààcwá'lí bè-xiiti'-cwá'lí-ná. 'Y'all (formal) tied it up.'  
2pl:form com-tie-2pf-3s (4:183)

Note that since the verb stem ends with a glottal stop, we couldn't analyse these forms as OCP deletion, followed by Rightward H/M spread.

## 2 Transitive verbs

### 2.1 Initial Ø stems

### 2.1.1 Tone class 1: Ø M stems (type 1:initial stress)

7)

-xatta'- 'to iron' planchar	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-xáttá'-yá'-nà I ironed it.	ru-xáttá'-yá'-nà I am ironing it.	gú-xáttá'-yá'-nà I will iron it.
3 <sup>rd</sup> person	bè-xáttá'-nà-nà He ironed it.	ru-xáttá'-nà-nà He is ironing it.	gú-xáttá'-nà-nà He will iron it.

/-catsi-/ 'to hide' shows the same paradigm.

### 2.1.2 Tone class 2: Ø M stems, (type 2: final stress)

8)

-dechu- 'fold' 'doblar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dèchú-yá'-nà	ru-dèchú-yá'-nà	gú-dèchu-ya'-nà
3 <sup>rd</sup> person	bè-dèchu-na-nà	ru-dèchu-na-nà	gú-dèchu-na-nà

9)

-neesi- 'submerge (s.o.)'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-nèésí-yá'-nà	ru-neesí-yá'-nà	gú-néési-ya'-nà
3 <sup>rd</sup> person	bè-nèési-na-nà	ru-neesi-na-nà	gú-néési-na-nà

### 2.1.3 Tone class 3: Ø H stems (type 1:initial stress)

10)

-galla' - 'to hang up' colgar	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-gállá'-yà'-nà I hung it up.	ru-gállá'-yà'-nà I am hanging it up.	gú-gállá'-yà'-nà I will hang it up.
3 <sup>rd</sup> person	bè-gállá'-nà-nà He hung it up.	ru-gállá'-nà-nà He is hanging it up.	gú-gállá'-nà-nà He will hang it up.

This class is just like the Ø M class above, with a H on the second syllable.

#### 2.1.4 Tone class 4: Ø H stems (type 2:final stress)

11)

-lappi' - 'to load'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-làppí'-yà'-nà I loaded it.	ru-lappí'-yà'-nà I am loading it.	gú-làppí'-yà'-nà I will load it.
3 <sup>rd</sup> person	bè-làppí'-nà-nà He loaded it.	ru-lappí'-nà-nà He is loading it.	gú-làppí'-nà-nà He will load it.

#### 2.1.5 Tone class 5: Ø L stems

-gwi'ya 'to give (s.o.) something to drink'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-gwí'yà-yà'-nà I gave him something to drink..	ru-gwí'yà-yà'-nà I am giving him something to drink.	gú-gwí'yà-yà'-nà I will give him something to drink
3 <sup>rd</sup> person	bè-gwí'yà-nà-nà He gave him something to drink.	ru-gwí'yà-nà-nà He is giving him something to drink.	gú-gwí'yà-nà-nà He will give him something to drink.

The same stem also often shows up with a preceding /-di-/ ‘repetitive’ which is toneless. The first person repetitive forms are:

bè-dì-gwí’yà-yà’-nà ‘I gave him something to drink again.’  
 ru-dì-gwí’yà-yà’nà ‘I am giving him something to drink again.’  
 gú-dí-gwi’yà-yà’-nà ‘I will give him something to drink again.’ 4:47

We see from these forms that /-di-/ ‘repetitive’, like /-di-/ ‘causative’, is toneless. The potential form shows the expected H tone suppression.

## 2.2 Initial L stems

### 2.2.1 Tone class 6: L M stems:

12)

-daaga- ‘to run into’	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dáàgà-yà’-nà I ran into him.	ru-dáàgà-yà’-nà I am running into him.	gú-dáàgà-yà’-nà I will run into him.
3 <sup>rd</sup> person	bè-dààga-na-nà He ran into him.	ru-dààga-na-nà He is running into him.	gú-dáàgà-nà-nà He will run into him.

