

1. Description of phonemes
2. Syllable patterns
3. Distribution of phonemes

1. The oxchuc dialect of Tzeltal¹ has 25 segmental phonemes. There are

1. Tzeltal is a Mayan language spoken in Chiapas, Mexico. Although the phonemic system was analyzed by the late William Bentley during field trips to the Bachajón dialect between 1938 and 1941, the results were never published. This paper, which has followed leads offered by his materials and those of my colleague Marianna C. Slocum, is based on the highland dialect spoken in the region of Oxchuc. For certain differences between Oxchuc dialect and others, see fn. 2 below. According to the 1940 census, there are about 4,000 speakers of this dialect. An earlier draft of this paper was presented in connection with one of the courses at the Summer Institute of Linguistics at the University of Oklahoma in 1949. For a discussion of the major part of the morphology, see Marianna C. Slocum, *Tzeltal (Mayan) Noun and Verb Morphology*, IJAL 14.77-86 (1948).

20 consonants /p p' m w t t' n l c c' s r č č' š y k k' h ?/ and 5 vowels /i e a o u/.

1.1. Consonants are divided into five groups; members of each group are in general alike in point of articulation. Groups II and III, which are similar in point of articulation, differ as to their manner of articulation and their distribution in consonant clusters. The five horizontal groups are listed as follows:

Group I	(bilabial):	p	p'	m	w
Group II	(alveolar):	t	t'	n	l
Group III	(alveolar):	c	c'	s	r
Group IV	(alveo-palatal):	č	č'	š	y
Group V	(posterior):	k	k'	h	?

The consonants of each of the five groups are classified vertically into four series: voiceless aspirated, voiceless glottalized, voiced nasal or voiceless fricative, and a fourth series which includes orals, liquids, and glottal stop.

In group I, /p/ is a voiceless aspirated stop [p^h]: pat back. /p'/ is classified as a voiceless glottalized stop²; it has three allophones: [p'] before

2. The allophone [p'] is chosen to represent this phoneme since it completes the voiceless glottalized series, whereas the allophone [b] if chosen as a norm, would be the sole constituent of a voiced series and the voiceless glottalized series would be incomplete. In other dialects of Tzeltal, the characteristic Mayan pattern of asymmetry is seen; that is, in addition to full voiceless aspirated and voiceless glottalized series, there is one voiced stop phoneme, /b/. In the Oxchuc dialect, this stop has apparently fallen together with the voiceless bilabial glottalized stop /p'^h/, as they are found in mutually

exclusive positions; [p] occurs only utterance finally, [b] elsewhere: lap'ap' [la?bap'] 'sticky' (Oxchuc) = lap'ap' [lap'ap'] 'sticky' (Bachajon), p'alaš [balaš] 'bark' (Oxchuc) = p'alas [p'alas] 'bark' (Tenejapa); ya sp'ihtes [ya sp'ihtes] 'he teaches' (Oxchuc) = ya sp'ihtes [ya sp'ihtes] 'he teaches' (Tenejapa). For discussion of other Mayan languages, see Nadine Weathers, Tsotsil Phonemes with Special Reference to Allophones of B, IJAL 13.108-111 (1947); Julia Supple and Celia Douglass, Tojolobal (Mayan) Phonemes and Verb Morphology, IJAL 15.168-74 (1949); Raymond S. Larsen and Eunice V. Pike, Huasteco Intonations and Phonemes, Language 25.268-77 (1949).

silence (sap' 'early'); [ʔb] between vowels (cop'ol [ts^ho?bol] 'many'); [b] in other positions (p'e [be] 'road', pokp'il [p^hok^hbil] 'washed').

/m/ is a voiced nasal: me? 'mother'. /w/ is a voiced non-nasal; it has two allophones: [β] (flat fricative) in word final and as first member of a CC cluster (šiw [šip] 'he feared', ?awlił [ʔaβlił] 'seed'); [w] (non-syllabic vocoid) in other positions (siwon 'I feared'). [w] occurs in free fluctuation with [β] in word initial (wiš [wiš] ~ [βiš] 'older sister').

