

### **Chapter 3: Phonology**

This chapter presents the phoneme inventory of MIG Zoque, notes about prosody, including stress and syllable structure, and the morphophonological processes that occur.

The phonology of MIG Zoque is typical of a MesoAmerican language, sharing nearly all of the traits described for the area in Cambell, Kaufman, and Smith-Stark, 1986 (pp. 537-544). The phoneme inventory does not include any contrastive (underlying) voiced stops or fricatives. There are no uvular, aspirated, or implosive consonants, and there are no retroflexed sounds (apart from Spanish loan words). The vowel inventory includes the 'sixth' vowel /ə/, discussed below. There are no tones, and there are no vowel sequences, other than those produced by the process of glide deletion (3.3.10).

MIG Zoque has some phonological processes that are similar to those of many other MesoAmerican languages: voicing of obstruents after sonorants, fixed stress (on the penultimate syllable), and a limited form of vowel harmony. MIG Zoque does not have the striking metathesis process of Copainlá (Chiapas) Zoque (Wonderley, 1951:117-118), in which glides and glottal stops metathesize with obstruents and sonorant consonants, respectively. The most unusual process in MIG Zoque is the gemination of final consonants discussed in section 3.3.1. This process does not occur in either Copainlá Zoque or in Sierra Popoluca (Veracruz) Zoque (Himes, 1997).

### 3.1. Phonemes

MIG Zoque has a rather small phonemic inventory, consisting of 12 consonants and 6 vowels. The first two charts shown below (tables 3.1 and 3.2) include only the native phonemes. The third one (table 3.3), gives the set of non-native consonants that appear in words in the MIG Zoque lexicon. Some of these appear in Zoque words, derived by regular phonological processes (discussed in the subsections below); others were borrowed along with Spanish loan words.

	labial	alveolar	palatal	velar	glottal
<b>voiceless stop</b>	p	t		k	ʔ
<b>nasal</b>	m	n		ŋ	
<b>fricative</b>			š		h
<b>affricate</b>		c			
<b>glide</b>			y	w	

**Table 3.1. MIG Zoque consonant inventory**

	front	central	back
<b>high</b>	i		u
<b>mid</b>	e	ə	o
<b>low</b>		a	

**Table 3.2. MIG Zoque vowel inventory**

	<b>labial</b>	<b>alveolar</b>	<b>palatal</b>	<b>velar</b>
<b>voiced stop</b>	b	d		g
<b>fricative</b>	f	s		
<b>affricate</b>			č	
<b>liquid</b>		l, r		

**Table 3.3. Borrowed or derived consonants that appear in Zoque words**

The voiceless alveolar affricate /c/ (the sound at the beginning of the word 'tsunami', functions as part of the natural class of voiceless consonants, with respect to syllable structure (section 3.2.2).

Voiced consonants appear (a) at the beginning of pronouns, deictics, and a few other function words, and (b) word-internally after the operation of a voicing rule. The affricate /č/ occurs as the result of a morphophonological process (section 3.3.6) and in some loan words. The fricatives /s/ and /f/ and the liquids /l/ and /r/ appear in only a few odd words of unknown origin, affective (sound symbolism) verbs (section 4.1.4), and Spanish loan words.

/ə/ in MIG Zoque is a mid back unrounded vowel. In the other MZ languages, including MAR Zoque, the "sixth vowel" is typically a high back unrounded vowel, /ü/. Lengthened vowels may result from syllable shape or from syllable deletion (section 3.3.9), but there is no underlying phonemic contrast in vowel length.

## 3.2. Prosody

### 3.2.1. Stress

MIG Zoque words have primary stress on the penultimate syllable. Final stress (which will always be marked with an accent in the examples) may arise for one of two reasons: the word is a loan word from Spanish, borrowed with the original stress intact; or, two syllables have been collapsed by a morphophonological rule (section 3.3.8). In some cases this contraction may have occurred at an earlier stage of the language, but it also remains as an ongoing process.

