The Structure of Itunyoso Triqui: an overview

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I. Triqui languages

• 3 major language variants with limited mutual intelligibility.

• All complex tone languages within the Mixtecan family.

• Average distance between the major Triqui regions is ~5 km, but it is very mountainous terrain with large elevation differences.
Language vitality

Most people identifying as Triqui in Mexico speak Triqui, including children.

The situation is very different in expatriate communities that have moved away from the Triqui region.

Most people under 50 are bilingual in Spanish.
San Martín Itunyoso

- There are two towns where Itunyoso Triqui is spoken: San Martín Itunyoso (shown) and the smaller *agencia* of La Concepción Itunyoso (not shown), which is a 5-10 minute drive away on the other side of the valley.
• At 2600 meters, it is a very mountainous region. From certain points you look “down” on the clouds. Clouds roll in most afternoons to cover the town in a thick fog.
Most work in the town is subsistence agriculture, with some foods sold at local markets. Women sell woven goods (bags, shawls, purses, laptop covers, *huipiles*).

There are over 40 types of *quelites* (edible greens) that are eaten locally. They are either harvested or foraged.
Weaving is extremely elaborate and completed by hand on a loom tied to a tree/post at one end and a *mecapal* (weaving belt) tied around the weaver’s waist at the other end.

The large red dress is a *huipil* [wi'pil] and it is traditionally worn by women in the village.
Literacy

There is no widespread literacy in the language, but that is gradually changing with literacy workshops and training.
Genetic affiliation (traditional)

Mixtecan (3-7 kya)

- Mixtecan-Cuicatecan
  - Mixtec (1.6-1.8 kya)
    - Cuicatec
      - Tepeuxila
      - Teutila
      - 12 languoids
    - Itunyoso
      - Itunyoso-Chicahuaxtla
      - Chicahuaxtla
      - Copala
  - Triqui
  - ~60 spoken varieties
Genetic “distance” (recent)

(Auderset, Campbell, DiCanio, and Greenhill, 2023)
Several branches to Otomanguean

With 180 languages/varieties, Otomanguean is the largest language family in the Americas. The diversity is on par with Indo-European, but in an area the size of New York State!
The region of eastern Guerrero and most of Oaxaca has the greatest linguistic diversity in Mexico; more than 180 languages are spoken in this region.
The size of the Otomanguean language family

• The Zapotec empire spread throughout Oaxaca from 2,500 – 1,500 years ago. The Mixtec empire began to spread between 1100 – 1300 CE.

• As a result, both Mixtec and Zapotecan languages diversified greatly within Southern Mexico. Speakers settled in new areas and the language variants further diversified.

• This led to Otomanguean becoming a much larger language family than others (the largest known family in the Americas).

• A similar process probably also occurred with the Aztecs/Nahuatl speakers – there are many Nahuatl varieties/languages.
Mixtec expansion/empire

• Between the 12th and 14th centuries, Mixtecs united and began to expand beyond their region.

• The figure Eight-Deer Jaguar Claw led Mixtecs in battles against people in the region. This greatly expanded Mixtec languages.

Nutall codex – tells the story of Eight-Deer; UC San Diego Library
Typological features of Otomanguean

• Unlike Uto-Aztecan, Mayan, and Mixe-Zoquean, all Otomanguean languages are **tonal**. Most also have morphological tone.
• The morphology is mostly fusional with some affixation on verbs, but it is otherwise fairly isolating.
• Virtually all Otomanguean languages have verb-initial word order.
• Vigesimal numeral systems (base 20)
• Relational nouns
• Verbs of emotion/cognition are all formed via a specific type of compounding.
Triqui is surrounded by Mixtec varieties

The Triqui speaking area is surrounded by the many different varieties of Mixtec, shown here superimposed over a map from Josserand’s dialectological survey of Mixtec, published in 1983.
Intelligibility among varieties/dialects

There is about 60% intelligibility between the Itunyoso and Chicahuaxtla Triqui varieties, but Copala Triqui is more divergent from the other varieties. It is not intelligible as the same language.

<table>
<thead>
<tr>
<th></th>
<th>Itunyoso Triqui</th>
<th>Chicahuaxtla Triqui</th>
<th>Copala Triqui</th>
</tr>
</thead>
<tbody>
<tr>
<td>tʃãʔ¹ 'tasty'</td>
<td></td>
<td>Ꞓiãh²³</td>
<td>tʃi³ʔãh¹</td>
</tr>
<tr>
<td>tʃu³ tah³ ‘deer’</td>
<td></td>
<td>Ꞓu³ tah³</td>
<td>Ꞓtah³</td>
</tr>
<tr>
<td>tʂuh³ ~ tʃuh³ ‘pot’</td>
<td></td>
<td>ruh³</td>
<td>Ꞓuh³</td>
</tr>
</tbody>
</table>
What does Itunyoso Triqui sound like?

