

Fieldwork and tone in Mexico

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Topics

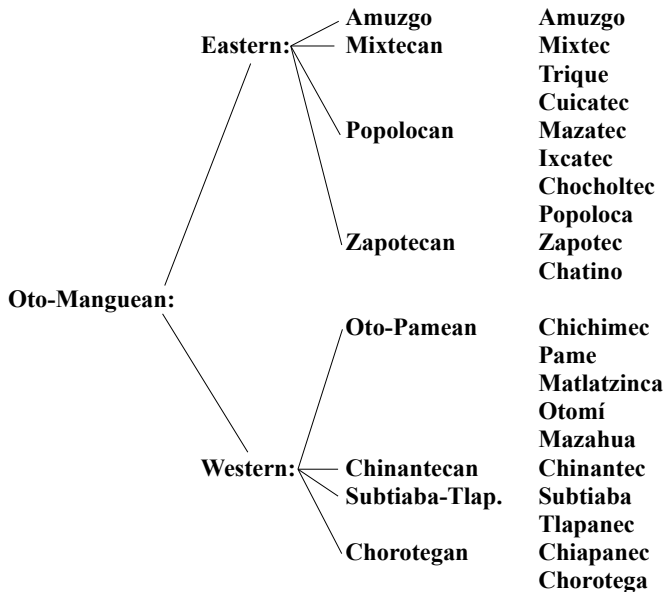
- 1 Oto-Manguean languages in Mexico: fieldwork, characteristics, and examples.
- 2 Doing fieldwork on tone: methods, ear-training, and practice.

Language families in Mexico



Oto-Manguean languages

- With 177 languages, Oto-Manguean is the largest language family in the Americas (and 9th largest in the world).
- A majority of these languages are spoken in the state of Oaxaca. In fact, 157 of the 285 languages spoken in Mexico are found in Oaxaca.
- Extensive diversity within language family largely correlates with biological diversity in the areas where it is spoken. Oaxaca is the most biologically diverse state in Mexico with the greatest number of endemic vascular plants (de Ávila, 2010).



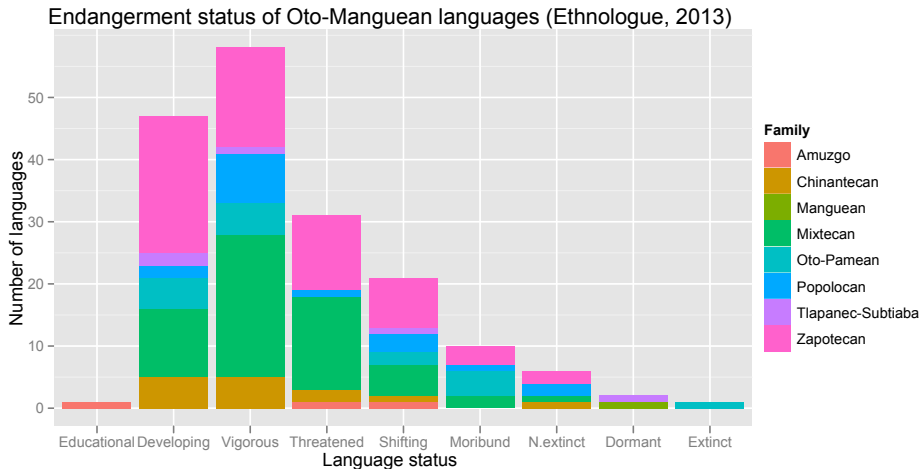
Diversity within each “language”

Trique is spoken by approximately 30,000 people. There are 3 main variants: Copala, Chicahuaxtla, and Itunyoso (DiCanio, 2008; Hollenbach, 1984; Good, 1979). It has a relatively short time depth of diversification (400-800 years) (Kaufman, 1990).