13)

-laalia- ‘to spill’	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-láàlià-yà’-nà I spilled it.	ru-láàlià-yà’-nà I am spilling it.	gú-láàlià-yà’-nà I will spill it.
3 <sup>rd</sup> person	bè-lààlia-na-nà He spilled it.	ru-lààlia-na-nà He is spilling it.	gú-láàlià-nà-nà He will spill it.

14)

-tsiibi- 'to smooth out'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-tsiìbì-yà'-nà I smoothed it out.	ru-tsiìbì-yà'-nà I am smoothing it out.	gú-tsiìbì-yà'-nà I will smooth it out.
3 <sup>rd</sup> person	bè-tsiìbì-nà-nà He smoothed it out.	ru-tsiìbì-na-nà He is smoothing it out.	gú-tsiìbì-nà-nà He will smooth it out.

The low on the second syllable of the verb stem in the 1<sup>st</sup> persons + potential is a result of contour realignment.

### 2.2.2 ✓Tone class 7: L H disyllabic stems (initial stress):

15)

-xiiti'- 'to tie up, to interrupt'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-xiìtì'-yà'-nà I tied it up.	ru-xiìtì'-yà-nà I am tying it up.	gú-xiìtì'-yà'-nà I will tie it up.
3 <sup>rd</sup> person	bè-xiìtì'-nà-nà He tied it up.	ru-xiìtì'-nà-nà He is tying it up.	gú-xiìtì'-nà-nà He will tie it up.

16)

-tuubi- 'to roll (s.t.)'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-tùùbì-yà'-nà I rolled it up.	ru-tùùbì-yà'-nà I am rolling it up.	gú-tùùbì-yà'-nà I will roll it up.
3 <sup>rd</sup> person	bè-tùùbì-ná-nà He rolled it up.	ru-tùùbì-ná-nà He is rolling it up.	gú-tùùbì-ná-nà He will roll it up.

17)

-tuppa- 'to put (things) together'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-túppà-yà'-cànà I put them together.	ru-túppà-yà'-cànà I am putting them together.	gú-túppà-yà'-cànà I will put them together.
3 <sup>rd</sup> person	bè-tùppá-ná-cànà He rolled it up.	ru-tùppá-ná-cànà He is rolling it up.	gú-túppà-nà-cànà He will roll it up.

18)

-tuppi' 'to pull out'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-túppi'-yà'-cànà 'I pulled them out'	ru-túppi'-yà'-cànà 'I am pulling them out'	gú-túppi'-yà'-cànà 'I will pull them out'
3 <sup>rd</sup> person	bè-tùppi'-nà-cànà 'He pulled them out'	ru-tùppi'-nà-cànà 'He is pulling them out'	gú-túppi'-nà-cànà 'He will pull them out'

Comparing these, we see several very interesting things. The contrast between /tubi/ and /tuppa/ shows us that Contour Realignment is sensitive to open/closed syllables. The contrast between /tuppi'/ and /tuppa/ shows us that a final glottal stop blocks Rightward H/M spread.

/-quexxu-/ 'to toast' is like /-tuppa-/ tonally.

### 2.2.3 ✓Tone class 8: L H disyllabic stems (final stress):

19)

-duadii'- 'to insult'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dùàdíí'-yà'-nà	ru-dùàdíí'-yà'-nà	gú-dùàdíí'-yà'-nà
3 <sup>rd</sup> person	bè-dùàdíí'-nà-nà	ru-dùàdíí'-nà-nà	gú-dùàdíí'-nà-nà

These examples, contrasted with LH (initial stress) show the importance of a stress feature in predicting the behavior of the 1<sup>st</sup> person suffix. A question — why doesn't contour realignment apply here? Does it only apply if the syllable with the contour is stressed?