The first example in (3.1) is of a word with regular, penultimate stress, which is predictable and therefore not marked. Example (ii) is a Spanish loan word borrowed with the original stress intact. Example (iii) is a MIG Zoque word, whose irregular final stress developed at an earlier stage of the language. In example (iv), the measure suffix *-náŋ* carries its own stress. It is usually word-final (section 7.2.3). This morpheme is analyzed as having two vowels underlyingly, which contract by the rule discussed in section 3.3.8 to yield a single, stressed, syllable<sup>1</sup>. Example (v) illustrates this process more clearly: the irregular final stress is the result of the contraction of two syllables at the end of the word.

(3.1)

(i)     hukutək

(ii)    ʔanmál

---

<sup>1</sup> Historical reconstruction is beyond the scope of this synchronic study of MIG Zoque grammar. However, I need to look back in time for this suffix and for a few similar suffixes used with deictic roots (section 4.6) in order to account for the irregular stress pattern.

	'fire'		'animal'
(iii)	cikwít 'basket'	(iv)	šuʔknáŋ šuʔk.naaŋ kiss.MEAS 'kiss'
(v)	nəktəpám 0 nək.təʔ-pa+ʔam 3A go.want-INC+NOW 'He wants to go now.'		

### 3.2.2. Syllable structure

The following syllable shapes are allowed in MIG Zoque:

(i)	CV		bi	'the'
(ii)	CVC		tək	'house'
(iii)	CVʔC	(where C = /p,t,k,c/)	haʔp-	'to crush'
(iv)	CVCš	(where C = /p,k/)	ʔəkš-	'to shell corn'
(v)	CVʔCš	(where C = /p,k/)	hoʔpš-	'to muzzle'
(vi)	CVCʔ	(where C = /m,n,ŋ,y/)	ʔawinʔ	'brother'

In general, syllables are required to begin with a consonant, as in the other Mixe-Zoquean languages (Kaufman, p.c.). There are only a small number of inflectional morphemes that are vowel-initial, such as the reciprocal suffix -A-. These will acquire an onset from the coda of the preceding syllable. The vast majority of MIG Zoque syllables are CV or CVC.

### 3.3. Morphophonological processes

When the completive suffix *-wə* or a glottal stop initial suffix (*-ʔəy*, passive *-ʔəm*, or antipassive *-ʔoy*) is attached to a stem ending in a consonant, the */w/* or */ʔ/* disappears and the final consonant is geminated. This does not occur if the stem-final coda consists of a *(ʔ)Cš* cluster. In that case, the */w/* or */ʔ/* is simply deleted. (More examples illustrating the gemination caused by each of these suffixes can be seen in sections 5.2.1, 6.3.3, 6.3.4, and 7.1.3.)

$$\begin{array}{llll} (1) & \{\mathcal{I}, \mathbf{w}\} & \longrightarrow & \mathbf{C}_1 \quad / \quad \mathbf{V}(\mathcal{I}) \mathbf{C}_1 \text{ ---} \\ (2) & \{\mathcal{I}, \mathbf{w}\} & \longrightarrow & 0 \quad / \quad \mathbf{V}(\mathcal{I}) \mathbf{C}_1 \text{ š ---} \end{array}$$

(lexicon)

30

'It bit him.'

(lexicon)

- (iii) ʔəy yakhəʔkšə  
 ʔəy+ yak.həʔkš-wə  
 3E+ CAUS.exhaust-COM (lexicon)  
 'She exhausted it.'
- (iv) ʔəy cukšə  
 ʔəy+ cukš-wə  
 3E+ pinch-COM  
 'He pinched it.'  
 (lexicon)
- (v) behča cəmmoba  
 behča 0 cəm.ʔoy-pa  
 horse 3A carry.ANTIP-INC  
 'The horses will carry (the load).' (ZOH1R24 090)

There are many tokens in the corpus showing that the depositive suffix wəy does not always have this effect; that is, the /w/ is clearly audible. There are also tokens from several consultants (particularly older men) in which a /ʔ/ fails to induce gemination, particularly after /ŋ/, and sometimes also after /y/ and /k/. There are no exceptions to the gemination induced by the completive suffix -wə.