Itunyoso	Chicahuaxtla	Copala	Gloss
ra ³ ʔa ³	ra ³ ʔa ³	ra ³ ʔa ³	<i>‘hand’</i>
cnãh ³⁵	ði ⁴ nĩ ⁴	ti ³ nũ ³⁵	<i>‘my brother’</i>
tʃa ³ tã ³	ʃa ³ tã ³	tʃa ³ tã ¹³	<i>‘pineapple’</i>
tʃa ³ kah ⁵	ʃa ³ ka ⁵	ʃka ³⁵	<i>‘pig’</i>
ββeh ³	wwehe ³	ju ³ βeh ³	<i>‘boundary stone’</i>
tʃsoh ³	tʃsoho ³	ni ³ tʃsoh ³	<i>‘female’s belt’</i>

The distance between each town is approximately 5.2 miles.

Roughly 40% (71/177) of Oto-Manguean languages are endangered (“threatened” or worse).



Fieldwork on Oto-Manguean languages: four stages

- ① Early work during the colonial period on Mixtec grammar (de Alvarado, 1593; de los Reyes, 1593) and Zapotec grammar (de Córdoba, 1578).
- ② Comparative work on different Oto-Manguean languages in the early years of the republic (Belmar, 1897; León, 1902; Mechling, 1912; IHS, 1893).
- ③ Substantial SIL research on many different Oto-Manguean languages between the early 1930's and the late 1970's (Pike and Pike, 1947; Longacre, 1952; Mak, 1953), etc.
- ④ Modern era includes fieldwork by non-SIL researchers as well (Jaeger and Van Valin, 1982; Jaeger, 1983; Veerman-Leichsenring, 1984; Hinton, 1991; Silverman et al., 1995; Munro and Lopez, 1999).

Linguistic characteristics

- All Oto-Manguean languages are tonal. At least three tones are reconstructed at the earliest levels (Kaufman, 1990; Rensch, 1976).
- Many families also have contrastive phonation type, such as Popolocan, Chinantecan, and Zapotecan (Silverman, 1997).
- Complex onsets are possible, but most languages lack codas. Some families have mostly monosyllabic word shape, but many others allow polysyllables.
- While there is some variation within different branches of Oto-Manguean, many Oto-Manguean languages are relatively isolating. Complex morphology may occur on verbs though (Campbell et al., 1986; Palancar, 2009; Suárez, 1983). Almost all Oto-Manguean languages have complex morphophonology related to personal enclitics/suffixes.

Word shape

Pame permits trisyllabic roots, while Chinantec is strictly monosyllabic. Pame permits onset clusters and codas, while Chinantec permits neither. Both languages have laryngeally complex (aspirated, glottalized) consonants.

Northern Pame	Gloss	Quiotepec Chinantec	Gloss
nʔn ^h ǎ	'word'	ŋgai ¹²	'two'
nmǎéʔp	'donkey'	tsa ³	'person'
ʃtʃ'ǎʔ	'tortilla plate'	ʃiu ²⁴³	'little'
skwáʔant	'clothing'	ŋa ⁵⁴	'dawns'
kənt ^h jújp	'inside'	m̥ ⁵³	'water'
np ^h úhu	'chair'	m ³⁵³	'sandal'

Data from Berthiaume (2004); Castillo Martínez (2011).

Tones in Oto-Manguean: a typological abundance

- Approximately 41.8% of the world's languages (220/527) are tonal (Maddieson, 2011).
- Of these, 60% (132/220) have only 1-2 lexical tone contrasts and 40% have three or more tonal contrasts (88/220).
- Among the tone languages with large inventories, languages with between 3-6 tonal contrasts are relatively common, e.g. Thai (5), Mandarin (4), Vietnamese (6), Cantonese (6), Yoruba (3).
- Languages with greater than 6 tones are rarer, but many are Oto-Manguean, e.g. Itunyoso Trique (9) (DiCanio, 2008), Yolojóchitl Mixtec (10) (DiCanio et al., 2012), Chatino (10) (Cruz and Woodbury, 2005), Tlacoatzintepec Chinantec (7) (Thalin, 1980), Chiquihuitlan Mazatec (17) (Jamieson, 1977).

