Negation strategies in Itunyoso Triqui
Evidence from experimental and corpus data

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Multiple ways to negate

Did the man buy plantains to eat?

\[ \text{ki}^3\text{ranj}^4 = \text{sij}^3 \quad \text{na}^3\text{to}^3\text{2 cha}^2 = \text{sij}^3 \quad \text{nih}^4? \]

\( \text{buy.perf=3m plantain eat.pot} \quad \text{pol.int} \)

\[ \text{nun}^3 \quad \text{ki}^2\text{ranj}^2 = \text{sij}^3 \quad \text{na}^3\text{to}^3\text{2 cha}^2 = \text{sij}^3 \quad \text{nu}^3\text{ta}^1 \quad \text{ki}^3\text{ranj}^4 = \text{sij}^3 \quad \text{cha}^2 = \text{sij}^3. \]

\( \text{NEG} \quad \text{POT-buy}=3\text{M plantain eat.pot}=3\text{M} \quad \text{tamale PERF-buy}=3\text{M eat.pot}=3\text{M} \)

‘He didn’t buy plantains to eat; he bought TAMALES to eat.’

\[ \text{se}^4 \quad \text{na}^3\text{to}^3\text{2 ki}^3\text{ranj}^4 = \text{sij}^3 \quad \text{manj}^5 \quad \text{nu}^3\text{ta}^1 \quad \text{ki}^3\text{ranj}^4 = \text{sij}^3 \quad \text{aj}^5. \]

\( \text{NEG plantain PERF-buy}=3\text{M DIS.PART} \quad \text{tamale PERF-buy}=3\text{M DIS.PART} \)

‘He didn’t buy PLANTAINS; he bought TAMALES.’
Why do negation strategies vary?

1. Examine the strategies used in an experimental study investigating information structure.

2. Examine corpus data focusing on specific negators and their use.
San Martín Itunyoso Triqui (trq)

- Oto-Manguean; spoken by approximately 2,500 speakers in San Martín Itunyoso and La Concepción Itunyoso, Oaxaca, Mexico.
- DEL Documentation project (2014 - present) focusing on text transcription, information structure, and prosody.
Syntax I

VSO basic word order

(3) $k-a^3 b=^i2 \ c^a h^a j^5 \ c^u h^u a^43 \ t^u k=^w a^4 = c^h u^3 j^3$
    PERF-exit pig inside house.POSS=3ANIM

‘The pig left its house.’

Focus is realized via fronting

(4) Which animal was hungry?

$ch^a h^a j^5 \ k-a^3 c^h i n^3 \ c^h i n^3 h=^n a^3^2 \ r^i ^3 k^3^i$
pig PERF-lack hunger stomach

‘The PIG was hungry.’
Syntax II

TAM is realized via stem prefixation and tonal alterations.

- **Progressive**

  (5) \( \text{ranj}^4 = \text{sij}^3 \)
  \( \text{buy} = 3M \)
  ‘He is buying it.’

- **Perfect**

  (6) \( \text{ki}^3 - \text{ranj}^4 = \text{sij}^3 \)
  \( \text{PERF-buy} = 3M \)
  ‘He bought it.’

- **Potential**

  (7) \( \text{ki}^2 - \text{ranj}^2 = \text{sij}^3 \)
  \( \text{IRR-buy.IRR} = 3M \)
  ‘He will buy it.’
Negators in Itunyoso Triqui

Description

1. nun³ : standard negator, 'not' (cf. ne³ (trc), nun³ (trs))
   Hollenbach (1976) describes a tense/mood toggling in Copala
   
   (8) nun³ k-a²hanj²=sij³ ni³gyanj⁵
       NEG go.pot=3M Tlaxiaco
       ‘He didn’t go to Tlaxiaco.’

2. se⁴ : counterfactual, 'not A, (but B)' (cf. se⁴ (trs))
   
   (9) se⁴ un² ki³-ranj⁴=sij³ | cchi² ki³-ranj⁴=sij³
       NEG nine PERF-buy=3M | ten PERF-buy=3M
       ‘He didn’t buy NINE, he bought TEN.’

3. ni³taj² : negative existential, 'be none' (cf. taj³² (trc), ni³taj² (trs))
   
   (10) ni³taj² yu³hbej³ ta³ nun³²
       not.exist thread this be.inside
       ‘There is none of this thread inside it.’

4. si³ : prohibitive, future negator (cf. se² (trc), si² (trs))
   Hollenbach (1976) describes a tense/mood toggling in Copala
   
   (11) si³ k-oh³=nej³ sa³hanj²
Focus Experiment

Overview

- Phonetic study investigating the realization of words in different information structure contexts: (a) broad focus, in-situ, (b) narrow focus, left-dislocated, and (c) corrective focus, left-dislocated.

