Restricting the Power of Cophonologies: A Representational Solution to Stem Allomorphy in Uspanteko

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Introduction

The Issue
- Debates on structure of the morphology-phonology interface
  - Morpheme-based
  - Word-based (e.g. cophonologies)
- Empirical issue: Non-concatenative morphology
- Uspanteko shows a complex pattern of stem allomorphy, which has so far only been analyzed with cophonologies (Bennett & Henderson 2013; B&H)
- Our claim: More restrictive, morpheme-based analysis possible

Uspanteko
- Mayan language spoken in Guatemala
- Interactions between stress, syllable weight, vowel quality and pitch accent

Our Claims
- Morpheme representations can contain metrical templates (Saba Kirchner 2013, Isosad 2016, Köhnlein 2016)
- Pitch-accent contrasts can be a surface expression of contrastive metrical representations, e.g. Morén-Duolljá 2013 (Swedish), Isosad 2016 (Scottish Gaelic), Köhnlein 2016 (Franconian)
- Our analysis, in line with Generalized Non-Linear Affixation, is more restrictive than nominal cophonologies (Bermúdez-Otero 2012 for conceptual arguments)

Some Relevant Facts: Simplex Words

Stress
- Stress falls on one of the last two syllables
- Heavy syllables occur only word-finally, always stressed
- Two syllable types count as heavy: VV(X) and VC (here: focus
- VVV, VV, VVV [silk’t waal] ‘son’ [sik’t waal]

Pitch Accent
- Language has a pitch-accent (PA) contrast
  - Falling tone (indicated with acute accent, H)
  - Level tone (not transcribed)
- Distinctive only in word-final stressed long vowels: VV, VV
  - [ššik’t] ‘squirrel’, [ššim] ‘lime (mineral)’
- Penultimate stress = always falling PA: VV, VV
- [ššig] ‘yesterday’, [šši] ‘today’
- Final light syllables never have falling PA

Our Analysis: Basics

- Tenets from Köhnlein (to appear), based on foot inventory in Kager (1993)
- Uspanteko has moraic trochees and syllabic iambs (‘default’ quantity-sensitive feet)
- Interaction with post-lexical H* derives surface pitch accent
- Maximal one tone per mora — no PA contrast in light syllables
- Moraic trochee: H* cannot associate to foot dependent (µ) (de Lacy 2002)
- Syllabic iambs: both µ and stressed syllable licensed by the syllabic head (therefore µ*), can associate with H*

Our Analysis: Stem Allomorphy

Underlying Representations

Prefixes
- Prefix: Segmental information with floating moraic trochee
- Pattern A: Bimoraic vowel without metrical template
- Pattern B: Two floating moras without metrical template (same as monomoraic vowel and one mora floating)
- Pattern C: Bimoraic vowel associated with iambic template
- Pattern D: Bimoraic vowel associated with trochaic template

Roots

Derivation

- Feet right-aligned, maximally binary
- Feet preferably parse all syllables/moras
- Moras associated with a vowel cannot be manipulated
- All else being equal, iams are default (cf. B&H)

Data: Affixed Complex Words

Overview

- Allomorphy triggered by a set of possessive prefixes
- Sometimes introduces PA/stress shift
- Stress shift accompanied by vowel shortening in word-final syllables

Main Patterns for Final Stressed Long Vowels

- Pattern A: Prefix introduces falling PA,VV preserved, final stress
  - [ššoom] ‘[aw-oom]’ avocado’ ~ ‘your avocado’
- Pattern B: Prefix introduces falling PA, VV shortens, penultimate stress
  - [ššoom] ‘[in-oom]’ ‘chair’
- Pattern C: Prefix falling PA blocked, VV preserved, final stress
  - [ššoom] ‘[in-oom]’ ‘weaving’ ~ ‘my weaving’
- Pattern D: VV with falling PA in isolation stays the same
  - [ššoom] ‘[in-oom]’ ‘squirrel’ ~ ‘my squirrel’

Tonal Analysis with Cophonologies by B&H

- Contrast between trochaic and iambic feet, iams default
- Some words have a lexical H, possessive prefixes introduce H
- H restricted to the penultimate vocalic mora of a word
- H attracts stress
- Four metrical cophonologies:
  - Pattern A: MAX(T), IDENT LENGTH >> NONFINALITY(T, 0)
  - Pattern B: NONFINALITY(T, 0) >> MAX(T) >> IDENT LENGTH
  - Pattern C: NONFINALITY(T, 0), IDENT LENGTH >> MAX(T)
  - Pattern D: MAX(0O(T), MAX(T)) >> NONFINALITY(T, 0)

Pattern A: Prefix introduces falling PA, VV preserved, final stress

Pattern B: Prefix introduces falling PA, VV shortens, penultimate stress

Pattern C: Prefix falling PA blocked, VV preserved, final stress

Pattern D: VV with falling PA in isolation stays the same

Discussion & Conclusion

Our Analysis explores representational possibilities provided by autosegmental phonology, which are independently motivated (cf. Generalized Non-Linear Affixation)
- Nominal cophonologies do not have a principled limit. Are such analyses falsifiable? Do they make predictions?
- For instance, our approach predicts that H of falling PA is restricted to the penultimate stressed mora; contrastive H on final moras excluded by metrical analysis
- Note: Differences in the derivation of simplex and complex words (omitted due to space restrictions) are formalized in Stratal OT (stem & word level); maximally three strata; each has been independently motivated