Tonal transcription

- Tendency to use numbers to mark tone, where “1” is the highest tone and greater numbers are lower tones, following Pike (1948).
- Work on Trique, Mixtec, and Chinantec has used the Chao tone system, where “1” is the lowest tone (Castillo García, 2007; DiCanio, 2008; Hollenbach, 1984, 2004; Castillo Martínez, 2011).
- If a language has three or fewer tone levels, diacritics are often used on vowels, e.g. /á, a, à/ for H, M, L tones.

Ixcatec tone - only level tones

Tone	Word	Gloss	Tone	Word	Gloss
H	tʃmí	'fruta'	H.H	súndzí	'cuchara'
M	tʃu	'calabaza'	H.M	tʃúʔmi	'chayote'
L	ʃù	'piedra'	H.L	tsǎʔǎ	'sombra'
			M.H	tʃuṇdí	'cebolla'
			M.M	tʃika	'cuchillo'
			M.L	tʃihì	'olla'

Tone is associated with syllables in Ixcatec. Each syllable can take one of three level tones, but low tones only occur in domain-final position (DiCanio, submitted).

Quetzalapa Chinantec - more levels

Considered a variant of Sochiapan Chinantec (Foris, 1993; Lewis et al., 2013), but very low intelligibility (20 - 30%) with Sochiapan. Words courtesy of Isabel Alhondra.

Tone	Word	Gloss
55	tsou	'his/her fault'
44	tsou	'illness'
33	tsou	'he/she goes'
22	tsou	'straight'
21	tsou	'sin'
32	tsou	'male'
42	tsou	'people'

San Lucas Quiaviní Zapotec - phonation types

Tone and phonation type are independent, but certain phonation types are not permitted with certain tones (Chávez Peón, 2010).

Tone	Phonation	Word	Gloss
High	modal	gji:a	'will go home'
Low	modal	gji:a	'agave root'
Low	breathy	gji:ᵃ	'rock'
Low	creaky	gji:ᵃ	'flower'
Low	checked	gjiʔa	'market'

Tonal morphophonology: Itunyoso Trique

Stem	Gloss	Inflected stem	Gloss
a ³ tʃi ³	'to peel'	a ³ tʃih ⁵	'I peel'
so ³ ʔo ³	'be.deaf'	so ³ ʔoh ⁵	'I am deaf'
nne ³	'plough'	si ³ -neh ⁵	'my plough'
ku ³ ru ³²	'granary'	si ³ -ku ² ruh ²	'my granary'
na ³ tʃã ⁷³	'to bend'	na ³ tʃãh ⁵	'I bend'
to ³ ko ⁷¹	'to hang'	to ³ koh ³	'I hang'
sta ³ ŋga ⁷³	'nape'	sta ³ ŋgah ⁵	'my nape'
kkã ⁷³	'masa'	si ³ -kãh ³	'my masa'
a ⁴ tʃih ³	'to grow'	a ⁴ tʃi ⁴³	'I grow'
ŋgah ³	'be.lying.down'	ŋga ³²	'I am lying down'
nneh ³	'dream'	si ³ -ne ³²	'my dream'
ka ² kih ³	'nail'	si ³ -ka ² ki ²	'my nail'

Why do phonetic/phonological fieldwork on Oto-Manguean languages?

- Interest in the origin of typologically rare contrasts (large tonal inventories, phonation types) as well as comparative cross-linguistic work.
- Interest in tone production in languages with more complex word structure than those in East/Southeast Asia. Research on the phonetics of tone has strong bias here.
- Interest in development of literacy requires knowledge of phonetics and phonology. Language maintenance and revitalization efforts frequently involve the development of written materials.
- Component of linguistic description. By necessity, all those who work on Oto-Manguean languages have to be interested in phonology and phonetics to a certain degree.