- Eleven speakers listened to short Triqui texts spoken by a native speaker and responded to questions about participants in the text.

- Corrective focus involves variable use of different negators.

- Frequency of negator by context evaluated with general logistic models in R (R Development Core Team, 2017).
Examples of Corrective Focus with different negators

Did the man buy plantains to eat?
$\text{ki}^3 \text{ranj}^4 = \text{si}^3 \quad \text{na}^3 \text{to}^{32} \quad \text{cha}^2 = \text{si}^3 \quad \text{nih}^4$?
$\text{buy.perf}=3\text{m} \quad \text{plantain} \quad \text{eat.} \quad \text{pot}=3\text{m} \quad \text{pol.int}$

(12) $\text{nun}^3 \quad \text{ki}^2 \text{ranj}^2 = \text{si}^3 \quad \text{na}^3 \text{to}^{32} \quad \text{cha}^2 = \text{si}^3 \quad \text{| nu}^3 \text{ta}^1 \quad \text{ki}^3 \text{ranj}^4 = \text{si}^3 \quad \text{cha}^2 = \text{si}^3$.
$\quad \text{NEG} \quad \text{POT-buy}=3\text{M} \quad \text{plantain} \quad \text{eat.} \text{.POT}=3\text{M} \quad \text{| tamale} \quad \text{PERF-buy}=3\text{M} \quad \text{eat.} \text{.POT}=3\text{M}$

‘He didn’t buy plantains to eat; he bought TAMALES to eat.’

(13) $\text{se}^4 \quad \text{na}^3 \text{to}^{32} \quad \text{ki}^3 \text{ranj}^4 = \text{si}^3 \quad \text{man}^5 \quad \text{| nu}^3 \text{ta}^1 \quad \text{ki}^3 \text{ranj}^4 = \text{si}^3 \quad \text{aj}^5$.
$\quad \text{NEG} \quad \text{plantain} \quad \text{PERF-buy}=3\text{M} \quad \text{DIS.PART} \quad \text{| tamale} \quad \text{PERF-buy}=3\text{M} \quad \text{DIS.PART}$

‘He didn’t buy PLANTAINS; he bought TAMALES.’

Were the peppers sweet in the pineapple that it ate?
$\text{Tsih}^1 \quad \text{cha}^{43} \quad \text{ya}^3 \text{haj}^3 \quad \text{mman}^4 \quad \text{ri}^3 \text{ki}^3 \quad \text{cha}^3 \text{tan}^3 \quad \text{cha}^{43} = \text{chuj}^3 \quad \text{nih}^4$?
$sweet \quad taste \quad \text{pepper} \quad \text{exist} \quad \text{inside} \quad \text{pineapple} \quad \text{eat.real}=3\text{anim} \quad \text{pol.int}$

(14) $\text{ni}^3 \text{taj}^2 \quad \text{si}^3 \quad \text{tsih}^1 \quad \text{cha}^3 \quad \quad \text{| chu}^2 \text{na}^2 \quad \text{cha}^{43} \quad \text{ya}^3 \text{haj}^3 \quad \text{mman}^4 \quad \text{ri}^3 \text{ki}^3 \quad \text{cha}^3 \text{tan}^{32}$
$\quad \text{not.exist} \quad \text{that} \quad \text{sweet} \quad \text{taste.}3\text{TOP} \quad \text{| spicy} \quad \text{taste} \quad \text{pepper} \quad \text{exist} \quad \text{inside} \quad \text{pineapple} \quad \text{cha}^{43} = \text{chuj}^3$.
$\quad \text{eat.} \text{.REAL}=3\text{ANIM}$

‘They didn’t taste SWEET; the peppers were SPICY in the pineapple it ate.’
Speakers vary in whether they only supply the correction or in whether they also negate the focused assertion.
/nun\textsuperscript{3}/ rarely occurs before NPs ($z = 2.6$, $p < .01$) but /se\textsuperscript{4}/ was extremely common before NPs ($z = 6.0$, $p < .001$). Caveat: PoS of the negated constituent was imbalanced.
Discussion - Results I

\(\text{nun}^3\) occurred in only 2\% of the responses. It is dispreferred in contexts of correction.

\(\text{se}^4\) is the most common negator in the experiment regardless of the constituent type. However, note:

- The overall preference for \(\text{se}^4\) may be influenced by the preponderance of contexts with NP negation.
- When \(\text{se}^4\) is used with VP or Adj, it requires the complementizer \(\text{si}^3\).

\[
\text{se}^4 \text{ si}^3 \text{ tsih}^1 \text{ cha}^{43} \text{ ya}^{3 \text{haj}}^3 | \text{ chu}^{2 \text{naj}}^2 \text{ cha}^{43} \text{ ya}^{3 \text{haj}}^3 \text{ mman}^4 \\
\text{NEG COMP sweet taste_REAL pepper | spicy taste_REAL pepper exist} \\
\text{ri}^3 \text{ki}^3 \text{ cha}^{43} = \text{chuj}^3. \\
\text{inside eat_REAL = 3ANIM}
\]

‘The pepper didn’t taste SWEET; the pepper tasted SPICY inside [what] it ate.’

