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?
ki^{3}ranj^{4}=sij^{3} na^{3}to^{32} cha^{2}=sij^{3} nih^{4}?
buy.perf=3m plantain eat.pot pol.int

(1) **nun^{3}** ki^{2}ranj^{2}=sij^{3} na^{3}to^{32} cha^{2}=sij^{3} | nu^{3}ta^{1} ki^{3}ranj^{4}=sij^{3} cha^{2}=sij^{3}.
NEG POT-buy=3M plantain eat.POT=3M | tamale PERF-buy=3M eat.POT=3M
'He didn't buy plantains to eat; he bought TAMALES to eat.'

(2) **se^{4}** na^{3}to^{32} ki^{3}ranj^{4}=sij^{3} manj^{5} | nu^{3}ta^{1} ki^{3}ranj^{4}=sij^{3} aj^{5}.
NEG plantain PERF-buy=3M DIS.PART | tamale PERF-buy=3M DIS.PART
'He didn't buy PLANTAINS; he bought TAMALES.'

Why do negation strategies vary?

1. Examine the strategies used in a 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.
- Morphology/phonology/phonetics described in DiCanio (2008, 2010, 2012a,b, 2016).
- DEL Documentation project (2014 - present) focusing on text transcription, information structure, and prosody.

Syntax I

VSO basic word order

(3) k-a^{3}bi^{32} cha^{3}kaj^{5} chu^{4}ba^{43} tu^{3}kwa^{4}=chuj^{3}
PERF-exit pig inside house.POSS=3ANIM
'The pig left its house.'

Focus is realized via fronting

(4) Which animal was hungry?

cha^{3}kaj^{5} k-a^{3}chin^{3} chi^{3}hna^{32} ri^{3}ki^{3}
pig PERF-lack hunger stomach

'The PIG was hungry.'

Syntax II

TAM is realized via stem prefixation and tonal alterations.

- Progressive

(5) ranj^{4}=sij^{3}
buy=3M
'He is buying it.'

- Perfect

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

- Potential

(7) ki^{2}-ranj^{2}=sij^{3}
IRR-buy.IRR=3M
'He will buy it.'

Negators in Itunyoso Triqui

Description

1. nun^3 : standard negator, 'not' (cf. *ne^3* (trc), *nun^3* (trs))
   Hollenbach (1976) describes a tense/mood toggling in Copala

   (8) **nun^3** k-a^{2}hanj^2=sij^3 ni^{3}gyanj^5
   NEG go.POT=3M Tlaxiaco
   'He didn't go to Tlaxiaco.'

2. se^4 : counterfactual, 'not A, (but B)' (cf. *se^4* (trs))

   (9) **se^4** un^2 ki^3-ranj^4=sij^3 | cchih^2 ki^3-ranj^4=sij^3
   NEG nine PERF-buy=3M | ten PERF-buy=3M
   'He didn't buy NINE, he bought TEN.'

3. ni^{3}taj^2 : negative existential, 'be none' (cf. *taj^{32}* (trc), *ni^{3}taj^2* (trs))

   (10) **ni^{3}taj^2** yu^{3}hbej^3 ta^3 nun^{32}
   not.exist thread this be.inside
   'There is none of this thread inside it.'

4. si^3 : prohibitive, future negator (cf. *se^2* (trc), *si^2* (trs))
   Hollenbach (1976) describes a tense/mood toggling in Copala

   (11) **si^3** k-oh^3=nej^3 sa^{3}hanj^2

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?
ki^{3}ranj^{4}=sij^{3} na^{3}to^{32} cha^{2}=sij^{3} nih^{4}?
buy.perf=3m plantain eat.pot=3m pol.int

(12) **nun^{3}** ki^{2}ranj^{2}=sij^{3} na^{3}to^{32} cha^{2}=sij^{3} | nu^{3}ta^{1} ki^{3}ranj^{4}=sij^{3} cha^{2}=sij^{3}.
NEG POT-buy=3M plantain eat.POT=3M | tamale PERF-buy=3M eat.POT=3M
'He didn't buy plantains to eat; he bought TAMALES to eat.'