Groups II and III are both alveolar. The first three members of each group show vertical symmetries paralleling the members of the other groups. In addition, all four members of group II have certain distributional features in common that distinguish them from the members of group III. Specifically, the consonants of group II appear as second member of more than twice as many CC clusters as do the consonants of group III. Thus /l/ is included in II and /r/ in III on the basis of distributional frequency³ and phonetically,

3. Actual count of clusters: Group II: /t/ 18, /t'/ 7, /n/ 15, /l/ 17, total, 57; group III: /c/ 7, /c'/ 8, /s/ 7, /r/ 2, total 24. This count cannot be considered final because of the readiness with which morphemes may be combined to form new words; but would appear to be indicative of the general tendency.

also, /l/ belongs with group II in that its articulation is characterized by unbroken contact of the tongue tip throughout its duration as opposed to /r/ (group III) which is characterized by momentary or broken contact during part of its production.

In group II, /t/ is a voiceless aspirated stop [t^h]: tat 'father'. /t'/ is a voiceless glottalized stop: t'uł 'rabbit'. /n/ is a voiced nasal: na 'house'. /l/ is a voiced lateral: lot 'a lie'.

In group III, /c/ is a voiceless aspirated affricate: coc 'blanket'. /c'/ is a voiceless glottalized affricate: soc' 'bat'. /s/ is a voiceless sibilant: sik 'cold'. /r/ is a voiced flap: kerem 'boy'⁴.

4. /r/ occurs infrequently in words of native origin, mainly in descriptive words such as st'araret 'whirring of wings (humming bird). But note also curk'up' 'ripened by sun', kukureš 'cucayo (bird)', moroč 'curly', šparač ?ek' 'morning-star', wotoroš 'mint', seral 'scar', ššaret 'sound of snoring', šš'iriret 'drone sound (airplane)', t'art'on 'fluttering of wings', kurik 'let's go', p'urum 'speckled'. It occurs more commonly in Spanish loan words.

In group IV, /č/ is a voiceless aspirated affricate: čin 'a sore'. /č'/ is a voiceless glottalized affricate: č'in 'small'. /š/ is a voiceless sibilant: šik 'hawk'. /y/ is a voiced non-syllabic vocoid: yan 'another'.

In group V, /k/ is a voiceless aspirated stop [k^h]: sak 'white'. /k'/ is a voiceless glottalized stop: sak' 'it itches'. /h/ is a glottal spirant: hul 'he arrived'. /ʔ/ is a glottal stop: ʔul 'corn gruel'.

1.2. There are five vowel phonemes, all voiced. Front vowels are unrounded; back vowels are rounded. /i/ is high front, varying freely between close [i] and open [ɪ] in some words, and occurring as open [ɪ] before syllable final /š/ and in a few other situations⁵: pim 'thick', yištap' 'his toy'. /e/ is

5. While a clear-cut statement of complementary distribution is somewhat difficult to make, an analysis as separate phonemes seems considerably more difficult. In addition, native reaction, in terms of large numbers of native readers who pronounce [i] or [ɪ] unhesitatingly in the appropriate context, though both are written *i*, would indicate that these are a single phoneme.

mid open front [ɛ]: ɕ'en 'cave'. /a/ is low open, varying freely from unrounded central [ɑ] to rounded back [ɔ]: tah 'pine', ha? 'water'. /o/ is mid close back: pom 'incense'. /u/ is high close back: hun 'paper'.

1.3. One member of the Spanish phonemic system coexists with this phonemic system⁶. This is the voiced alveolar stop /d/ which occurs only in Spanish

6. For this type of analysis for other languages, see Charles C. Fries and Kenneth L. Pike, *Coexistent Phonemic Systems*, *Language* 25.25-50 (1949).

loan words and is found in the speech of some bilinguals (who for the most part are only partially bilingual). In the speech of monolinguals and some bilinguals, Spanish /d/ is borrowed as /t l r k/ and in one instance as /y/. The general pattern is /d/ → /t/ after another consonant (candela → kantela 'candle'); /d/ → /l/ word finally (almud → almul 'basket'); /d/ → /r/ between vowels (cadena → karena 'chain'). Before /r/, /d/ may be completely lost (compadre → kumpare 'co-godfather') or may become /k/ (Pedro → Pekro 'Peter'). Word initially, /d/ → /l r/, or may be lost (doctor → loktor 'doctor', domingo → rominko 'Sunday', dios → yos 'god').

1.4. Stress in Tzeltal may best be described in terms of stress groups. A stress group is a stretch of speech of two or more syllables with a unifying stress on the final syllable (indicated in this paper by acute accent over the vowel); and, in stress groups of more than two syllables, a secondary stress on the first or second syllable (indicated in this paper by grave accent over the vowel). Stressed syllables are normally higher in pitch than unstressed syllables.