### 2.2.4 ✓Tone class 9: L H monosyllabic stems

20)

-caa- 'to stretch' 'estirar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-càà-yà'-nà	ru-càà-yà'-nà	gú-càà-yá'-nà
3 <sup>rd</sup> person	bè-càà-ná-nà	ru-càà-ná-nà	gú-càà-ná-nà

The verb /tsa'a/ 'to heat' shows the same paradigm.

Completive and habitual show 'tone flip', while the potential is invariable. Rightward H/M works as expected.

The completive and habitual have the same derivation as the disyllabic L H stems. The failure of the potential H to spread onto the verb stem is mysterious. It must have something to do with the fact that the stem is a monosyllable with a contour tone.

### 2.2.5 ✓Tone class 10: L stems

21)

-chuu 'to cut'	Completive	Habitual	Potential
1 <sup>st</sup> person	gù-chúù-yà'-nà I cut it.	ri-chúù-yà'-nà I am cutting it.	í-chúù-yà'-nà I will cut it.
3 <sup>rd</sup> person	gù-chúù-nà-nà He cut it.	ri-chúù-nà-nà He is cutting it.	í-chúù-nà-nà He will cut it.

This derivation is simple.

### 2.3 Initial H tone invariable stems

Verbs that start with an initial stress and H as first tone show no tonal effects for the 1<sup>st</sup> person.

### 2.3.1 ✓Tone class 11: H M stems

22)

-xu'ni- 'to wrinkle' arrugar	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-xú'ni-ya'-nà I wrinkled it.	ru-xú'ni-ya'-nà I am wrinkling it.	gú-xú'ni-ya'-nà I will wrinkle it.
3 <sup>rd</sup> person	bè-xú'ni-na-nà He wrinkled it.	ru-xú'ni-na-nà He is wrinkling it.	gú-xú'ni-na-nà He will wrinkle it.

### 2.3.2 Tone class 12: H L (H) stems

23)

-tsian(y)- 'to change' 'cambiar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-tsiàn-yá'-nà	ru-tsiàn-yá'-nà	gú-tsiàn-yá'-nà
3 <sup>rd</sup> person	bè-tsiàn-nyá-nà	ru-tsiàn-nyá-nà	gú-tsiàn-nyá-nà

We have still not reached consensus on these tones.

The invariant H on the syllable following the stem may be the effect of a floating H (perhaps associated with a deleted /i/ after the stem. (I.e. the underlying form of the stem may be *tsiáni*.) The potential shows a different pattern than the other aspects. The floating H may also explain why contour realignment has not applied here.

## 2.4 Adding the causative prefix /di-/

Some verbs form their causative with a prefix /di-/. This prefix is toneless, and gets whatever the tone of the preceding aspect prefix is. It is interesting, however, that when this prefix is present, tones from the aspect prefixes don't spread further onto the verb stem. (Apparently T to free applies only once.)

### 2.4.1 Causative + L M stem

24)

-di-biisi- 'to dry' 'secar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dì-bíisi-yà'-nà 'I dried it'	ru-di-bíisi-yà'-nà 'I am drying it'	gú-dí-biisi-ya'-nà 'I will dry it'
3 <sup>rd</sup> person	bè-dì-biisi-na-nà 'He dried it'	ru-di-biisi-na-nà 'He is drying it'	gú-dí-biisi-na-nà 'He will dry it'

For the most part, this is just like the LL stems above.  
Identical to this tonally is /-di-yhèèni/ 'to cause to grow'.

25)

-di-laaga'- 'to widen' 'ampliar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dì-láàgà'-yà'-nà	ru-dì-láàgà'-yà'-nà	gú-dí-làga-yà'-nà
3 <sup>rd</sup> person	bè-dì-làga'-nà-nà	ru-di-làga'-nà-nà	gú-dí-làga'-nà-nà

In the 1<sup>st</sup> person completive and habitual, the rule of Contour Realignment has applied to take HL M to HL L.