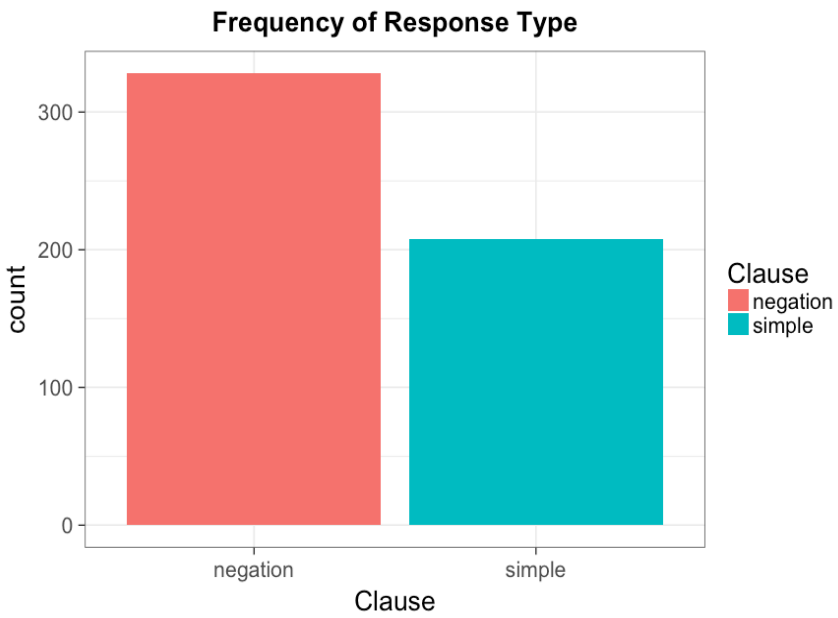
(13) **se^{4}** na^{3}to^{32} ki^{3}ranj^{4}=sij^{3} manj^{5} | nu^{3}ta^{1} ki^{3}ranj^{4}=sij^{3} aj^{5}.
NEG plantain PERF-buy=3M DIS.PART | tamale PERF-buy=3M DIS.PART
'He didn't buy PLANTAINS; he bought TAMALES.'

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

(14) **ni^{3}taj^{2}** si^{3} tsih^{1} chaj^{3} | chu^{2}naj^{2} cha^{43} ya^{3}haj^{3} mman^{4} ri^{3}ki^{3} cha^{3}tan^{32}
not.exist that sweet taste.3TOP | spicy taste pepper exist inside pinapple
cha^{43}=chuj^{3}.
eat.REAL=3ANIM
'They didn't taste SWEET; the peppers were SPICY in the pineapple it ate.'