- \(\text{se}^4\) is used as focus-sensitive negator (c.f. Jackendoff (1972)).
Focus-sensitive Negation

A sentence is divided into two parts: Focus and Presupposition
e.g. [The MAN]$_F$ went to Mexico City.
Presupposition = $\lambda x. [x$ went to Mexico City]
Assertion = Focus $\in$ Presupposition
i.e. the man $\in \lambda x. [x$ went to Mexico City]

Focus-sensitive negation asserts: Focus $\notin$ Presupposition
e.g. [The MAN]$_F$ didn’t go to Mexico City.
the man $\notin \lambda x. [x$ went to Mexico City]
ni³ taj², the negative existential, is extended to predicate negation as evidenced in Adj and VP negation contexts.

- Like se⁴, ni³ taj² is also followed by a complementizer.

\[(16) \text{ ni³ taj² si³ tsih¹ chaj³² } | \text{ chu³ naj³ cha⁴³ ya³ haj³ mman⁴ ri³ ki³ not.exist that sweet taste.3TOP } | \text{ spicy taste pepper exist inside chaj³ tan³² cha⁴³ = chuj³. pineapple eat.REAL = 3ANIM} \]

‘They didn’t taste SWEET; the peppers were SPICY in the pineapple it ate.’

- ni³ taj² never occurred before NPs or PPs (relational noun constructions), possibly to avoid ambiguity between senses.
Interim questions

Are these results representative of IT overall or are they particular to the context of correction?

To investigate this question, we examined the use of negators in a corpus of several spoken texts.
Corpus Study

Overview

- Six texts were analyzed for negator preference.
- 51 minutes of spontaneous IT dialogue produced by 5 speakers, transcribed and translated in ELAN (Wittenburg et al., 2006).
- Examined (a) negator frequency, (b) construction-specific uses, and (c) syntactic restrictions.
## Corpus Results

### Frequency of Negator Types

<table>
<thead>
<tr>
<th>Negator</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>ni³taj²</td>
<td>45</td>
<td>27.1%</td>
</tr>
<tr>
<td>nun³</td>
<td>94</td>
<td>56.6%</td>
</tr>
<tr>
<td>se⁴</td>
<td>27</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

In contrast to the experiment, the relative frequency of $\text{nun}^3$ and $\text{se}^4$ are reversed. This supports the notion $\text{se}^4$ is correlated with corrective focus.
Types of Evidence: corpus

Summary of Corpus Study - nun³

- never occurs before a noun or preposition
- adjectives pattern with verbs
Summary of Corpus Study - se⁴

- Occurs frequently before nouns and the adverb taj¹³ ‘like so’
- Several frequent expressions including:
  - se⁴ taj¹³ baj³ ‘it isn’t like that’
  - se⁴ taj¹³ bin³ ‘it isn’t like that’
  - se⁴ taj¹³ hya³ ‘it doesn’t do/go like that’
- Rarely negates VPs: preceding a CP only once in corpus.
Summary of Corpus Study - $ni^3taj^2$

- Both usages occur in corpus; negative.existential & CP negator
- Both usages are similarly frequent
- Like $se^4$, requires complementizer to negate predicates, but much more common in the corpus (>15 tokens).
The Take Away

Table: Itunyoso Triqui Negators

<table>
<thead>
<tr>
<th>Negation</th>
<th>Syntax</th>
<th>Focus Sensitive</th>
<th>Semantics</th>
</tr>
</thead>
<tbody>
<tr>
<td>se⁴</td>
<td>pre-nominal</td>
<td>yes</td>
<td>(\text{Foc} \not\in \lambda x.\phi(x\ldots))</td>
</tr>
<tr>
<td>nun³</td>
<td>pre-verbal</td>
<td>no</td>
<td>(\neg \phi)</td>
</tr>
<tr>
<td>ni³taj²</td>
<td>pre-nominal</td>
<td>no</td>
<td>(\neg \text{exist’}(\ldots))</td>
</tr>
<tr>
<td>ni³taj² si³</td>
<td>pre-verbal</td>
<td>yes</td>
<td>(\text{Foc} \not\in \lambda P.P(\ldots))</td>
</tr>
</tbody>
</table>