- (3.3)
- (i) ʔəy cactuktukwəyyə  
 ʔəy+ cac=tuk.tuk.wəy-wə  
 3E+ break=cut.cut.DEPOS-COM (lexicon)  
 'She broke it in pieces.'
- (ii) ʔəy ʔotonʔoyyə  
 ʔəy+ ʔoton.ʔoy-wə  
 3E+ talk.ANTIP-COM (lexicon)  
 'He spoke.'



### 3.3.2. Vowel harmony

There are five vowel-initial suffixes in MIG Zoque:

1. result noun -a/-ə (~ -aʔ/-əʔ);
2. participle -i/-e (~ -iʔ/-eʔ);
3. indefinite -anəm/-ənəm;
4. imperative -aʔ/-əʔ;
5. reciprocal -ə/-a.

Each has two basic alternations, in which the choice of vowel depends on the height of the preceding vowel. /ə/ must be classified as a high vowel for this system, although phonetically it is a mid vowel. The 'sixth vowel' in the other Mixe-Zoquean languages is the high central vowel /ü/; the MIG Zoque vowel harmony system conforms with that inventory. So, the set of high vowels for these rules is {/i/, /u/, /ə/}. The mid vowels are {/e/, /o/}. The set of non-mid vowels is {/i/, /u/, /ə/, /a/}.

There are two rules:

- (1)    ə ----> a    / V<sub>[mid]</sub> C \_\_\_\_\_
- (2)    e ----> i    / V<sub>[high]</sub> C \_\_\_\_\_

The morpheme breakdowns in data examples use the symbol A to indicate a vowel that appears on the surface as /a/ or /ə/; the underlying vowel is /ə/. For example, the imperative is represented as -Aʔ. The following examples illustrate the operation of rule (1).

(3.4)

- |   |   |
|---|---|
| (i) weha?<br>weh.A?<br>shout.IMPV<br>'call him!'                              | (ii) nema?<br>nem.A?<br>flame.NOM2<br>'spark'   |
| (iii) ?opša?<br>?opš.A?<br>foam.NOM2<br>'foam'                                | (iv) ?o?ka?<br>?o?k.A?<br>calm_down.NOM2<br>'stillness'                                     |
| (v) ?inə?<br>?in.A?<br>get_cloudy.NOM2<br>'cloud'                             | (vi) hipšə?<br>hipš.A?<br>get_burned.NOM2<br>'burned; overcooked'                           |
| (vii) təcənəmmám<br>0 təc.Anəm-wə+?am<br>3A be_dry.INDEF-COM+NOW<br>'drought' | (viii) hə?kšə ?əm cəkə?<br>hə?kš-wə ?əm+ cək-A?<br>hurry-COM 2E+ do-IMPV<br>'hurry! do it!' |
| (ix) hehanəmpa<br>0 heh.Anəm-pa<br>3A live.INDEF-INC<br>'they live'           | (x) ?acə?<br>?a?c.A?<br>burn.NOM2<br>'fire'   |
| (xi) ?okku?pšə?<br>?ok.ʔu?pš.A?<br>DOWN.clouds_rise.NOM2<br>'southern clouds' | (xii) hupə?<br>hup.A?<br>pull.IMPV<br>'pull!' (ZOH1R25 154)                                 |

The morpheme breakdowns in data examples use the symbol E to indicate a vowel that appears on the surface as /e/ or /i/; the underlying form is /e/. The dependent suffix is represented as -E. The following examples illustrate the operation of rule (2).

(3.5)