Experimental Results I

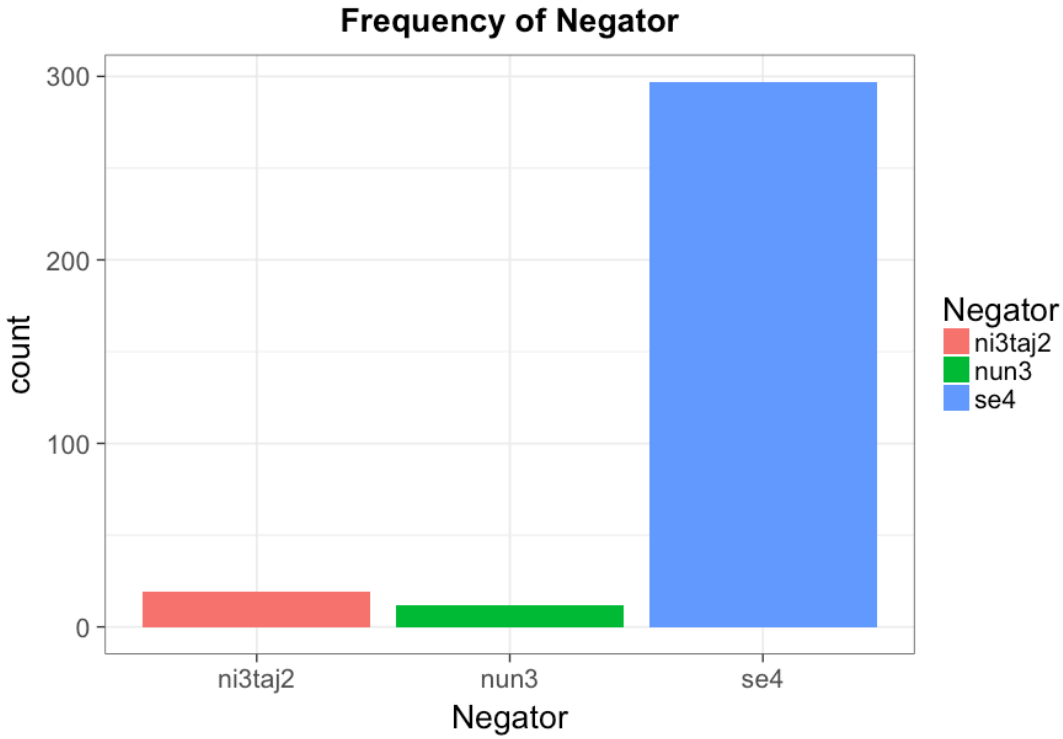
Negation Correction vs. Simple Correction

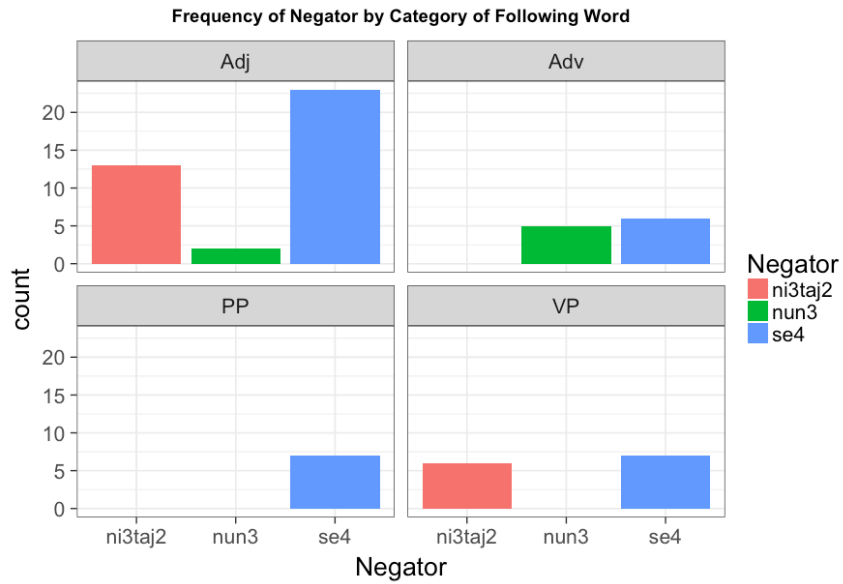


Speakers vary in whether they only supply the correction or in whether they also negate the focused assertion.

Experimental Results II

Frequency of Negator Types





/nun^3/ rarely occurs before NPs ($z = 2.6$, $p < .01$) but /se^4/ was extremely common before NPs ($z = 6.0$, $p < .001$). Caveat: PoS of the negated constituent was imbalanced.

Discussion - Results I

nun^3 occured in only 2% of the responses. It is dispreferred in contexts of correction.

se^4 is the most common negator in the experiment regardless of the constituent type. However, note:

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

(15) **se^4** si^3 tsih^1 cha^{43} ya^{3}haj^3 | chu^{2}naj^2 cha^{43} ya^{3}haj^3 mman^4
NEG COMP sweet taste.REAL pepper | spicy taste.REAL pepper exist
ri^{3}ki^3 cha^{43}=chuj^3.
inside eat.REAL=3ANIM
'The pepper didn't taste SWEET; the pepper tasted SPICY inside [what] it ate.'

