

# Anatomy of a conference handout

## The emergence of ejective fricatives in Upper Necaxa Totonac\*

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Talk's title, your name, and affiliation

Concise statement of the problem

Upper Necaxa Totonac (a.k.a. Patla-Chicontla) has an unusual phonemic inventory in that it has a series of three ejective fricatives (including the rare /ɬ'/), but no ejective stops, as in (1):

(1) Upper Necaxa consonants

	stop	aff.	fric.		app.	nas.
labial	p				w	m
alveolar	t	c	s	s'		n
lateral-alveolar			ɬ	ɬ'	l	
post-alveolar		č	š	š'	y	
velar	k		x			
glottal	ʔ					

This inventory differs from those of other Totonacan-Tepehuan languages in

- the presence of ejective consonants (although Tepehua may have ejective stops)
- the absence of the uvular stop /q/
- the presence of a phonemic glottal stop triggering vowel-lowering and backing /n/ to /ŋ/

Thesis

As it turns out, these features are connected by a series diachronic developments, namely

- an initial shift of Proto-Northern-Totonac \*q > ʔ in Upper Necaxa
- a collapse of fricative (F) + glottal stop sequences to ejective fricatives, \*Fʔ > F'

Totonac phonotactics rules out sequences of stops (T), removing the input for a homologous Tʔ > T' process. This results in a phonemic inventory with a series of ejective fricatives but no ejective stops — something which is, to my knowledge, unique among the world's languages.

### 1) The Totonacan-Tepehuan family

Very little work has been done on this language family and the relations between individual languages are still unclear. Our best guess at the family tree is as in Figure 1 (see also Map 1):

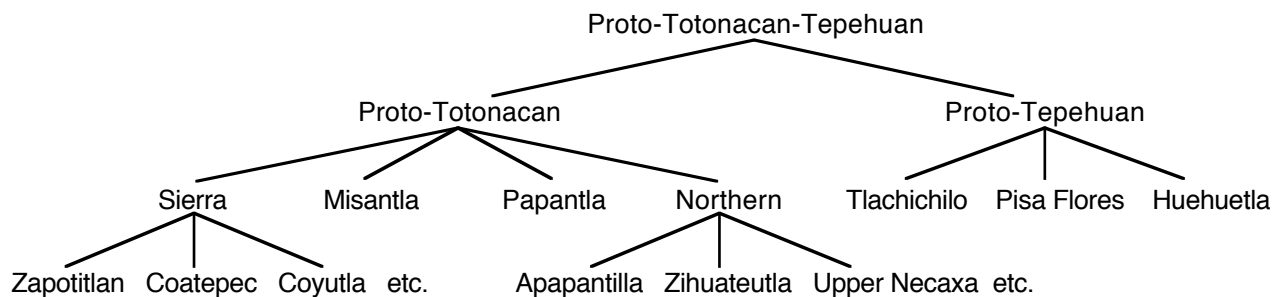


Figure 1: Totonacan-Tepehuan family of languages

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### Acknowledgements, abbreviations, etc.

## 2) Cognates of Upper Necaxa /ʔ/

Obvious cognates of Upper Necaxa (UN) words with /ʔ/ are found in a number of other Totonacan-Tepehuan languages. A few of these are given in (2) (sources for languages other than UN are listed in the references):

### (2) Cognates of Upper Necaxa /ʔ/

	<u>UN</u>	<u>Apapantilla</u>	<u>Papantla</u>	<u>Zapotitlan</u>	<u>Tepehua*</u>
a) 'far'	maʔát	maqát	máqat	maqát	máqati
b) 'sky'	aʔapú:n	aqapu:n	aqapu:n	aqapu:n	Tl. ʔaqapu:-
c) 'flower, bloom'	paʔɪ-	paqɪ-	paqɪ-	paqɪ-	—
d) 'freshwater shrimp'	aʔáčóʔ	aqačoq	aqáčoq	aqačoqa	Tl. aqč'óqni PF aʔáčóqni
e) 'knee'	coʔósni	coqosni	coqosni	—	Tl. ʔaqcoqóqni PF coʔótni H. coq'oti
f) 'wing'	peʔén	peqen	paqan	paqan	Tl. paqačuh PF. paʔáčuh H. peqstɪɪ
g) 'guacima (fruit)'	a:ʔé:štu	a:qé:štu	aqašti	—	Tl. ʔaqayštah
h) 'explode'	paŋ-	panq-	panq-	panq-	Tl. paq-
i) 'owl'	mó:ŋšu	mónqšũ	monqšnú	mónqšnu	PF mó:qšnu: H. mo:qšnu:

\*Tl. = Tlachichilco; PF = Pisa Flores; H. = Huehuetla

➤ \*q > ʔ occurred both between vowels (a, b) and preceding consonants (c); in Pisa Flores Tepehua the same shift seems to have occurred in some words (d – f) between vowels.

➤ UN /ʔ/ lowers /i/ to [e] and /u/ to [o], as does /q/ in other languages (d – g)

➤ adjacency to /ʔ/ or /x/ is the conditioning environment for [o] and most [e] (/e/ is phonemic in a few Northern Totonac stems, but it is not phonemic in other branches)

➤ /nq/ (phonetically [Nq]—Levy 1987; MacKay 1999) corresponds to UN /ŋ/ and /ŋʔ/ (h, i)

➤ there are a few instances of UN /ŋ/ inside of stems

➤ none of these stems have high vowels in adjacent syllables

➤ all other instances of /ŋ/ are associated with /ʔ/

➤ /ʔ/ in a /ŋʔ/-sequence disappears in coda position

➤ it reappears when it is needed to provide an onset to a following syllable:

paŋ- 'to explode'    páŋʔa 'it explodes'    páŋtɪ 'it exploded'

➤ nasals seem to be transparent to the vowel-lowering effect of /q/ and /ʔ/ (i)

The q ↔ ʔ correspondence is thorough-going (no words in UN have /q/) and is recognized as a dialect marker by speakers in the Necaxa Valley and surrounding regions.

**Bullets are a good alternative to large blocks of text**

### 3) Cognates of Upper Necaxa /F'/

The ejective fricatives /s'/, /š'/, and /ɬ'/ in UN correspond to /sq/, /šq/, and /ɬq/ sequences in other Totonacan-Tepehuan languages, as in (3):

(3) Cognates of Upper Necaxa /F' /

	<u>UN</u>	<u>Apapantilla</u>	<u>Papantla</u>	<u>Zapotitlan</u>	<u>Tepehua</u>
a) 'small; baby'	š'áta	sqata	sqata	sqata	Tl. s'at'a H. sq'at'a
b) 'lamp, candle'	pu:maʔs'ót	pu:maqsqo	pu:sqon	pu:maqsqo	—
c) 'corn husk'	š'a:m	šqa:m	šqam	šqa:m	—
d) 'to yawn'	taʔeɬš'apáʔ-	taqaɬšqapa:ta	aqšqapa:tnan	tašqapa:ta	—
e) 'lizard, iguana'	š'o:lúlu	šqo:lulu	šqo:lúlu	šqo:lulu	Tl. šqu:lúɬ
f) 'to burn, cook'	ʔoyú: 'burn garbage'	ɬkoyunún 'burn'	ɬkoyú 'cook'	ɬkoyunan 'bake in kiln'	—
g) 'gums'	ʔeɬ'éwi	qaɬqewi	qaɬqawi 'jawbone'	—	—
h) 'crooked, bent'	ʔawíli	ɬqawili	ɬqawili	—	—

- UN F' has the same vowel-lowering properties as /q/ in other languages (b, e, f, g)
- synchronic Fʔ sequences remain sequences of two consonants:

*iš-* '3SG:POSSESSIVE' + *ʔo:lú* 'old man, husband' > *išʔo:lú* 'her husband', \**iš'o:lú*

These facts point to the origin of F' in the collapse of historical \*Fq sequences. The same process might be expected to give rise to ejective velar fricatives /x'/ and ejective stops, however, ʔ/xʔ/: /xq/ sequences seem not to exist in other Totonacan languages