- |  |   |
|--|---|
| <p>(i) huki<br/>huk.E<br/>smoke.NOM3<br/>'cigarette'</p>               | <p>(ii) ?anemukši<br/>?an.E=mukš.E<br/>heat.NOM3=fold.NOM3<br/>'filled (folded) tortilla'</p>   |
| <p>(iii) ?aŋwiti?<br/>?aŋ.wit.E?<br/>MOUTH.walk.NOM3<br/>'visitor'</p> | <p>(iv) hampici<br/>ham=pic.E<br/>lime=put_corn_in_lime.NOM2<br/>'corn with lime'</p>           |
| <p>(v) ?əhəhi?<br/>?əhəh.E?<br/>whimper.NOM2<br/>'whimper'</p>         | <p>(vi) kəʔti?<br/>kəʔt.E?<br/>grind.NOM2<br/>'ground'</p>                                      |
| <p>(vii) ?ece?<br/>?ec.E?<br/>dance.NOM2<br/>'dancer'</p>              | <p>(viii) ?ukheye?<br/>?uk=hey.E?<br/>drink=stir.NOM2<br/>'pozole' (a thick corn<br/>drink)</p> |
| <p>(ix) ?ohe?<br/>?oh.E?<br/>cough.NOM3<br/>'cough'</p>                | <p>(x) kokši?<br/>kokš.E?<br/>resound.NOM2<br/>'the sound of joints cracking'</p>               |
| <p>(xi) hape<br/>haʔp.E<br/>break.NOM3<br/>'broken'</p>                | <p>(xii) nakše?<br/>nakš.E?<br/>pound.NOM2<br/>'pounded'</p>                                    |

There are a few lexemes that appear to be exceptions to these harmony rules. Some of them look intriguingly like the result of a total harmony rule that would have applied in an earlier stage of the language. There aren't very many of these, indicating that this is not an ongoing process.

(3.6)

(i)     maki  
       mak.E  
       fish\_with\_a\_net.NOM3  
       'net'

(ii)    weʔči  
         weʔč.E  
         curve.NOM3  
         'crooked'

(iii)   tupuʔ  
         tuʔp.X  
         crumble.X  
         'piece'

(iv)    nocoʔ  
         noʔc.X  
         split.X  
         'crevice'

### 3.3.3. Alternation of /ŋ/ and /w/

/ŋ/ and /w/ appear in mutually exclusive contexts: there are no syllables that begin with /ŋ/ and none that end with /w/. An underlying /w/ becomes /ŋ/ at the end of a syllable. When one of the vowel-initial suffixes is attached to a stem ending in /ŋ/, the underlying /w/ surfaces due to the re-syllabification of the resulting word.

(3.7)

(i)     hopowe  
       ho.poŋ.E  
       IN.burn.NOM3  
       'fire'

(ii)    way kəwiʔ  
         way kəŋ.Eʔ  
         hair paint.NOM3  
         'gray-haired'

### 3.3.4. Voice assimilation

Generally, intervocalic stops are voiceless, but the voiceless stop consonants /p,t,k/ may become voiced when surrounded by members from the set {vowels, nasals, /y/}. This process is variable, depending on speaker, rate and carefulness of speech, and on the semantic prominence of the morpheme in question. Consonants of verb roots, for example, are rarely affected (3.8 i), nor are the instrumental suffix -kuy? (i) or incompletive -pa (ii). Suffixes like repetitive -ke?t (iii) and first/second plural -tam (iv) are always voiced in such contexts.

(3.8)

- (i)    ʔəy hupnəkkə ʔəy caŋkuygəši  
       ʔəy+ hup=nək-wə ʔəy+ caŋ.kuy?+gəši  
       3E+ pull=go-COM 3E+ hit.INSTR1+LOC5  
       'She took him by the hand and went along.' (lexicon)
  
- (ii)   ʔən cahcoŋpan toto?  
       ʔən+ cah=coŋ-pa ʔən+ toto?  
       1E+ glue=join-INC 1E+ paper  
       'I'm going to glue my paper together.' (elicited)
  
- (iii)   picəmgəʔttə ʔot tumə  
       0 picəmə.keʔt-wə ʔotro tumə?  
       3A leave.REPET-COM another one  
       'Another one came out.' (ZOH1R18 319)
  
- (iv)   ʔawindəkka miš ʔəm witudampa  
       ʔawin+dəkkay miš ʔəm+ witu?-tam-pa  
       sibling +NPL 2Prn 2A+ return-1/2PL-INC  
       'Brothers, you're going to go back.' (ZOH1R12 165)

### 3.3.5. Glide absorption

When a suffix ending in /y/ (indirective -hay, assumptive -ney, antipassive -ʔoy, or verbalizer -ʔəy) is followed by a suffix beginning with a voiceless stop, such as the incomplete -pa or repetitive -keʔt, the stop may be voiced (due to 3.3.4) and the glide deleted.