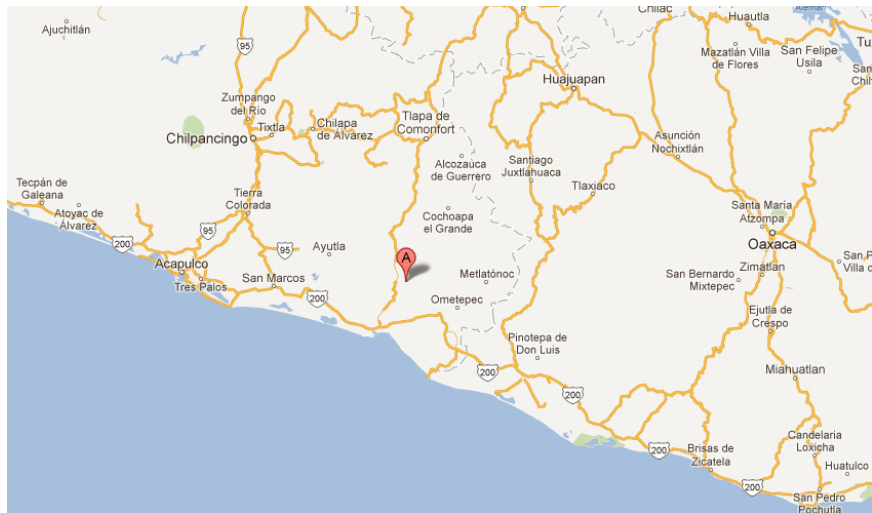
Where do we start?

- Ear-training.
- Look for minimal pairs or words with similar phonological structure, e.g. all monosyllables or all disyllables with similar vowels. Look for words that are more likely to be uninflected, e.g. animals, months, days, numbers, etc.
- Transcription: Choose a single scale, but it is usually easier to start larger and go smaller, e.g. 5 levels > 3 levels.
- Start with basic differences: level vs. falling vs. rising; higher or lower height, etc. Then, create more subgroupings, i.e. divide and conquer.

Things to keep in mind

- 1 The speaker may give you morphologically complex forms first, then simple forms later. Check to see if the speaker is being consistent.
- 2 Phonation type and vowel height interact with F_0 . As much as possible, try to control for these factors.
- 3 It is easier to categorize words as having “the same tone” than it is to agree on just what label to give this category. Focus on getting the categories right. The labels come later.
- 4 Discoveries beget more questions, which themselves beget more discoveries.

Case study: Yoloxóchitl Mixtec

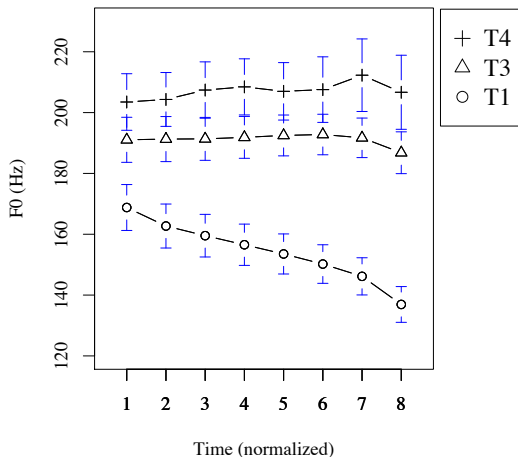


Yoloxóchitl Mixtec

- Spoken in Guerrero, Mexico, Yoloxóchitl belongs to the Baja de Sur Mixtec subgroup (Josserand, 1983).
- Unlike other Mixtec languages, content words are minimally bimoraic and maximally trimoraic, e.g. /CV(?)V, CV(?)CV, CVCV(?)V, and CVCV(?)CV/. The bimoraic/bisyllabic couplet is more typical in Mixtec languages (Hinton, 1991; Macaulay and Salmons, 1995; Macaulay, 1996; Macken and Salmons, 1997).
- There are four tone levels and many tonal contours composed of sequences of levels.
- Tone is associated to moras. Five possible tones may surface on the penultimate mora and up to eight on the final mora.