In most cases, the stress group is synonymous with a pause group, defined as a stretch of speech between pauses. Since there are cases in which a stretch of speech may contain more than one stress group, though no actual pause is perceptible, it has seemed wise to describe the system in terms of stress groups rather than pause groups.

Stress groups of two syllables have the stress on the final syllable. This is called pattern I: patíł 'later', talón 'I came', pasp'íl 'made'.

Stress groups of three syllables have primary stress on the final syllable and a secondary stress on the initial syllable⁷. This is called pattern II:

7. Two words which do not always follow this pattern are: ʔilímp'a 'anger' and lok'ómp'a 'picture'. Also, in words of Spanish origin, the Spanish stress

pattern predominates in that Spanish words with penultimate stress normally do not shift stress. The native pattern has been heard on a few occasions: pésu ~ pesú 'peso', semána ~ sèmaná 'week', liméta ~ lìmetá 'bottle'.

màʔyuk yán 'there is no other', yàš talón 'I am coming', ʔiç'a tél 'bring it'.

Stress groups of more than three syllables may have the secondary stress on the second syllable, if the first syllable is innately unstressed⁸. This

8. These include: ya (tense-aspect particle), a- (personal pronoun) to (definite article).

is called pattern III: ya snàʔat te hmeʔé 'my mother remembers you', awàiyoh stohól 'you have heard', te tàk'iné 'the money'. Other stress groups of more than three syllables follow pattern II: hàʔto ta patil yaš talón 'I am not coming until later'. wèʔemat p'al íš? 'have you eaten already?'

In stress groups indicating surprise, the regular stress patterns occur with more emphatic stress and with added length on the stressed syllables: hiç katí 'that's so!', ʔupá 'ouch!'.

For special emphasis, pattern IV is used, which is a reversal of the regular stress patterns, with the primary stress occurring on the initial syllable: híç katì 'that's so!', ʔúpa 'ouch!'.

2. There are nine different syllable patterns which occur in various positions in words. Types CV and CVC are most frequent and may appear in initial, medial, and final position; examples show syllable division marked by (.).

CV: ne 'tail', p'a.lu.mi.lal 'world', pa.sa 'do it'.

CVC: hiç 'thus', hp'ih.tes.wa.neh 'teacher', č'ul.čan 'heaven'.

Syllable types V and VC occur in word medial and final positions; V (as the vowel a) also occurs initially.

V: a.na 'your house', ht.u.nel 'an official', le.a 'seek it'.

VC: č'u.um.p'il 'believed', mu.em 'kind of herb', co.ol 'squash, ca.el 'little'.

Syllable type CVCC occurs only in word initial position.

CVCC: naht' 'long', ʔahk'.nah 'he groaned'.

Syllable type hCVhC occurs only in monosyllabic words.

hCVhC: hcohp' 'group', hpehč' 'flat thing'.

Syllables beginning with CC or CCC occur only in word initial position; those with CCC are found only in Spanish loans or forms derived from them⁹.

9. In native words beginning with two consonants and in loan words beginning

ith three consonants, the initial consonant is always the bound morpheme - (pronominal affix, agentive affix), s- (pronominal affix), or s- (nominal reflex, verbal affix, adjectivizer).

CCV: hni.al 'my son-in-law', sne 'its tail'.

CCVC: skah 'because', htul 'one person', šmal 'maría'.

CCCVC: skrus 'his cross', spwer.sa.il 'its necessity'.

3. Distribution of phonemes.

3.1. Any consonant may occur in consonant position in the syllables CV and CVC; and any consonant except /r/ in consonant position of VC. Various examples of these may be found in the preceding paragraphs.

In final CC clusters, the first member is /h/¹⁰: k'ahk' 'fire'. The

10. Only one example has been observed in which the first consonant of a final CC cluster is other than h: ?anc 'woman'.

second member may be any consonant of the voiceless glottalized series¹¹:

11. In some other dialects the second member may also be any consonant of the voiceless aspirated series.

tahp' 'twenty', piht' 'abandon', pehc' 'trap', pahč' 'pineapple', kohk' 'deaf'.