(3.9)

- (i) dəʃ ʔən ʔokcamməba  
 dəʃ ʔən+ ʔok.cam.ʔəy-pa  
 1Pm 1E+ DOWN.relate.SUF-INC  
 'I tell [the tale].'  
 (ZOH1R45 001)

- (ii) ʔaŋmayyobáʔ  
 ʔaŋ.may.ʔoy-pa+Vʔk  
 MOUTH.count.ANTIP-INC+REL  
 'teacher'  
 (lexicon)

- (iii) miš nəmhageʔttampa ke ʔaŋmaytammə ney ʔawinʔ  
 miš nəm.hay.keʔt-tam-pa ke ʔaŋ.may-tam-wə ney ʔawinʔ  
 1>2 say.APPL.REPET-1/2PL-INC that MOUTH.count-1/2PL-OPT our brother  
 'I say to you again that we should teach our brothers.'  
 (ZOH1R57 035)

- (iv) ʔun ʔokhoŋŋodammə ney ʔaŋpən  
 ʔu ʔən+ ʔok.hoŋ.ʔoy-tam-wə ney ʔaŋ=pən  
 NEGimpv 1E+ DOWN.get\_dizzy.ANTIP-1/2PL-COM our mouth=man  
 'Don't let us forget our language.'  
 (ZOH1R57 037)

Glide absorption is a variable process, varying according to speaker. Three of my male consultants (ages 38-60) always apply the rule; none of the

other consultants (including other older men) ever did. All the women said '-oypa' instead of '-oba'.

### 3.3.6. Affrication

When a verb stem ending with the alveolars /t/ or /c/ is followed by a morpheme beginning with /š/ (like the third person plural suffix -šuk), the result of the combination is the affricate /č/.

(3.10)

- (i)    ʔəy paʔčukkə tum ʔaŋmayyobáʔk pən  
       ʔəy+ paʔt-šuk-wə tum ʔaŋ.may.ʔoy-pa+Vʔk       pən  
       3E+ meet-3Pl-COM one MOUTH.count.ANTIP-INC+REL man  
       'They met a teacher.' (ZOH1R43 005)
- (ii)   yeʔčukkə  
       0 yeʔc-šuk-wə  
       3A arrive-3Pl-COM  
       'They arrived.' (ZOH1R11 003)

### 3.3.7. Glottal stop deletion

There are three contexts in which a glottal stop is deleted: (a) between vowels; (b) syllable-finally before a C-initial syllable; and (c) word-finally before another word (not utterance-finally).

The (a) case, intervocalic deletion, is shown in (3.11). The final /ə/ in (i) first changes to an /a/ under the influence of the clitic syllable. Once the glottal stop has deleted, the two like vowels contract, as described in (3.3.8).

(i)      dey də minnám  
           dey də+ min-wə+ʔam  
           now 1A+ come-COM+NOW  
           'Now I have come.'

(ii) də nəkpám  
də+ nək-pa+ʔam  
1A+ go-INC+NOW  
'Now I'm going.'

The simple case for (b), syllable-final deletion, occurs when a glottal stop-final root such as təʔ-, 'to want' is followed by a consonant-initial morpheme, like a plural suffix. Remember that there aren't very many vowel-final morphemes in this language, and no vowel-final verb roots. When a morpheme-initial glottal stop fails to delete, it serves as evidence that the preceding morpheme does indeed end in a glottal stop. This is a useful diagnostic for determining the underlying shape of glottal stop-final verb roots, like təʔ-, 'to want', whose final consonant generally disappears in context.

(i) ʔən tədampa tamnə?  
ʔən+təʔ-tam-pa tamʔ=nə?  
1E+want-1/2PL-INC bitter=water  
'We want beer.'