#### 2.4.2 Causative + Ø L stem

26)

-di-biththa- 'wet' 'mojar'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dì-bíththà-yà'- nà 'I wet it'	ru-di-bíththà-yà'- nà 'I am wetting it'	gú-dí-biththà-yà'- nà 'I will wet it'
3 <sup>rd</sup> person	bè-dì-biththà-nà-nà 'He wet it'	ru-di-biththà-nà-nà 'He is wetting it'	gú-dí-biththà-nà-nà 'He will wet it'

These work fine if we assume that the stem is Ø L. The M on the initial syllable of the verb stem in the 3<sup>rd</sup> person forms is probably due to a rule of default M insertion.

#### 2.4.3 Causative + L

There are three verbs that seem to be in this class, though we don't have the full paradigms for them

/-di-laa/ 'to raise (animals, primarily chickens)'

bè-dì-láà-yà'-nà 'I raised it.'  
 bè-dì-làà-nà-nà 'He raised it.'

/-di-tuu/ 'to finish'

bè-dì-tùù-yà'-nà 'I finished it.'  
 bè-dì-tùù-nà-nà 'He finished it.'

/-di-yaa/ 'to finish (food)'

bè-dì-yàà-yà'-nà 'I finished it (food).'  
 bè-dì-yàà-nà-nà 'He finished it (food).' 4:46

### 3 Intransitive verbs

The following paradigms seem to show that in the intransitive stems, the 1<sup>st</sup> person lacks a floating H. (This is the analysis that Bickmore and Broadwell (1998) proposed for SJZ).

27)

-biththa-, Ø L 'get wet'	Completive	Potential
1 <sup>st</sup> person	gù-bìththà-yà' 'I got wet'	í-bíththà-yà' 'I will get wet.'
3 <sup>rd</sup> person	gù-bìththà-nà 'He got wet.'	í-bíththà-nà 'He will get wet.'

28)

-neesii-, ØM 'to submerge oneself'	Completive	Habitual	Potential
1 <sup>st</sup> person	bì-nèèsii-ya'	ri-neesii-ya'	í-néèsii-ya'
3 <sup>rd</sup> person	bì-nèèsii-na	ri-neesii-na	í-néèsii-na

#### 4 Effects of the interrogative H tone

Interrogative H tone attaches to the left edge of some syntactic constituent (which one is still to be determined). So far we have determined that it can fall on the verb or on the preverbal elements *àbí* ‘not’, *nùyá* ‘someone’, and *tùtèbá* ‘often’. When a preverbal subject is present, the interrogative H does not fall on the subject.

- 29) Àbí bé-xatta'-yà'-nà.  
neg com-iron-1s-3s  
‘I didn’t iron it.’
- 30) ¿Ábí bé-xatta'-yà'-nà?<sup>3</sup>  
Q-neg com-iron-1s-3s  
‘Didn’t I iron it?’
- 31) Juán-nà bè-dì-bìsi-na-nà.  
Juan-dem com-cs-dry-3-3  
‘Juan dried it.’
- 32) ¿Juán-nà bé-dì-bìsi-na-nà?  
Juan-dem Q:com-cs-dry-3-3  
‘Did Juan dry it?’
- 33) ¿Gú-di-biththà-yà'-nà?  
Q:pot-cs-wet-1s-3s  
‘Will I wet it?’
- 34) ¿Ìntè gú-di-biththà-yà'-nà?  
I Q:pot-cs-wet-1s-3s  
‘Will I wet it?’

When attached to the the verb, it has the effect of a.) deleting the tone of the aspect prefix, and b.) suppressing the floating H tone associated with the first person.

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<sup>3</sup> This form needs to be reheard. If the spreading H does not suppress the 1<sup>st</sup> person H, then we expect ¿Ábí bé-xáttá'-yà'-nà?.