`Se⁴ chi³yun³² ka³-hnah³ rian³² beh³`,
NEG bat PERF-come face house

`chi³nunh³ ka³-hnah³ rian³² beh³`
hawk PERF-come face house

‘It wasn’t a bat that landed in front of the house, (but) a hawk landed in front of the house.’
What are all those numbers? There are 9 tones.

βːeh⁵ ‘straw mat’
βːe⁴ ‘hair’
nːe³ ‘plough’
nːe² ‘to lie (to someone)’
nːe¹ ‘naked’
tʃe⁴³ ‘my father’
nːe³² ‘water’
nːe³¹ ‘meat’
nːah¹³ ‘towards here’

Triqui languages have complex tonal systems and important distinctions between roots which end with /h/ and /ʔ/.

For many Otomanguean languages, researchers focus on phonological aspects of the languages because:

(a) the phonology is very complex
(b) the phonology is important to the morphology (grammatical tone)
Linguistic characteristics (a snapshot)

• Most roots in Triqui are disyllabic, with monosyllabic roots displaying additional phonological complexity.

• Complex tone (thoughout varieties). Copala Triqui has 8 tones, Itunyoso Triqui has 9 tones, Chicahuaxtla Triqui has 10 tones.

• Tone is morphological too – it is used for marking verbal aspect, person marking, possession, negation, and even some syntactic phenomena.

• VSO, with fronted constituents conditioned by information structure.

• Complex pragmatics with very elaborate final particle system.
Early scholarship on Mixtecan languages

Some of the earliest dictionaries of languages in the Americas were on Mesoamerican languages.

Fray Francisco de Alvarado’s Mixtec dictionary and Fray Antonio de los Reyes grammar are both from 1593.
Early scholarship on Triqui languages (minimal)

**Chicahuaxtla Triqui**


**Copala Triqui**

Later work (red indicates Triqui linguist work)

**Itunyoso Triqui**


...and 11 additional publications from 2010 – 2022, mostly in phonetics/phonology

**Chicahuaxtla Triqui (by year)**


Copala Triqui (by year)


Status of my scholarship on Itunyoso Triqui

• 2004 – 2008 Dissertation research, focus on phonetics and phonology of tone/phonation/length.

• 2009 – 2014 Post-doctoral research (France, US), focus on perception of tone, phonation; tonal coarticulation

• 2014 – 2019 NSF DLI/DEL documentation grant, focus on text collection, transcription, morphophonology, and prosody

• 2020 – 2022 Continued focus on translation and documentation; UB Humanities institute grant

• 2023 – present Focus on reference grammar; NEH fellowship grant

• 2004 – present *The Triqui-Spanish dictionary*
Course information

• Readings most weeks of the semester examine various topics pertaining to Otomanguean or Triqui grammar. These are up on UB Learns under Readings.

• There are 3 homework assignments and a final project
  1. HW1: on sound structure of Triqui
  2. HW2: on morphology or syntax of Triqui
  3. HW3: on a topic of your choice from the existing materials

• The final project involves exploring some aspect of Triqui grammar from the corpus or dictionary. It may involve creating a Triqui lesson/game.
Types of materials we will access in the course

• The Triqui-Spanish dictionary
• Inflectional database
• 400K word text corpus in ELAN with Triqui transcriptions and translations into Spanish
• Additional elicitation recordings (~50 hours) targeting specific contrasts.
• Fieldnotes from 2004 – present.
A Triqui-Spanish dictionary (FLEx)

• Since 2004, we’ve been working on a Triqui-Spanish dictionary. It currently has about 2,758 entries (2072 words, 686 compounds).
• Access via the web, but this is the exported version.

narih | na3rih3 [na3riʔ3] v
1. encontrar cosas na3rih4=rehl sa3hanj2 Encuentras dinero.
2. combinarse, p.ej. hilos
3. encontrar ideas, palabras nun3 na1rilhij1 naltaj1 rian32=rehl No puedo encontrar (cosas) a contarte a ti.
4. aprender na3ri3hij5 sna3hanj3 sti4la43 Estoy aprendiendo español.
5. estar permitido, para que
• POT kinarih, 1S narihij, raiz 2S narih
• narih nübij na3rih3 nu2bij3narih nübij v ponerse frio; lit. encontrar + tener.frio [1S narih nübii]
We also have a database of tonal inflectional paradigms (970 main entries).

