

Overview

Two phenomena: **Final stop/affricate aspiration** and **final sonorant devoicing**

- **Tz'utujil**: aspiration, devoicing, nasals devoice only word-finally

(1) Examples of final aspiration and final devoicing

- chikop* [tʃikɔpʰ] 'animal'
- saqb'ach* [saqʰbáʃʰ] 'hailstone'
- way* [waj] 'tortilla'
- warnaq* [waɾnaqʰ] 'he has gone to sleep'
- meem* [me:m̥m̥] 'mute' (Dayley 1985)

- **Kaqchikel**: aspiration, devoicing, nasals don't devoice

(2) Examples from Kaqchikel

- xusök* [ʃusokʰ] 'he cut it'
- sokanel* [sokaneɽ] 'barber'
- mem* [mem] 'mute' (Bennett 2016)

- **Several languages** have variations of final aspiration, but not final sonorant devoicing

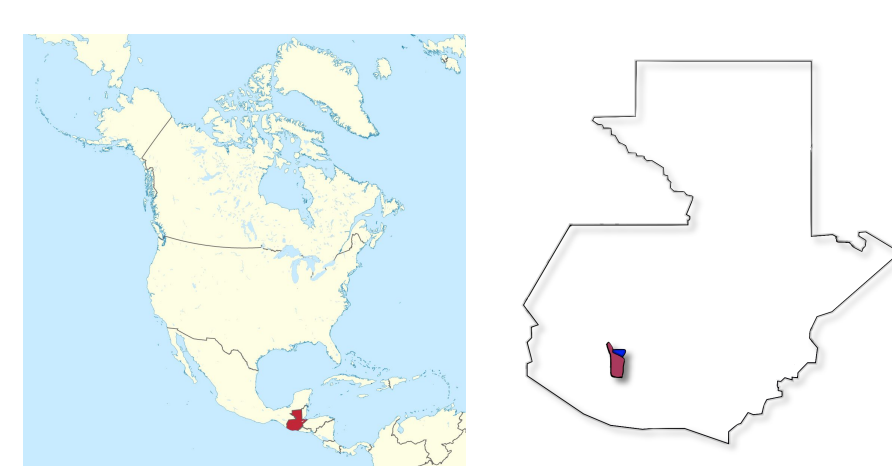
- majority of Mayan languages
- Sierra Popoluca (Elson 1947)
- Kashmiri neutralization (Vaux and Samuels 2005)

Positional [spread glottis] ([SG]) constraints can account for the Tz'utujil data and predict typological patterns seen across the Mayan family and beyond.

- Apparent implicational relationships
fin. nasal devoicing ⇒ fin. sonorant devoicing ⇒ fin. obstruent aspiration
- Raises questions about phonetic motivation, contrast, and features

Tz'utujil

Tz'utujil is a K'ichean-branch Mayan language spoken in the Guatemalan highlands around Lake Atitlán.



Contrasts a set of "simple" pulmonic stops and affricates (/p, t, k, q, t͡s, t͡ʃ/) with a glottalized (ejective and implosive) set (/b, d, k', q', t͡s', t͡ʃ', ʔ/).

Voiceless fricatives (/s, ʃ, x/) and sonorants (/m, n, l, r, w, j/).

Analysis

Constraints

*[-SG]CODA: Assign one violation mark for every consonant that occurs in the coda of a syllable and is [-SG].

IDENT([SG]): AOV for every corresponding input-output pair with differing values for [SG].

IDENT([CG]): AOV for every corresponding input-output pair with differing values for [CG].

*FINAL[-SG]: AOV for every consonant that occurs word-finally and is [-SG].

*VOICELESSNASAL (*N): AOV for every nasal consonant that is [-voice].

*VOICELESSSONORANT (*R): AOV for every sonorant consonant that is [-voice].

*[+SG]: AOV for every segment that is [+SG].

(3) /warnaq/ → [waɾnaqʰ] 'he has gone to sleep'

	/warnaq/	ID([CG])	*FINAL[-SG]	*N	*[-SG]CODA	MAX	DEP	ID([SG])	*R	*[+SG]
a.	warnaq		*W		**W			L	L	L
b.	waranaqa						**W	L	L	L
c.	wana					**W		L	L	L
d.	waɾnaq		*W		*W			*L	*	*L
e.	warnaqʰ				*W			*L	L	*L
f.	waɾnaqʰ							**	*	**
g.	waɾnaqʰ			*W				****W	***W	****W

(4) /ʃinwaʔi/ → [ʃinwaʔi] 'I have eaten' (5) /si:k'/ → [si:k'] 'tobacco'

	/ʃinwaʔi/	*FINAL[-SG]	*N	*[-SG]CODA	ID([SG])		/si:k'/	ID([CG])	*[-SG]CODA	ID([SG])
a.	ʃinwaʔi			*			si:k'		*	
b.	ʃin̥waʔi		*W	L	*W		si:kʰ	*W	L	*W