When there is an interrogative H tone, the aspect tone seems to be simply deleted. Note that although the verb has a free first syllable, the tone doesn't dock there. (This may contrast with the H spread, which seems to involve delinking, rather than deletion) :

35)

-xatta', ØM 'to iron' planchar	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-xáttá'-yá'-nà I ironed it. ¿bé-xatta'-nà-nà? Did I iron it?	ru-xáttá'-yá'-nà I am ironing it. ¿rú-xatta'-nà-nà? Am I ironing it?	gú-xáttá'-yá'-nà I will iron it. ¿gú-xatta'-yà-nà? Will I iron it?
3 <sup>rd</sup> person	bè-xáttá'-nà-nà He ironed it. ¿bé-xatta'-nà-nà? Did he iron it?	ru-xáttá'-nà-nà He is ironing it. ¿rú-xatta'-nà-nà? Is he ironing it?	gú-xáttá'-nà-nà He will iron it. ¿gú-xatta'-nà-nà? Will he iron it?

36)

-daaga-, LL 'to run into'	Completive	Habitual	Potential
1 <sup>st</sup> person	bè-dáàgà-yà'-nà ¿bé-dààgà-yà'- nà? I ran into him.	ru-dáàgà-yà'-nà ¿rú-dààgà-yà'-nà? I am running into him.	gú-dáàgà-yà'-nà ¿gú-dààgà-yà'-nà? I will run into him.
3 <sup>rd</sup> person	bè-dáàgà-nà-nà ¿bé-dààgà-nà-nà? He ran into him.	ru-dáàgà-nà-nà ¿rú-dààgà-nà-nà? He is running into him.	gú-dáàgà-nà-nà ¿gú-dààgà-nà-nà? He will run into him.

The following paradigm may show an OCP effect. It appears that the interrogative H triggers deletion of the lexical H tone of the verb stem. Since the interrogative H doesn't spread, we get default M on the stem-initial syllable.

37)

-xu'ni-, HM 'to wrinkle' arrugar	Completive	Habitual	Potential



- 42) bè-cátsi-ya'-nà                    'I hid it.'  
com-hide-1s-3
- 43) bè-cátsi-xiá-yà'-nà.                'I hid it quickly.'  
com-hide-quick-1s-3

## 5.2 /-ní/ 'emphatic'

The semantics of this suffix need more attention. Sometimes it seems to translate as 'really'; othertimes as implying a completely affected object/theme. It has a H tone, and this spreads one syllable to the right, via the already well-motivated rule of Rightward H/M spread.

- 45) Gù-lè'è-nà-nà.                    'He licked it up.'  
com-lick-3-3
- 46) Gù-lè'è-ní-ná-nà.                'He licked it all up.'  
com-lick-emph-3-3

## 5.3 /-gwá-/ 'also'

There aren't many recordings of this suffix, but it seems to be like /-ní-/ in its tonal effects:

- 47) bè-néèsi-gwá-yá'-nà                'I also submerged him.'  
com-submerge-also-1s-3

## 6 Non-aspectual prefixes

### 6.1 /-di-/ 'repetitive'

This prefix is seen in a few examples, and seems to be toneless

- 48) bè-dì-gwí'yà-yà'-nà                'I gave him something to drink again.'  
com-rep-give:to drink:1s-3s
- 49) gú-dí-gwī'yà-yà'-nà.                'I will give him something to drink again.' 4:47  
pot-rep-give:to drink-1s-3s

### 6.2 /-di/ 'causative'

See examples of this above. In general, this causative doesn't seem very productive. It relates causative/inchoative pairs like 'be wet/get wet'. It is also toneless, like the repetitive /-di-/.

## 7 Preverbal elements that spread a H tone onto the verb

Certain preverbal elements (including at least àbí(di) 'not', tùtèbá 'often', ànú(di) 'nobody,

nothing', *nùyá* 'someone', and *nàyá* 'yesterday') that end in a H tone spread this H onto the initial syllable of the following verb. The following forms show us two things:

a.) Suppression of the 1<sup>st</sup> person floating H is not as general as we previously thought. The right generalization seems to be that 1<sup>st</sup> person H is suppressed when the syllable before the stem is H toned. Contrast *àbí bè-di-bìsì-yà'-nà* 'I did not dry it' with *àbí bè-dààti'-nà-nà* 'I did not mix it up.' We can see this from the contour tones on the 1<sup>st</sup> person completive negative. [This point substantially clarified by Jie's 11/12/98 session.] We now see this as an effect related to the OCP.