It contains 5,342 sub-entries for inflected words (see DiCanio et al 2020).
The text corpus (ELAN)

• In addition to about 40 hours of elicitation and experimental recordings, we have 29 hours of spontaneous/unscripted speech from 34 speakers.

• Content is Triqui culture, ethnobiology, history, narratives, and folktales. Most involve conversational dyads with separately mic’d speakers; 289 recordings.

• All transcribed and time-aligned in ELAN.
But also, my grammar chapters

- There is a popular grammar of Copala Triqui (Hollenbach 2004) and a syntactic sketch of Copala Triqui (Hollenbach 1992), but no reference grammar on any Triqui language.

- A comprehensive reference grammar is underway with chapters on aspects of the language’s phonetics and phonology, chapters on aspects of the clitic, nominal, and verbal morphology, chapters on syntactic structure, and chapters on semantics/pragmatics.

- I’m writing this right now, so if there are open questions/issues you see in the chapters, please tell me! These could also be projects to work on.
Why write a grammar?

You learn a lot through years of fieldwork.

After a documentation project has ended, where does this knowledge go?
Why? (cont)

• The NSF documentation grant (2014 – 2019) involved training speakers in literacy in Triqui and running literacy workshops in the community.

• I taught Basileo Martínez Cruz, Benigno Cruz Martínez, and Wilibaldo Martínez Cruz literacy and they spent 3-6 years transcribing recordings.

• They have transcribed 29 hours of Triqui speech.

• We reviewed many of the recordings they transcribed (~12 hours) over this period. This includes years of work correcting tonal transcriptions.

• We have translated about 6-7 hours of Triqui speech.

• We know a lot and want this knowledge to be recorded and used/learned by others.
Topics of interest in Triqui grammar

<table>
<thead>
<tr>
<th>I’ve published on...</th>
<th>Interesting ongoing projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segmental phonetics and phonology (glottalization and length, especially)</td>
<td>Triqui has over 40 final particles marking pragmatic differences (but no intonation)</td>
</tr>
<tr>
<td>Tonal phonetics and phonology</td>
<td>Complex possession system with unique constructions for animals and inalienables</td>
</tr>
<tr>
<td>Tonal morphology w/rt clitic pronouns</td>
<td>Complex system of negation (several negators, morphological toggling)</td>
</tr>
<tr>
<td>Verbal aspect morphology</td>
<td>VSO word order but main verb final with clefts, causatives, &quot;infinitival constructions&quot;</td>
</tr>
<tr>
<td>Speech variation</td>
<td>Marginal morphological contrasts (optative marking, obviative marking) involve very unique phonological patterns.</td>
</tr>
<tr>
<td>Prosody and information structure</td>
<td>Complex verb+adverb marking</td>
</tr>
</tbody>
</table>
Tonal morphology

oʔ³ ‘to hit’
oɦ⁵ ‘I am hitting’
oʔ⁴ ‘we are hitting’
oh³ ‘the mentioned person is hitting’

k-oʔ¹ POT-hit
koh¹ ‘I will hit’
koʔ¹ ‘we will hit’
koh¹³ ‘the mentioned person will hit’

It can take years to understand the subtleties of tonal phonologies in different Otomanguean languages.

But it is intertwined with the morphology (which can also take some time to figure out).

So, linguists sometimes never leave the morphophonology.
This took me 10 years to figure out!

Table 9: Examples of strata in Itunyoso Triqui

<table>
<thead>
<tr>
<th>Stratum 1</th>
<th>Input</th>
<th>Word</th>
<th>Gloss</th>
<th>Output</th>
<th>Word</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a³chĩfi⁵</td>
<td>ask.for</td>
<td></td>
<td>k-a³chĩfi⁵</td>
<td>PERF-ask.for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a³chĩfi⁵</td>
<td>ask.for</td>
<td></td>
<td>k-a²chĩfi²</td>
<td>POT-ask.for</td>
<td></td>
</tr>
<tr>
<td>Stratum 2</td>
<td>Input</td>
<td>ka³chĩfi⁵</td>
<td>PERF-ask.for</td>
<td>ka²chĩfi²</td>
<td>POT-ask.for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>ka³chĩ:⁴³</td>
<td>PERF.ask.for.₁s</td>
<td>ka¹chĩ:¹</td>
<td>POT.ask.for.₁s</td>
<td></td>
</tr>
<tr>
<td>Stratum 1</td>
<td>Input</td>
<td>be³</td>
<td>house</td>
<td>ko³no³?o⁴</td>
<td>medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>tu³kw⁴a⁴</td>
<td>POSS.house</td>
<td>si³-k⁰no¹?o¹</td>
<td>POSS-medicine</td>
<td></td>
</tr>
<tr>
<td>Stratum 2</td>
<td>Input</td>
<td>tu³kw⁴a⁴</td>
<td>POSS.house</td>
<td>si³k⁰no¹?o¹</td>
<td>POSS.medicine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Output</td>
<td>tu³kw⁴ah⁴⁵</td>
<td>POSS.house.₁s</td>
<td>si³k⁰no¹?o₁</td>
<td>POSS.medicine.₁s</td>
<td></td>
</tr>
</tbody>
</table>