- the reflexes of Proto-Totonacan \*x differ phonologically from other fricatives
- in Papantla /xT/ > [hT] (Levy 1987)
- in UN, /x/ has allophones [x] and [h], the latter becoming phonetically a voiceless extension of a preceding vowel (i.e. /Vx/ > [VV])
- in Misantla, \*x corresponds exclusively to /h/; hT clusters are unattested (MacKay 1999)

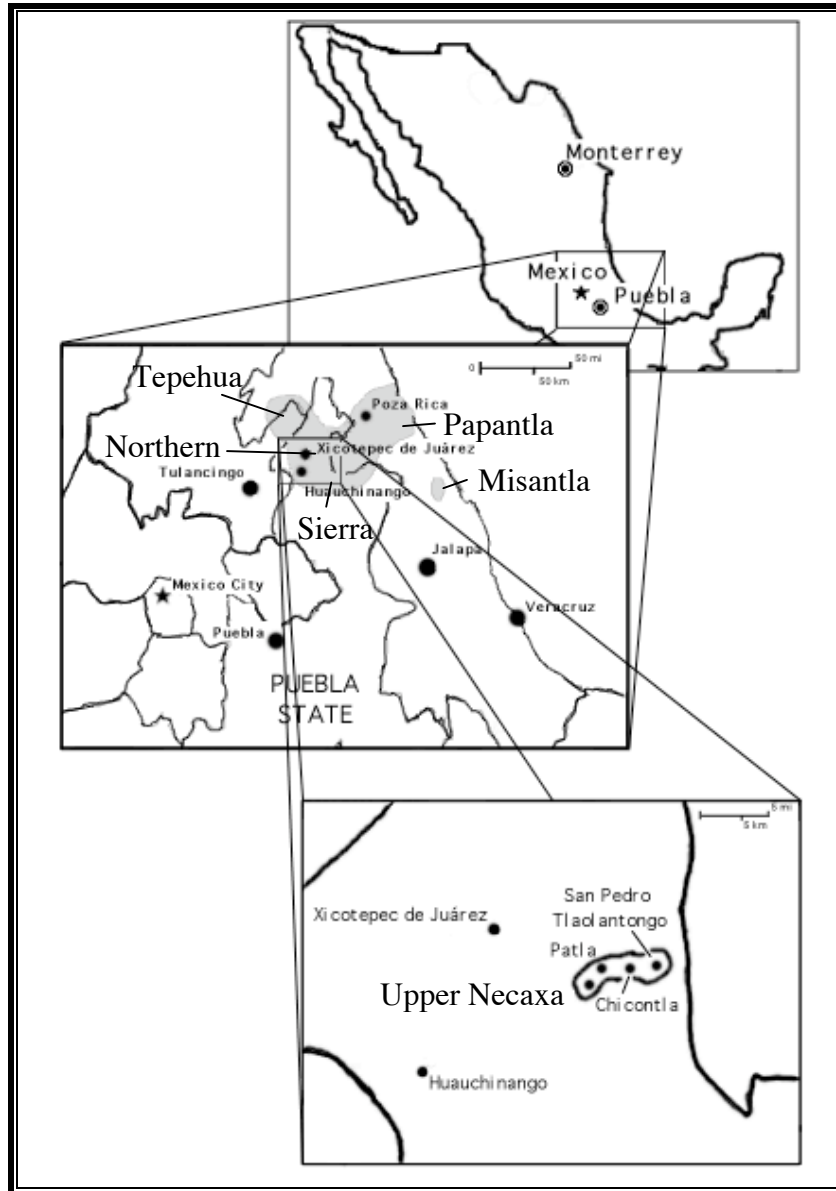
ʔ Tʔ: Totonac phonotactics rule out TT clusters (McQuown 1990; Levy 1987; MacKay 1999), eliminating the input \*Tq which might have created T' in UN

### 4) Conclusion — Summarize your conclusions

The evidence points to Upper Necaxa F' arising through a familiar diachronic sequence:

$$Fq > Fʔ > F'$$

Even though the individual steps in the process are not in themselves remarkable, their net result is a highly marked phonemic inventory unique among the world's languages.



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Map 1: Totonac-Tepehua language area

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