In initial CC clusters the first member is /h s š/¹² in words of native

12. See fn. 9.

origin. The second member after /h/ may be any consonant other than /h/¹³ or

13. Identical consonants are reduced to a single consonant: /h/ plus hol → hol 'my head', /s/ plus sit → sit 'his eye', tat plus tik → tatik 'our father'. There are certain non-permitted sequences in any position: s → š /_č: *sčikin → ščikin 'his ear'; č,š - s/_c,s: *yaššikup' → *yassikup' → yasikup' 'becomes cold', *yaščahup' → yaschahup' 'becomes red', *yašč'ahan → 'bright blue'; n → m/_p': *k'atinp'ak → k'atimp'ak 'hell', *k'anp'on → k'amp'on 'ask for me'.

/r/: hpat 'my back', hp'et 'my debt', hme? 'my mother', htat' 'my father', ht'ul 'one drop', hni? 'my nose', hlumal 'my land', hcoc 'my blanket', hc'eeł 'my side', hsit 'my eye', hčikin 'my ear', hč'ič'el 'my blood', hšuhk'up' 'my elbow', hyame? 'my grandmother', hkup' 'my thigh', hk'u? 'my dress', h?anel 'fugitive'.

The second member after /s/ may be any consonant other than /s č š/(c/ may be preceded by /s/): spat 'his back', sp'et 'his debt', sme? 'his mother', swiš 'his sister', stenleh 'flat place', st'im 'his bow', sni? 'his nose', slumal 'his land', scoc 'his blanket', sc'eeł 'his side', srosa 'Rosa' (Spanish loan), sč'ič'el 'his blood', syame? 'his grandmother', skup' 'his grandmother', skup' 'his thigh', sk'u? 'his dress', shol 'his head', s?inasa 'Ignacia' (Spanish loan).

The second member after /š/ may be any consonant other than /s¹³ š c c'/: špečeč 'its nest', šp'itp' on 'pounding', šmočoh sba 'stuck together', šwohwon 'dog bark', štaluk 'he came', št'araret 'whirring', šnip'ip'et 'rippling', šlomlehan 'plodding in mud', ščikin 'his ear', šrominka 'Dominga' (Spanish loan), šč'uč' 'frog', škač 'horsefly', šk'elk'on 'loud crying', šhayhon 'unintelligible speech', š?uman 'road-runner'.

In medial CC clusters any consonant may theoretically occur as first or second member. However, not all such theoretically possible combinations have been attested; the following are illustrative: kancil 'my child', ?op'nah 'he coughed', nopcah 'he drew near', čepk'uh 'it dropped', šap'šon 'handful', c'ip'hel 'writing', ?ilimp'a 'anger', kaw?e 'jaw', tatmut 'rooster', šatlehal 'valley', patšuhk' 'neighbor', čanwinik 'eighty', cincon 'tinkling', tonkos 'tamale', šan?ič 'ant', čolp'eya 'explain it to him', holwic 'summit', melcah 'it was arranged', šilhom 'chair-bearer', ?awil?ak' 'hammock', ?esmah 'it increased', ?uskum 'herb', kušlehal 'life', koškon 'limping', sakwelan 'light color', sukleh 'cliff', tek'lan 'stand up', tohlina 'aim it', kehkeč 'my finger nail', wi?nal 'hunger', me?hun 'aunt'.

Clusters of three consonants are rare and occur only in Spanish loan words. The third consonant is limited to /r w/: hprental 'my security', spwersail 'its necessity'.

3.3. Any vowel may occur in the vowel position in syllables: yo.še.p'al 'third', ?a.t'e.hip' 'tool', yu.ci.lal 'its goodness', ya.loh.p'ey 'he has told him'.

Clusters of any two vowels, identical¹⁴ or otherwise, occur between

14. In clusters of identical vowels, the vowels are rearticulated. In cognate words in the Bachajón dialect, the rearticulated vowels have been observed to be separated by /h/: p'een 'he walked' (Oxchuc) = p'ehen 'he walked' (Bachajón); c'iin 'then' (Oxchuc) = c'ihin 'then' (Bachajón); la šč'uun 'he believed' (Oxchuc) = la šč'uhun 'he believed' (Bachajón).

syllables: ma.il 'squash', ta.el 'coming', ša.al 'again', mo.an 'go up'.

Vowel clusters also occur in word final position. The second vowel of such a cluster is limited to /a e/: le.a 'seek it', te be.e 'the road'.

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