(ii) yotecešukkə  
0 yoteʔ=ceʔ-šuk-wə  
3A clothes=wash-3PL-COM  
'They washed clothes.'  
(elicited)



- (iii)    təʔʔəmpáʔk  
           təʔ.ʔəm-pa+Vʔk  
           want.PASS-INC+REL  
           'a serviceable thing' (lexicon)
- (iv)    ʔəy məʔʔəyyə  
           ʔəy məʔ.ʔəy-wə  
           3E    wife.VERS2-COM  
           'He got married.' (lexicon)

The more interesting case appears when a vowel-initial suffix (see 3.3.2) attaches to a stem in the shape CVʔC. The word is re-syllabified so that the final C of the stem's coda becomes the onset of the suffix syllable. This leaves the glottal stop in syllable-final position, from which it is deleted.

- (3.13)
- |             |             |
|-------------|-------------|
| təki        | woke        |
| təʔk.E      | woʔk.E      |
| hiccup.NOM3 | scrape.NOM3 |
| 'hiccup'    | 'scraped'   |

### 3.3.8. Syllable contraction

When two vowels are juxtaposed, through deletion of a glottal stop (3.3.7) or some (unknown) historical process, they contract to form a single syllable. This is evident at the ends of words where the contraction produces an irregular primary stress on the final syllable. This is the result we would expect if stress were assigned to the penultimate syllable, according to the regular rule, and then the ultimate syllable is lost.

(3.14)

(i)     dey də minnám  
           dey də+ min-wə+ʔam  
           now 1A+ come-COM+NOW  
           'Now I have come.'

(ii)    kašnáŋ  
           kaš.naaŋ  
           step.MEAS  
           'step'

In example (3.14 i), the /ə/ of the completive suffix becomes an /a/, in harmony with the clitic vowel. Then the intervocalic glottal stop deletes, and then the vowels contract. The completive suffix syllable, which had the stress at the beginning of this process by the regular penultimate stress rule, keeps it. The vowel that survives the contraction is the one that had the stress, so the stress stays here instead of moving back to the preceding syllable (although in context, sometimes this final stress is very weak).

So, the rules apply in the following order:

(1)	də min-wə+ʔam
(2) stress assignment	də min-wə́+ʔam
(3) vowel harmony	də min-wá+ʔam
(4) glottal stop deletes	də min-wáam
(5) vowels contract	də min-wám
(6) gemination	də minnám

### 3.3.9. Syllable deletion

The final vowel of short words is optionally deleted in compounds or incorporation constructions. This happens most often with adjectives, which tend to have the shape CVCV(?). (A final glottal stop is deleted by the normal process.) In these cases, the initial vowel retains the length of a vowel in a stressed, open syllable, even though one might expect the word to be re-

syllabified, taking the onset of the deleted syllable for the coda of the remaining one, and thus shortening the vowel to the normal closed-syllable length.

I will mark these long vowels in the example data with a following ':' to make it easier to read the transcriptions as they are pronounced, and as a reminder that a syllable has been omitted. The same convention applies to entries and example sentences in the lexicon. This lengthening is not, however, in any way contrastive, and there are no prefixes or verb roots that might be confused with these shortened adjectives.

(3.15)

- (i) də wə:hpɪcəmhaɪyɔ  
də+ wəhə=ɪcəm.haɪ-wə  
1A+ good=leave.APPL-COM  
'Things turned out well for me.' (lexicon)
- (ii) ʔəy nɛ:ncəkəkəy wɪn  
ʔəy+ nɛnəʔ=cək-wə+ʔəy wɪn  
3E+ bad=do-COM+3E REFL  
'She took her clothes off.' (lexicon)

### 3.3.10. Glide deletion

There are no underlying sequences of vowels in MIG Zoque (nor in any of the Mixe-Zoquean languages generally.) However, under certain circumstances the glides /y/ and /w/ are deleted intervocalically, thus producing a vowel sequence. Basically, when a morpheme whose coda consists of a glide is suffixed by a vowel-initial morpheme, and the two vowels meet the requirements discussed here shortly, the glide will be deleted. The set of vowel initial morphemes is given in section 3.3.2. In these cases, the two vowels do not then contract according to the rule discussed in 3.3.8, which applies to vowels that are identical (after assimilation applies).