Level tones

nda¹a¹ 'flat', ʃa³a³ 'fast', nda⁴a⁴ 'black'



Exercise: Ear training and categorization

- Task 1: Distinguishing between different rising tones.
- Task 2: Using Toney software for tonal categorization.
- Task 3: Distinguishing between different falling tones.
- Task 4: Distinguishing between different complex contour tones.

Rising tones (three types)

koo	nama	ndoʔo
'snake'	'change of luck'	'adobe'
kaa	nama	koʔo
'to slip'	'soap'	'plate'
saʔma	ndoo	saʔnda
'napkin'	'to remain'	'thigh'
jaʔnda	kaʔa	nama
'memela'	'butt'	'shoot (n.)'

Rising tones - answers

ko¹o⁴

'snake'

ka³a⁴

'to slip'

saʔ³ma⁴

'napkin'

jaʔ¹nda⁴

'memela'

na¹ma³

'change of luck'

na¹ma⁴

'soap'

ndo¹o³

'to remain'

kaʔ³a⁴

'butt'

ndoʔ¹o³

'adobe'

koʔ¹o⁴

'plate'

saʔ¹nda³

'thigh'

na³ma⁴

'shoot (n.)'

Falling tones (four types)

kuʔu

'to get sick'

nduβa

'to fall back'

ndaβa

'he/she falls'

numa

'to stop raining'

taʔnda

'to be cut'

kuu

'to die'

kaʔnda

'to cut'

tuʔu

'worn out (objects)'

ndaʔβi

'some'

tuu

'to think'

koʔo

'dense brush'

iʔi

'raw (of meat)'

ʃaʔnda

'he/she cuts'

tuβa

'parrot'

Falling tones - answers

kuʔ³u²

'to get sick'

ndu³βa²

'to fall back'

nda⁴βa³

'he/she falls'

nu⁴ma¹

'to stop raining'

taʔ⁴nda¹

'to be cut'

ku³u²

'to die'

kaʔ³nda²

'to cut'

tuʔ⁴u²

'worn out (objects)'

ndaʔ⁴βi³

'some'

tu⁴u²

'to think'

koʔ⁴o¹

'dense brush'

iʔ⁴i³

'raw (of meat)'

ʃaʔ⁴nda²

'he/she cuts'

tu⁴βa²

'parrot'

Types of tonal movements

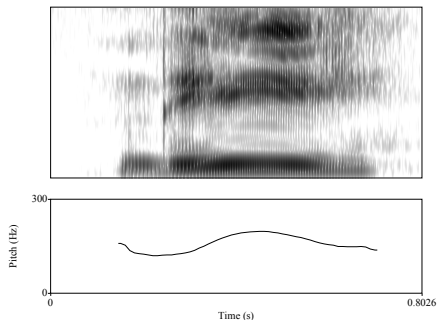
- YoloXóchitl Mixtec also possesses complex contours as well.
- Convex tones: rise + fall (rainbow)
- Concave tones: fall + rise (smile)

Concave and convex tones

Convex tone (rainbow)

ndii

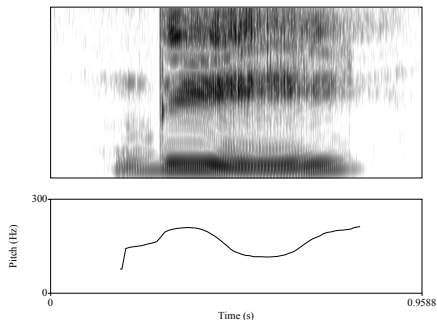
'pink'



Concave tone (smile)

ndii

'it burns (intr.)'



Concave and convex tones

nii	ñuu	ɟii
'thin'	'night'	'resistent'

ndii	ndee	ndii
'pink'	'they enter'	'it burns'

Concave and convex tones - answers

ni⁴i²⁴

'thin'

convex

ñu³u⁴²

'night'

concave

ɟi¹i³²

'resistent'

concave

ndi¹i⁴²

'pink'

concave

nde⁴e¹³

'they enter'

convex

ndi⁴i¹⁴

'it burns'

convex

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