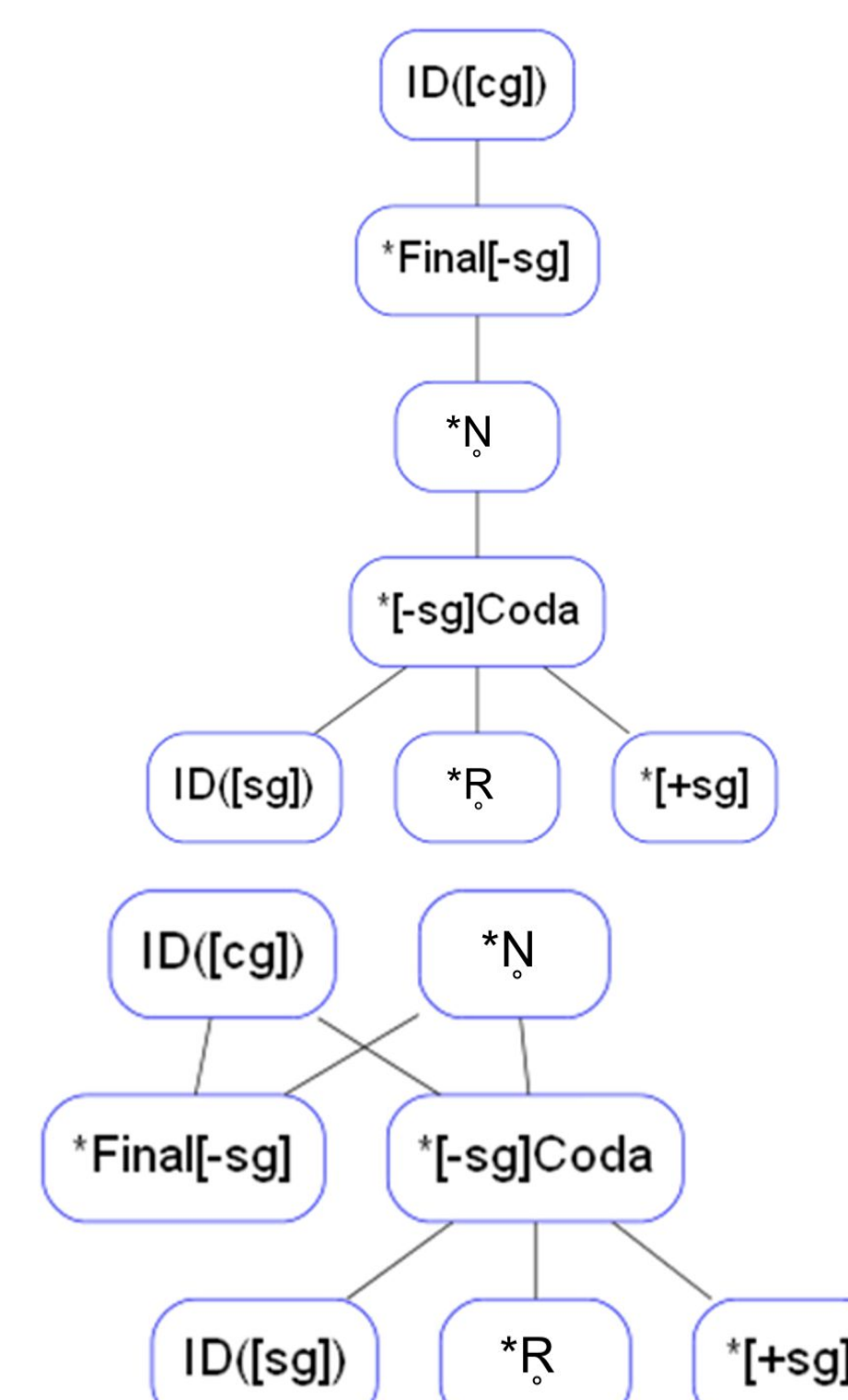
The ranking of constraints like *R and *N relative to spread glottis constraints can account for typological variation.

(6) /me:m/ → [me:m̥m̥] 'mute' (Tz'utujil)

	/me:m/ 'mute' (Tz'utujil)	*FINAL[-SG]	*N	*[-SG]CODA	ID([SG])
a.	me:m	*W	L	*W	L
b.	me:m̥m̥		*		*

(7) /mem/ → [mem] 'mute' (Kaqchikel)

	/mem/ 'mute' (Kaqchikel)	*N	*FINAL[-SG]	*[-SG]CODA	ID([SG])
a.	mem		*	*	
b.	mem̥m̥	*W	L	L	*W



Discussion

Implicational relationships

- Current constraint set predicts sonorant devoicing ⇒ obstruent aspiration - Is this true?
 - Final aspiration is much more widely attested within the Mayan family.
- Similarly, final nasal devoicing ⇒ other final sonorant devoicing

Complex onsets

(8) Preconsonantal obstruent aspiration in Tz'utujil

- t-kam-i* [tʰkamí] 'that he die'
- ch-paan* [tʰpa:n̥] 'in it' (Dayley 1985)

- Not clear that these are truly complex onsets (morphology)
- Is distribution different from sonorant devoicing?

Underlying [+SG] (Vaux and Samuels 2005)

- Unaspirated simple obstruents only appear before vowels, aspirated elsewhere
- Additional high-ranked *ChV constraint will produce attested outputs regardless of input.

Phonetic motivation

- Some accounts of final aspiration as phonetically motivated - enhances contrast between simple and glottalized obstruents where those contrasts would be obscured. (e.g. Bennett 2010)
- Does not apply to sonorant devoicing

Contrastivist hypothesis (Hall 2007, Drescher 2009)

- Features active in the phonology should be the features that create phonemic contrasts.
- Neither [voice] nor [SG] appears to be contrastive in the phonemic inventory of Tz'utujil, yet at least one of them is active in the phonology.

References

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