There are two separate rules. /y/ is deleted when it appears in coda position either before or after a front vowel. (The front vowels are /i/ and /e/.) The one exception is that it is not deleted between two /e/s. (I only have one example of this exception, shown in 3.16 vi.) The productive rule is thus:

y --> 0 / [i/, /u/, /o/, /ə/, /a/] \_\_\_\_\_ V<sub>[front]</sub>

(3.16)

(i)   ʔaŋkəi  
      ʔaŋ.kəy.E  
      MOUTH.carry\_flat.NOM3  
      'covered'

(ii)   huptui  
       hup=tuy.E  
       pull=stretch.NOM3  
       'something stretched out'

(iii)   cəkhae  
       cək.hay.E  
       do.APPL.NOM3  
       'witchcraft'

(iv)   tokoe?  
       tokoy.E?  
       be\_lost.NOM3  
       'something lost'

- |  |  |
|--|--|
| (v)    kae<br>kaye<br>street<br>'street' (Sp. <i>calle</i> ) | (vi)    ?ukhhey<br>?uk=hey.E<br>drink=beat.NOM3<br>'pozole' (a corn drink) |
|--|--|

There are four monomorphemic lexical items in the corpus that contain vowel sequences from between which a /y/ (examples 3.17 i-ii) or a /ʔ/ (examples iii-iv) might have been deleted at some earlier stage of the language. Note that in the (iii) and (iv), the 'front' vowel that supplies the appropriate context is /ə/. This is further evidence for the fact that this vowel functions in the MIG Zoque system as its correlate /ü/ does in the other MZ languages. The second vowel in these words is always strongly laryngealized.

- |                                       |                          |
|---------------------------------------|--------------------------|
| (3.17)                                |                          |
| (i)    mea<br>'sea' (Sp. <i>mar</i> ) | (ii)    neaʔ<br>'wall'   |
| (iii)    məaʔ<br>'deer'               | (iv)    kəak<br>'sandal' |

/w/ is deleted between an /o/ and an /e/ or an /a/. A syllable-final /w/ will normally appear on the surface as /ŋ/ (section 3.3.3). But when the /w/-final morpheme is followed by a vowel-initial suffix, the resulting stem is re-syllabified with /w/ as the onset of the added syllable. So, it ends up between the two vowels. The rule is this:

/w/ --> 0 / /o/<sup>3</sup> \_\_\_\_\_ [ /e/, /a/ ]

(3.18)

(i) wiki coa?  
wiki coŋ.A?  
finger join.NOM2  
'knuckles'

(ii) moeʔašpa  
0 moŋ.E=ʔaš-pa  
3A sleep.NOM3=open\_mouth-INC  
'She's yawning.'

I found only two exceptions to this rule in my corpus, shown in (3.19 i-ii). It should be noted that a /w/ occurring in the position in which this rule regularly applies is a rather subtle sound - it is quite possible that I simply heard these examples wrong, or that the glide was the result of the emphasis sometimes employed in citation speech. The rule does not apply to /w/ in syllable-initial position<sup>4</sup>, as can be seen in example (3.19 iii).

---

<sup>3</sup> I have no examples with a /u/ next to a /w/. It seems to be a strongly disfavored conjunction of sounds.

<sup>4</sup> There are no syllables in MIG Zoque with contiguous /y/ and /i/. There are verb roots that begin with /ye/, such as yem-, 'to fan', but none of these happen to appear in the corpus with the vowel-final prefixes ni- (PSE), ho- (INTO), or ko- (SOC).

(3.19)

- (i)    šowa?  
      a type of bird

- (ii)    towa?  
       toŋ.A?  
       blister.NOM2  
       'blister'

- (iii)    ʔən howanpa  
         ʔən+ ho.wan-pa  
         1E+    INTO.sing-INC  
         'I'm reading.'

There are four monomorphemic lexical items in the corpus that contain vowel sequences from between which a /w/ might have been deleted at an earlier stage of the language. Again, the second vowel in these words is strongly laryngealized.

(3.20)

- (i)    hoa?  
      'deep'

- (ii)    noa?  
       'canyon'

- (iii)    poa?  
      a type of tree

- (iv)    poe?  
       'sand'