- There is a strong correlation between (NP) corrective focus and \(se^4\).
- \(se^4\) subcategorizes for nominals, while focus-sensitive negation of predicates is often marked by \(ni^3taj^2\) and the complementizer \(si^3\).
- \(nun^3\) is used for sentential (non-future) negation and as in Copala Triqui often triggers aspect toggling.
Investigate the prohibitive/future-negator $si^3$:

- Does it also (sometimes) trigger aspect toggling as in Copala?
- Is it also in complementary distribution with $se^4$ with respect to sentential vs. corrective negation?
- Is $ni^3ta^2 si^3$ used in future contexts also?
- Do other focus-sensitive particles exist in Itunyoso? (additive, exclusive and scalar particles)
Acknowledgements

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- Team Triqui: Basileo Martínez Cruz, Wilibaldo Martínez Cruz, and Benigno Cruz Martínez
The verb following $nun^3$ is potential aspect, while the positive form in the following clause is perfect or progressive aspect.

(17) $nun^3$ k-a$^2$hanj$^2$ yu$^3$hunj$^2$ cha$^1$na$^1$ $|$ si$^4$sto$^{43}$ k-a$^3$hanj$^3$.
    NEG POT-go woman $|$ man PERF-go
    ‘A woman didn’t go. A MAN went.’

(18) $nun^3$ ki$^2$-ranj$^2$=sij$^3$ na$^3$to$^{32}$ $|$ nu$^3$ta$^1$ ki$^3$-ranj$^4$=sij$^3$
    NEG POT-buy=3M plantain $|$ tamale PERF-buy=3M
    ‘He didn’t buy plantains. He bought TAMALES.’

(19) $nun^3$ k-a$^2$taj$^2$=unj$^3$ taj$^{13}$ $|$ tu$^1$ku$^1$hnaj$^1$ bin$^3$ a$^3$taj$^3$=unj$^3$
    NEG POT-speak=3F that $|$ correct be.PROG speak.PROG=3F
    ‘She didn’t say that. She says it’s correct.’
But not all tokens of $nun^3$ in the corpus study evidence the aspect toggling.

(20) $nun^3$ $ki^3$-$na^3$ $bij^3$
NEG  PERF-finish
$ki^3$-$nu^3$ $to=h^4$ $yu^3$ $bej^3$ $ta^3$
PERF-wind=$1D.INC$ thread  this
‘We did not finish winding this thread.’
# Appendix

## Focus-sensitive Negation

### Partial Survey of Mixtec Varieties

<table>
<thead>
<tr>
<th>Language</th>
<th>Scholar</th>
<th>Focus-Negation</th>
<th>Negation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamiltepec Mixtec (mxt)</td>
<td>Johnson (1988)</td>
<td>ñima</td>
<td>na-, ma-</td>
</tr>
<tr>
<td>Ocotepec Mixtec (mie)</td>
<td>Alexander (1988)</td>
<td>nsúú</td>
<td>ma, nduú, ñaá</td>
</tr>
<tr>
<td>Silacayoapan Mixtec (mks)</td>
<td>Shields (1988)</td>
<td>axuú</td>
<td>a, ko</td>
</tr>
<tr>
<td>Coatzospan Mixtec (miz)</td>
<td>Small (1990)</td>
<td>ñá te</td>
<td>ñá</td>
</tr>
<tr>
<td>Alacatlatzala Mixtec (mim)</td>
<td>Zylstra (1991)</td>
<td>siví, ama</td>
<td>on, vása, tonally</td>
</tr>
<tr>
<td>Diuxi-Tilatongo Mixtec (xtd)</td>
<td>Kuiper and Oram (1991)</td>
<td>ñaðu</td>
<td>ma, ña, tu, ñatu, ñayo, mayo</td>
</tr>
<tr>
<td>Concepción Pápalo Cuicatec</td>
<td>Bradley (1991)</td>
<td>nkwá</td>
<td>nkwá</td>
</tr>
<tr>
<td>Chalcatongo Mixtec (mig)</td>
<td>Macaulay (1996)</td>
<td>niású</td>
<td>tu=, túu</td>
</tr>
<tr>
<td>Yosondua Mixtec (mpm)</td>
<td>Farris (1992)</td>
<td>ansu</td>
<td>tu</td>
</tr>
<tr>
<td>Copala Triqui (trc)</td>
<td>Hollenbach (1992)</td>
<td>nuwee&lt;sup&gt;4&lt;/sup&gt;</td>
<td>ne&lt;sup&gt;3&lt;/sup&gt;, ze&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Chicahuaxltla Triqui (trs)</td>
<td>Good (1979)</td>
<td>se&lt;sup&gt;4&lt;/sup&gt;</td>
<td>nun&lt;sup&gt;3&lt;/sup&gt;, si&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
References