There is some evidence that Ignacio and Margarita differ on this point, however:

50) *àbí bé-di-bíthtà-yà'-nà* (Ignacio) 'I didn't wet it.'  
neg com-caus-wet-1s-3s

*àbí bé-di-bíthtà-yà'-nà* (Margarita) 'I didn't wet it.' 4:17  
neg com-caus-wet-1s-3s

b.) spread H seems to delink the aspect tone, rather than deleting it. See the contrast between the tones on the causative /-di-/ in the negative forms below.

51)

-daati-, LM 'to mix up ingredients for bread'	Completive	Habitual	Potential
1 <sup>st</sup> person	<i>bè-dáàti'-yà'-nà</i> <i>àbí <b>bé-dààti'</b>-yà'-nà</i> I mixed/didn't mix it up. (H suppression)	<i>ru-dáàti'-yà'-nà</i> <i>àbí rú-dààti'-yà'-nà</i> I am (not) mixing it up.	<i>gú-dáàti'-yà'-nà</i> <i>àbí gú-dáàti'-yà'-nà</i> I will (not) wrinkle it.

52)

-di-bisi- 'to dry 'secar'	Completive	Potential

1 <sup>st</sup> person	bè-dì-bìisi-yà'-nà 'I dried it' àbí bé-dì-bìisi-yà'-nà 'I didn't dry it' (no H suppression)	gú-dí-bìisi-ya'-nà 'I will dry it' àbí gú-dí-bìisi-ya'-nà 'I won't dry it'
3 <sup>rd</sup> person	bè-dì-bìisi-na-nà 'He dried it'	gú-dí-bìisi-na-nà 'He will dry it'

Contrasts showing H spreading:

- 53) Làànà gù-tòò-nà bìiyá.  
he com-eat-3 something  
'He ate something.' 4:21
- 54) Ànú gú-tòò-nà-nà.  
nobody com-eat-3-3  
'Nobody ate it.' 4:21
- 55) Nàyá Felipe-a' bè-gwia-na-nte.  
yest. F-dem com-see-3-1s  
'Yesterday, Felipe saw me.'
- 56) Felipe-a' nàyá bé-gwia-na-nte.  
F-dem yest. com-see-3-1s  
'Felipe saw me yesterday.' (Jie's notes)

This rule can also spread a H tone onto words other than verbs:

- 57) Nàyá íntè bè-gwíà-yà' bàté tù gàyùà bènné'.  
yest I com-see-1s more one hundred people  
'Yesterday I saw more than one hundred people.' 4:48

*Íntè* 'I' is normally LL, but in this example is HL, due to rightward spreading from *nàyá*.

## 8 Verbs with incorporated N roots

In Sierra Juárez Zapotec, verbs with incorporated N roots often show multiple effects of the 1<sup>st</sup>

person floating H. This does not seem to be the case in MacZ, where the 1<sup>st</sup> person H shows up on its normal place on the verb:

- 58) Bè-chùllà-làssi'-ni. 'He blacked out.'  
com-dark-self-3poss
- 59) Bè-chùllà-làssi'-yà' 'I blacked out.'  
com-dark-self-1s 4:23
- 60) Bè-dià-lóó-nì 'He crossed himself.'  
com-verb?-face-3
- 61) Bè-dià-lòò-yà' 'I crossed myself.'  
com-verb?-face-1s 4:21

Notice that these verbs are inflected with the 3<sup>rd</sup> person nominal possession marker, not the ordinary 3<sup>rd</sup> person verbal /-nà/. This suggests that possibly they should be treated as 2 words. But if they are two words, then the first word in (61) shows the tonal effect of the N possessor. Or perhaps there is an implicit 1s suffix on the first word, where the segmental (but not tonal) portion has been deleted?