But there is so much more to investigate!

<table>
<thead>
<tr>
<th>Word</th>
<th>Use</th>
<th>Copala Triqui (trc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ni³taj²</td>
<td>negative existential, ‘be none’</td>
<td>taj³²</td>
</tr>
<tr>
<td>se⁴</td>
<td>counterfactual, negative focus’</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>e.g. ‘not A, but B’</td>
<td></td>
</tr>
<tr>
<td>nun³</td>
<td>standard negator, ‘not’</td>
<td>ne³</td>
</tr>
<tr>
<td>si³</td>
<td>prohibitive; future negator</td>
<td>se²</td>
</tr>
</tbody>
</table>

The standard negator involves a morphological toggle – the perfective and potential forms flip under negation, c.f. Baerman (2007).

a. Nun³ ka²hanj³=si³ ni³kyanj⁵ C. Nun³ (*si³) ki³-ni³hinj⁵ nni⁴=reh¹
   NEG POT.go=3M Tlaxiaco
   ‘He did not go to Tlaxiaco.’

b. Nun³ (NEG (*NEG.pot) PERF-know/see.1S mother.2s=2s
   ‘I will not see your mother.’
Optative marking? (with tone)

Itunyoso Triqui permits two constructions for the expression of epistemic modality.

1. Use of a³hbe³ ‘able to’ + verb (periphrasis)

\[ \text{k-a}^2\text{hbe}^3 \quad \text{na}^2\text{ki}^3\text{hyoh}^4 \]

\text{POT-able} \quad \text{PERF.fix.1P}

‘We will be able to fix it.’

2. Vowel reduplication on stems

<table>
<thead>
<tr>
<th>Stem</th>
<th>Gloss</th>
<th>POT</th>
<th>POT.OPT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) nne³</td>
<td>‘to sit’</td>
<td>ka²ne²</td>
<td>ka²ne²eʔ⁴</td>
</tr>
<tr>
<td>(b) ko⁴?o⁴³</td>
<td>‘to drink’</td>
<td>ko²?o²</td>
<td>ko²?o²oʔ⁴</td>
</tr>
<tr>
<td>(c) tʃa⁴³</td>
<td>‘to eat’</td>
<td>tʃa²</td>
<td>tʃa²aʔ⁴</td>
</tr>
<tr>
<td>(d) rã⁴ʔaḥ⁴</td>
<td>‘to dance’</td>
<td>ki²rã²ʔaḥ²</td>
<td>ki²rã²ʔã²ʔaʔ⁴</td>
</tr>
</tbody>
</table>
This is a rare contrast not found elsewhere.

(11) ni³?yah³ sa¹a⁴ neh³ kwe⁴nta⁴³ ko²ro² serve good=OPT also for POT.drink.GER

‘It also can work well for drinking.’

(12) ...kwe⁴nta⁴³ ri³ya³a⁴ ni² tjo⁴ for boil=OPT and eat.1P

‘...for boiling and (for) us to eat’

In (11), the speaker is describing how to prepare a medicinal plant. In (12), the speaker is describing an edible green. The implied sense is that one can boil the green as a possible way to prepare it.

(from texts ‘Etnobiología de kkoj yaka’ and ‘Etnobiología de kkweej chabì’ by Francisco Fernández López.)
Ongoing projects

• I am writing a grammar and I have 8/16 chapters done. This is the main project I am working on with Triqui.

• Several projects have been offshoots of the grammar and these can all involve additional work or collaborations.
Project 1: Final particles (with Jürgen Bohnemeyer)

• Initial investigation into evidentiality with final particle use with my Triqui consultants.

• Probably fits in well into a chapter on pragmatics and discourse.