- *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 = λx.[x went to Mexico City]
Assertion = Focus $\in$ Presuppositon
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]

Discussion - Results II

ni^{3}taj^2, the negative existential, is extended to predicate negation as evidenced in Adj and VP negation contexts.

- Like *se^4*, *ni^{3}taj^2* is also followed by a complementizer.

(16) **ni^{3}taj^2** si^3 tsih^1 chaj^{32} | chu^{3}naj^3 cha^{43} ya^{3}haj^3 mman^4 ri^{3}ki^3
not.exist that sweet taste.3TOP | spicy taste pepper exist inside
cha^{3}tan^{32} cha^{43}=chuj^3.
pinapple eat.REAL=3ANIM
'They didn't taste SWEET; the peppers were SPICY in the pineapple it ate.'

- *ni^{3}taj^2* never occured 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.

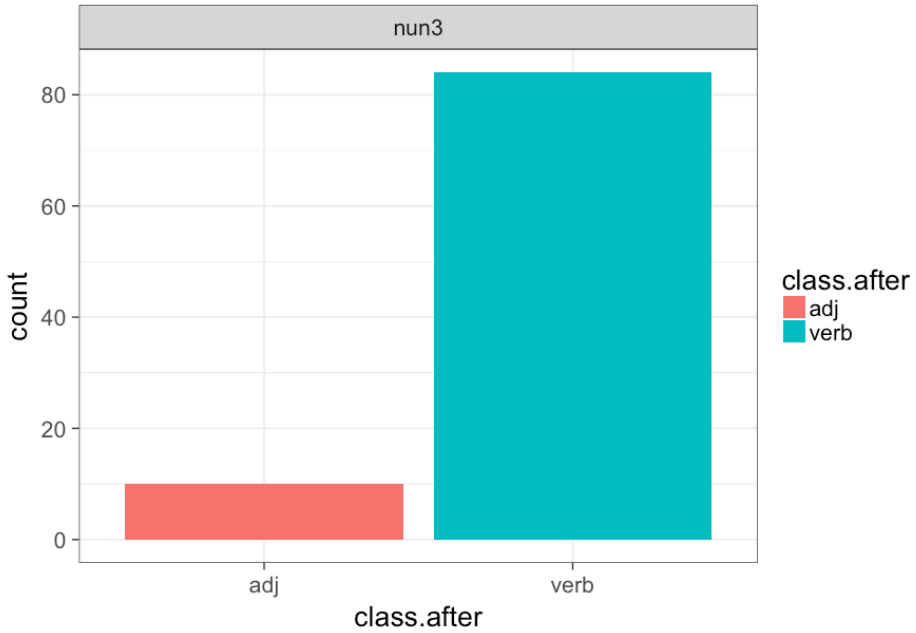
Corpus Results

Frequency of Negator Types

Negator	Count	Percentage
ni^{3}taj^2	45	27.1%
nun^3	94	56.6%
se^4	27	16.2%

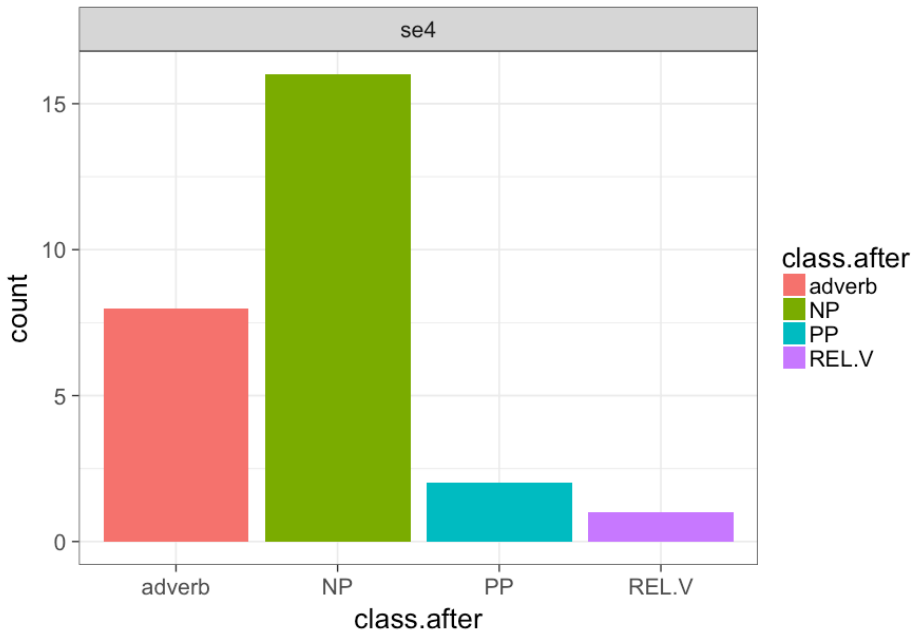
In contrast to the experiment, the relative frequency of *nun*^{3} and *se*^{4} are reversed. This supports the notion *se*^{4} is correlated with corrective focus.

