

Sibilant Harmony in Santiago Tz'utujil

SUMMARY: Using novel data from Santiago Tz'utujil (Mayan), we present and analyze a typologically rare process of /j/-assimilation to [s]. The new findings have a direct bearing on the understanding of sibilant harmony and allomorphy.

BACKGROUND: Santiago Tz'utujil (ST) is a dialect of Tz'utujil (K'ichean Mayan) spoken in Santiago Atitlán, Guatemala. Although grammars of other Tz'utujil dialects exist [1]-[2], ST phonology is not well-described. [1] briefly observes that ST is unique among other Tz'utujil dialects in having sibilant assimilation:

(1) [strident] → [+anterior] / ... [+anterior] ... __ ([1]'s formulation: $f \rightarrow s / \dots s \dots _$)

ST contrasts in this respect with San Juan Tz'utujil, where the rule is unattested according to [1].

RESEARCH QUESTION: All examples in [1] have /s/ in a verbal stem triggering assimilation on an immediately adjacent passive /-j/ suffix. Therefore, we investigate the scope and properties of the ST phenomenon in (1) to compare two possible analyses: (a) sibilant harmony vs. (b) phonologically-conditioned morphological alternation. We conclude that the sibilant harmony analysis is correct.

(2) *Properties of sibilant assimilation in ST*

(a) **asymmetry:** [+anterior] sibilants trigger assimilation of [-anterior] sibilants but not vice-versa. This is typologically rare if (1) is understood as sibilant harmony: according to [3] and [4], such a pattern is only attested in a single language (Tlachichilco Tepehua).

(b) **unidirectionality:** assimilation is progressive, i.e. the trigger always precedes the target (see (3)), which is rare for Mayan, where sibilant harmony is mostly bidirectional [5] (with the exception of Sakapultek [6]).

(c) **natural classes:** other [+anterior] sibilants can act as triggers, namely /s, ts, ts'/ (see (4)). This makes a sibilant-harmony analysis more likely.

(d) **domain of application:** whole morphemes and multiple vowels can intervene between the trigger and the target of assimilation (see (5)), which is also typologically rare [4]. Given that allomorphy is strictly local [7], if rule (1) operates across additional morphology between trigger and target, then an analysis in terms of a phonologically-conditioned morphological alternation is unlikely.

(e) **not morpheme-specific:** the effects of (1) can be seen in the passive suffix /-j/ (as in the examples in (3a), (4a-b) and (5)), but crucially, other morphemes as well (see (6)), and is thus not morpheme-specific.

NOVEL DATA: We present novel data from fieldwork with four ST consultants validating (2a-e), thus documenting and confirming the existence of this typologically-interesting pattern.

(3) *ST sibilant assimilation:* progressive assimilation of /j/ > [s] ((3a)), but not regressive ((3a) again), and not /s/ > [j] ((3b))

(a) /f-i-qas-a-f-a/
[f-i-qas-a-s-a]
COM-ABS3P-cut-V-PASS-SS
'They got cut.'

(b) /f-Ø-Ø-kum-sa-χ/
[f-Ø-Ø-kum-sa-χ]
COM-ABS3S-ERG3S-die-CAUS-SS
'She killed it.'

We illustrate (2c) by showing that /ts/ and /ts'/ are also a trigger for (1):

(4) *ST sibilant assimilation:* natural class of [+anterior, +sibilant] triggers process

(a) /f-Ø-tseeβ-e-f-a/
[f-Ø-tseeβ-e-s-a]
COM-ABS3S-mock-V-PASS-SS
'She was mocked.'

(b) /f-Ø-ts'ax-e-f-a/
[f-Ø-ts'ax-e-s-a]
COM-ABS3S-slap-V-PASS-SS
'He was slapped.'

As shown in (5), harmony applies at a distance, across more than one vowel and in linearly non-adjacent morphemes, confirming (2d). Assuming the Mirror Principle [8], this argues against an analysis in terms of a phonologically-conditioned morphological alternation. Finally, demonstrating (2e), notice that the nominalizer /-jik/ is another target morpheme for harmony (6):

(5) *ST sibilant assimilation across morphemes*

/f-Ø-sen-βa-f-a/
[f-Ø-sen-βa-s-a]
COM-ABS3S-naked-CAUS-PASS-SS
'He was undressed.'

(6) *ST sibilant assimilation in a nominalizing morpheme*

/ru-tsaq-fik/
[r-tsaq-sik]
GEN3S-make-NMLZ
'the making (of tortillas)'

In closely-related Kaqchikel, [9] has argued for an analysis of an analogous nominalizing suffix into a passive /-j/ and a nominalizer /-ik/. While this may be diachronically true of ST /-jik/, we show in the talk that this is not a tenable synchronic analysis for the language.

Given the generalizations in (2a-e), we conclude that ST exhibits a typologically rare type of sibilant harmony [3], [4]. In our talk, we further discuss whether the typological rarity of this harmony process (and specifically, the directional and featural asymmetries it exhibits; see (3a-b)) are best explained in terms of perceptual biases or grammatical considerations.

[1] Dayley, J. 1985. *Tzutujil grammar*. U. of California Press. [2] García Ixmátá, A. P. 1997. *Rukeemiik ja Tz'utujiil chii'*, Gramática Tz'utujiil. Guatemala: Cholsamaj. [3] Kosa, L. A. 2010. "Sibilant harmony: investigating the connection between typology and learnability". *Proceedings of ACLS*. [4] Hansson, G. 2001. *Theoretical and typological issues in consonant harmony*. UC Berkeley Doctoral Dissertation. [5] Bennett, R. 2016. "Mayan phonology". *Language and Linguistics Compass*, 10(10), 469-514. [6] DuBois, J. W. 1981. *The Sacapultec Language*. UC Berkeley Doctoral Dissertation. [7] Embick, D. 2015. *The morpheme*. Mouton de Gruyter. [8] Baker, M. 1985. "The Mirror Principle and morphosyntactic explanation." *Ll*. [9] Imanishi, Y. 2014. *Default ergative*. MIT Doctoral Dissertation.