- 62) bè-dià-yà' lò-yà'

The single word vs. double word status of these combinations is problematic. Adverbial suffixes occur between the two roots:

- 63) Bè-chùllà-xià lassi'-yà' 'I blacked out quickly.'  
com-dark-quick self-1s

Most verbs with incorporated N roots seem to intransitive psych/experiencer verbs that don't show 1<sup>st</sup> person floating H. Of this type are /-bisi-lassi'/ 'to get thirsty', /-dacca-lassi'/ 'to be happy', /-ganna-lassi'/ 'to be seasick'.

## 9 Irregular verbs

There are more that I have not listed here, including at least the verb 'to say'.

### 9.1 /-o-, -uto-/ 'to eat'

- 64)

-o-, -uto- 'eat' 'comer'	Completive	Habitual	Potential
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1 <sup>st</sup> person	g-ú <sub>tó</sub> -yá'-nà 'I ate it'	r-ó-yá'-nà 'I am eating it'	g-ó-yá'-nà 'I will eat it'
3 <sup>rd</sup> person	g-ú <sub>tó</sub> -nà-nà 'He ate it'	r-ò-nà-nà 'He is eating it'	g-ó-nà-nà 'He will eat it'

## 9.2 /-in(i)/ 'to do'

This verb is very irregular tonally. The best analysis seems to be that the root is /-in/, with a L tone. For some reason, in the first person singular the tones of the aspect prefix are deleted, and only the root L surfaces. In the first person plural, the root L is deleted and only the aspect tone surfaces. In the other persons, both tones surface.

	Completive	Habitual	Potential
1sg	bèèn-yá'-nà 'I did it.'	rùùn-yá'-nà 'I'm doing it.'	gùùn-yá'-nà 'I will do it.'
2sg	bèèn-lù'-nà 'You did it.'	rúùn-lù'-nà 'You're doing it.'	gúùn-lù'-nà 'You will do it.'
3sg	bèìn-nà-nà 'He did it.'	rúìn-nà-nà 'He's doing it.'	gúìn-nà-nà 'He will do it.'
1pl	bèèn-riù-nà 'We did it.'	ruun-riù-nà 'We're doing it.'	gúùn-riù-nà 'We will do it.'
2pl	bèèn-lí-ná 'Y'all did it.'	rúùn-lí-ná 'Y'all are doing it.'	gúùn-lí-ná 'Y'all will do it.'
3pl	bèèn-cànà-nà 'They did it.'	rúùn-cànà-nà 'They are doing it.'	gúùn-cànà-nà 'They will do it.'

Another interesting property of this set is the tones on the 2pl habitual and potential suffixes. /-lí/, the 2pl suffix, has a H tone, and normally spreads this tone one syllable to the right (Rightward H spread). In these forms, however, it looks like Rightward H is followed by Contour Realignment.

When the verb stem is not followed by a suffix, the final /i/ surfaces:

- 65) Bèni Juán-nà-nà  
com:do John-3s-3s  
  
'John did it.' 4:18

## 9.3 /-duan(i)/ 'to sit'

This verb is irregular in that it normally appears without the /ru- ~ ri-/ prefix:

	Completive	Habitual	Potential
1 <sup>st</sup> person	gù-dùàn-yá' 'I sat.'	dùàn-yá' 'I'm sitting.'	
3 <sup>rd</sup> person	gù-dùáyn-ná 'He sat.'	dùáyn-ná 'He's sitting.'	thúáy-nà 'He will sit.'

I believe that the H tone that surfaces on the first pronominal suffix is a vestige of the tone on the final /i/ of the stem. This vowel surfaces when not followed by a suffix:

- 66) Gù-dùàní Juán-nà lòò siyá-ní.  
com-sit John-3s on chair-?

'John sat on the chair.' 4:27

#### 9.4 /-uti, -ati/ 'to die'

There appear to be two allomorphs of the stem: *-uti* and *-ati*.

67)

-uti/-ati- 'to die' 'morirse'	Completive	Habitual	Potential
1 <sup>st</sup> person	g-úútí-yà'	r-áátí-yà'	g-áátí-yà'
3 <sup>rd</sup> person	g-úútí-nà	r-áátí-nà	g-áátí-nà

The tones of aspectual prefixes seem to have been deleted here, along with the vowels.

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