Summary of Corpus Study - **nun**^{3}



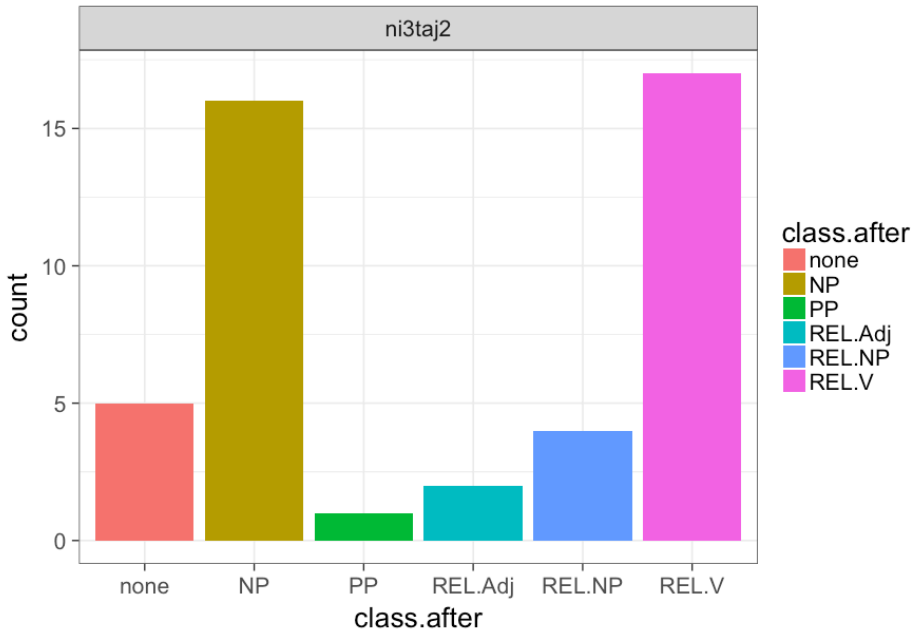
- never occurs before a noun or preposition
- adjectives pattern with verbs

Summary of Corpus Study - **se**^{4}



- Occurs frequently before nouns and the adverb *taj*^{13} 'like so'
- Several frequent expressions including:
  - *se*^{4} *taj*^{13} *baj*^{3} 'it isn't like that'
  - *se*^{4} *taj*^{13} *bin*^{3} 'it isn't like that'
  - *se*^{4} *taj*^{13} *hya*^{3} 'it doesn't do/go like that'
- Rarely negates VPs: preceding a CP only once in corpus.

Summary of Corpus Study - **ni^{3}taj^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

	Syntax	Focus Sensitive	Semantics
se^4	pre-nominal	yes	Foc $\notin \lambda x.\phi(x...)$
nun^3	pre-verbal	no	$\neg\phi$
ni^{3}taj^2	pre-nominal	no	$\neg$exist'(...)
ni^{3}taj^2 si^3	pre-verbal	yes	Foc $\notin \lambda P.P(...)$

- 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*^{3}*taj*^{2} and the complementizer *si*^{3}.
- *nun*^{3} is used for sentential (non-future) negation and as in Copala Triqui often triggers aspect toggling.