• Requires close work involving elicitation because it is exceedingly hard to examine meanings of these particles independently from a corpus.
## Pragmatic complexity

### Table 9: Final particles in Itunyoso Triqui

<table>
<thead>
<tr>
<th>Particle</th>
<th>Meaning</th>
<th>Particle</th>
<th>Meaning</th>
<th>Particle</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>nih⁴</td>
<td>polar.Q</td>
<td>nanj⁵</td>
<td>completed action</td>
<td>raj¹</td>
<td>expresses uncertainty</td>
</tr>
<tr>
<td>unj⁵</td>
<td>respectful</td>
<td>bej¹</td>
<td>insistence (command)</td>
<td>nanh³</td>
<td>expresses exclusivity</td>
</tr>
<tr>
<td>aj³ ~ aj⁵</td>
<td>polar.Q</td>
<td>yu³ be³²</td>
<td>declarative</td>
<td>raj³</td>
<td>hearsay</td>
</tr>
<tr>
<td>ah³</td>
<td>negative tag.Q</td>
<td>ya³ rij⁵</td>
<td>(respect b/w women)</td>
<td>sa³ yoj³</td>
<td>actually</td>
</tr>
<tr>
<td>sah¹</td>
<td>alternative Q</td>
<td>hnej⁵</td>
<td>declarative</td>
<td>ya³ mej³</td>
<td>NEG.DECL</td>
</tr>
<tr>
<td>runj³ ~ runj⁵</td>
<td>hearsay Q</td>
<td>yoj³²</td>
<td>conclusion</td>
<td>staj³</td>
<td>NEG.emphatic</td>
</tr>
<tr>
<td>oh¹</td>
<td>WH.Q</td>
<td>beh¹</td>
<td>expresses strong</td>
<td>manj⁵</td>
<td>NEG.focus</td>
</tr>
<tr>
<td>oj¹</td>
<td>rhetorical.Q</td>
<td>toj¹</td>
<td>obligation</td>
<td></td>
<td>e.g. ‘JOHN didn’t do it.’</td>
</tr>
<tr>
<td>saj⁵</td>
<td>2s.tag.Q</td>
<td></td>
<td>corrective particle</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e.g. ya know?)</td>
<td></td>
<td>(like German ‘doch’)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is **just over half** the final particles!
Pragmatic complexity

Ki³-ni³kaj² yya¹³ yyoʰ³ nan² tah⁴? A³si² ngo²+bbij¹ yyoʰ³ nan²
PERF-carry time.of.year DIR male.elder.Q? or one+two year DIR
sah¹?
PART.ALTERNATIVE
‘Did it last one year, elder? Or several years?’

The word for ‘male elder’ is taj⁴ /tah⁴/, but a glottal stop is appended to
indicate that a question is being asked, resulting in tah⁴ /taʔ⁴/.

The final particle sah¹ indicates an option out of a list of entities.
a. \(ka^2\text{hanj}^2=\text{soh}^1\ \ni^3\text{kyaj}^5\ \text{maj}^3\)
\(\text{POT.go}=2.\text{RESP Tlaxiaco compadre}\)
‘You will go to Tlaxiaco, compadre’ ~ ‘Go to Tlaxiaco, compadre.’
b. \(ka^2\text{hanj}^2=\text{soh}^1\ \ni^3\text{kyaj}^5\ \text{mah}^3\)
\(\text{POT.go}=2.\text{RESP Tlaxiaco compadre.Q}\)
‘Will you go to Tlaxiaco, compadre?’

This type of distinction is subtle.

In addition to so many final particles, pragmatics is also changing segmental content on address terms (and only on address terms – it’s not a general suffix).
Project 2: Unification grammar of Triqui

Creation of syntactic parser with Rui Chavez using NLTK on Google Collab.

Write-up is collaborative using Overleaf.

In 2023, I re-recorded 12 speakers producing all of the major contrasts in the language. This is 2,160 recordings of words in isolation and 2,160 recordings of words in carrier sentences.

These recordings and the larger text corpus create opportunities to explore variation in production.
Final project ideas

• Any of these ongoing projects could involve additional collaboration—or there could be projects that develop as offshoots.

• Close involvement with the community (literacy workshops, creation of pedagogical materials to teach literacy) also means there is a need for additional types of things that could be final projects:
  • An app that includes the dictionary – currently in XHTML via FLEX.
  • A digital keyboard for Triqui texting (c.f. Mateo Toledo’s work)
  • Language games for teaching literacy (paper or digital)
  • Illustrations for existing stories/texts for publication with Storyweaver.