

Prefixes in Navajo consonant harmony: Morpho-syntax determining phonological directionality

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The typology of vowel harmony shows a potentially systematic gap in the behaviour of prefixes. While they sometimes participate in harmony processes as targets, they almost never act as triggers (Baković, 2000; Fábregas & Krämer, 2020; Krämer, 2003). A similar asymmetry is observed in consonant harmony. We focus on a directionality reversal in prefix sequences in Navajo sibilant harmony. Long distance consonant harmony varies by and large according to the same parameters as vowel harmony systems, with stem control being the most pervasive pattern and regressive harmonization the default direction (Hansson, 2010). Unlike in vowel harmony, dominant-recessive systems are not documented for consonant harmony.

Navajo sibilant harmony is generally regressive, or, as stated by Hansson (2010), stem controlled. The rightmost sibilant in the word determines whether all preceding sibilants are anterior or posterior, as illustrated in (1). If there are no sibilants in the root, but two different sibilants in two prefixes, the rightmost usually determines the place of the preceding one. This directionality is reversed in the context of the s-perfective and the s-destruct prefixes in combination with a subject marker, as shown in the paradigms in (2) & (3). The first-person singular aspect-subject marker sequence in (2) & (3) is surprisingly realized with both sibilants as anterior even though the rightmost of the two is underlyingly posterior.

In our analysis of the reversal, we follow Fábregas & Krämer's syntactic approach to stem control in vowel harmony. Affixes that undergo harmony are syntactic heads. Features spread from roots or stems, i.e., the syntactically most deeply embedded items, to affixes. In the case of Navajo, absent a trigger in the lexical root, the stem-forming aspect marker dominates; as it was linearized before the person/number marker for independent reasons, this creates an apparent reversal of directionality. Implementing this in Stratal OT (Bermúdez-Otero, 2018; Kiparsky, 2000), we assume that the aspect marker is a stem-level affix, while agreement represents word-level affixation. In this case, the person marker is infixes into the output of the stem level. Since the aspect marker is part of that stem, its anteriority is protected by faithfulness. The harmony constraint is satisfied by unfaithfulness to the morpho-syntactically newer item (Tableaux 1 and 2).

In summary, directionality in stem- and suffix-controlled harmony systems is generally morpho-syntactically determined. In sequences of harmonizing prefixes or prefix-functional item sequences that lack a trigger in the stem/root, the syntactic status of the affixes determines the directionality too, with more deeply embedded prefixes acting as triggers, and prefixes or other functional items located higher up in the syntactic structure acting as targets. In Navajo, this also explains how regressive harmony reasserts itself if a sibilant is present in the lexical root, as shown in (4), as harmony with the deeply-embedded root is demanded from the earliest stratum. And it explains why directionality reverses in the examples in (3). In conclusion, the directionality reversal in Navajo consonant harmony thus confirms Fábregas & Krämer's structural approach to control in harmony.

All examples are drawn from Hansson (2010).

(1) Anticipatory sibilant harmony in Navajo (McDonough 1991) (Hansson, 2010, p. 149)

- a. /dʒ-i-z-dá/ [dzizdá] ‘he sat down’
 /dz-ɪf-l-ha:l/ [dzɪfha:l] ‘I tumble into the water’ (imperf.)
 b. /si-dʒé:ʔ/ [ʃɪdʒé:ʔ] ‘they (slender stiff objects) lie’
 /dz-ɪf-l-ts’in/ [dzists’in] ‘I hit him below [the belt]’

(2) Navajo: subject prefix paradigm for ‘s-perfectives’ (Faltz 1998:74) (p. 150)

	Singular	Plural
1st	s(-)is-	s(-)i:d-
2nd	sí(-)ní-	s-o:h
3rd	s-(Ø-)	s-(Ø-)

(3) Navajo: perseveratory harmony with ‘s-destruct’ prefix (McDonough 1991) (p. 151)

- /s-ɪf-l-jé/ [sisxé] ‘I’m killing it (imperf.)’
 /s-ɪf-dlí/ [sisdlí] ‘I froze to death (perf.)’

(4) Navajo: harmony from root overrides prefix harmony (McDonough 1991) (p. 151)

- /s-ɪf-l-ʒe:ʔ/ [ʃɪʒe:ʔ] (no gloss)

	/s-l-jé/	PHONO	HARMONY	ROOT-FAITH	FAITH
a.	sɪjé	*!			
b.	sxé				*
c.	ʃxé				**!

Tableau 1: ‘I’m killing it (imperf.)’ at stem level

	/ɪf-sxé/	ONSET	HARMONY	STEM-FAITH	FAITH
a.	ɪʃsxé	*!	*		
b.	issxé	*!			
c.	sɪʃxé		*!		
d.	ʃɪʃxé			*!	*
e.	sissxé				*

Tableau 2: ‘I’m killing it (imperf.)’ at word level

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