Next Steps

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*^{3}*taj*^{2} *si*^{3} used in future contexts also?
- Do other focus-sensitive particles exist in Itunyoso? (additive, exclusive and scalar particles)

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Aspect Toggling I

The verb following *nun*^{3} is potential aspect, while the positive form in the following clause is perfect or progressive aspect.

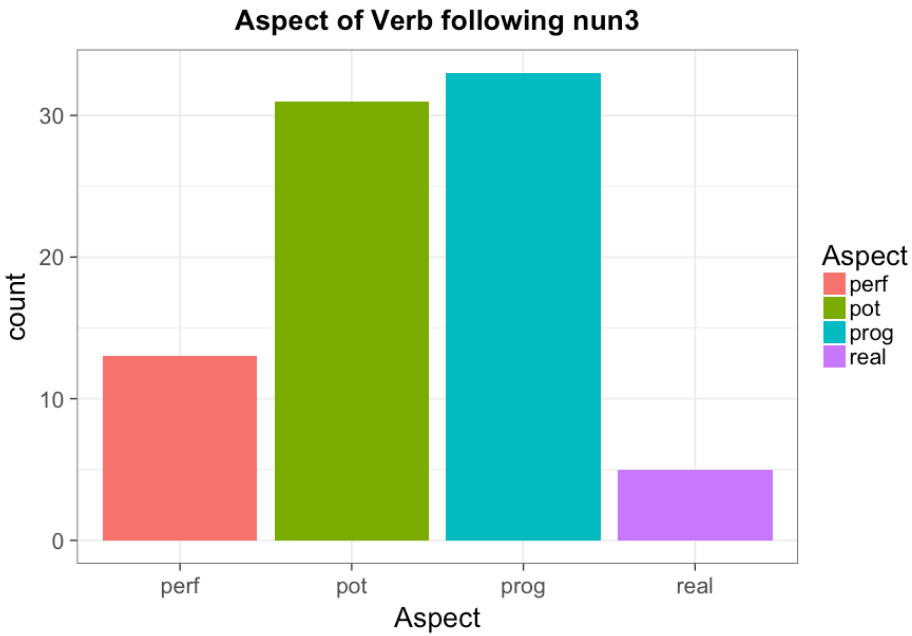
(17) nun^{3} k-a^{2}hanj^{2} yu^{3}hunj^{2} cha^{1}na^{1} | si^{4}sto^{43} k-a^{3}hanj^{3}.
NEG POT-go woman | man PERF-go
'A woman didn't go. A MAN went.'

(18) nun^{3} ki^{2}-ranj^{2}=sij^{3} na^{3}to^{3}2 | 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.'

Aspect Toggling II

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.'

Focus-sensitive Negation

Partial Survey of Mixtec Varieties

Table: Negation in Mixtecan

Language	Scholar	Focus-Negation	Negation
Jamiltepec Mixtec (mxt)	Johnson (1988)	ñima	na-, ma-
Ocotepec Mixtec (mie)	Alexander (1988)	nsuú	ma, nduú, ñaá
Silacayoapan Mixtec (mks)	Shields (1988)	axuú	a, ko
Coatzospan Mixtec (miz)	Small (1990)	ñá te	ñá
Alacatlatzala Mixtec (mim)	Zylstra (1991)	siví, ama	on, vása, tonally
Diuxi-Tilatongo Mixtec (xtd)	Kuiper and Oram (1991)	ñaðu	ma, ña, tu, ñatu, ñayo, mayo
Concepción Pápalo Cuicatec	Bradley (1991)	nkwá	nkwá
Chalcatongo Mixtec (mig)	Macaulay (1996)	niàsù	tu=, túu
Yosondua Mixtec (mpm)	Farris (1992)	ansu	tu
Copala Triqui (trc)	Hollenbach (1992)	nuwee^{4}	ne^{3}, ze^{2}
Chicahuaxlta Triqui (trs)	Good (1979)	se^{4}	nun^{3}, si^{2}

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