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, Iosad 2016, Köhnlein 2016)
- Pitch-accent contrasts can be a surface exponent of contrastive metrical representations, e.g. Morén-Duolljá 2013 (Swedish), Iosad 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 V?C (here: focus on long vowels)
  - V.VV, *V.VV, *VV.V [alk?.waal] 'son' *[alk?.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: $V^{H}V$, VV
  - [kúuk?] 'squirrel', [tʃuun] 'lime (mineral)'
- Penultimate stress = always falling PA: V^{H}.V, *V.V
  - [í.wir] 'yesterday', *[i.wir]
- Final light syllables never have falling PA

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

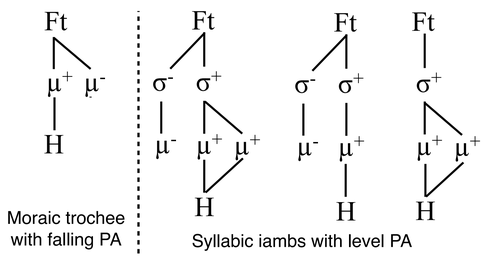
- Pattern A: Prefix introduces falling PA, VV preserved, final stress
  - [oox] ~ [aw-óox] 'avocado' ~ 'your avocado'
- Pattern B: Prefix introduces falling PA, VV shortens, penultimate stress
  - [teem] ~ [ín-tem] 'chair' ~ 'my chair'
- Pattern C: Prefix falling PA blocked, VV preserved, final stress
  - [keem] ~ [in-keem] 'weaving' ~ 'my weaving'
- Pattern D: VV with falling PA in isolation stays the same
  - [kúuk?] ~ [in-kúuk?] 'squirrel' ~ 'my squirrel'

Tonal Analysis with Cophonologies by B&H

- Contrast between trochaic and iambic feet, iambs 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 nominal cophonologies:
  - Pattern A: MAX (T), IDENT(LENGTH) >> NONFINALITY(T, σ)
  - Pattern B: NONFINALITY(T, σ) >> MAX (T) >> IDENT(LENGTH)
  - Pattern C: NONFINALITY(T, σ), IDENT(LENGTH) >> MAX (T)
  - Pattern D: MAX-OO (T), MAX(T) >> NONFINALITY(T, σ)

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
- Maximally one tone per mora —> no PA contrast in light syllables
- Moraic trochee: H* cannot associate to foot dependent (μ^-) (de Lacy 2002)
- Syllabic iamb: both μ in stressed syllable licensed by the syllabic head (therefore μ^+), can associate with H*



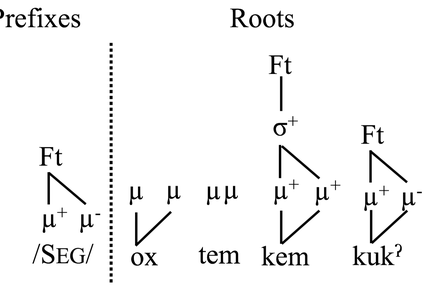
Moraic trochee with falling PA

Syllabic iambs with level PA

Note: Superscripts are only notational devices, not phonological objects

Our Analysis: Stem Allomorphy

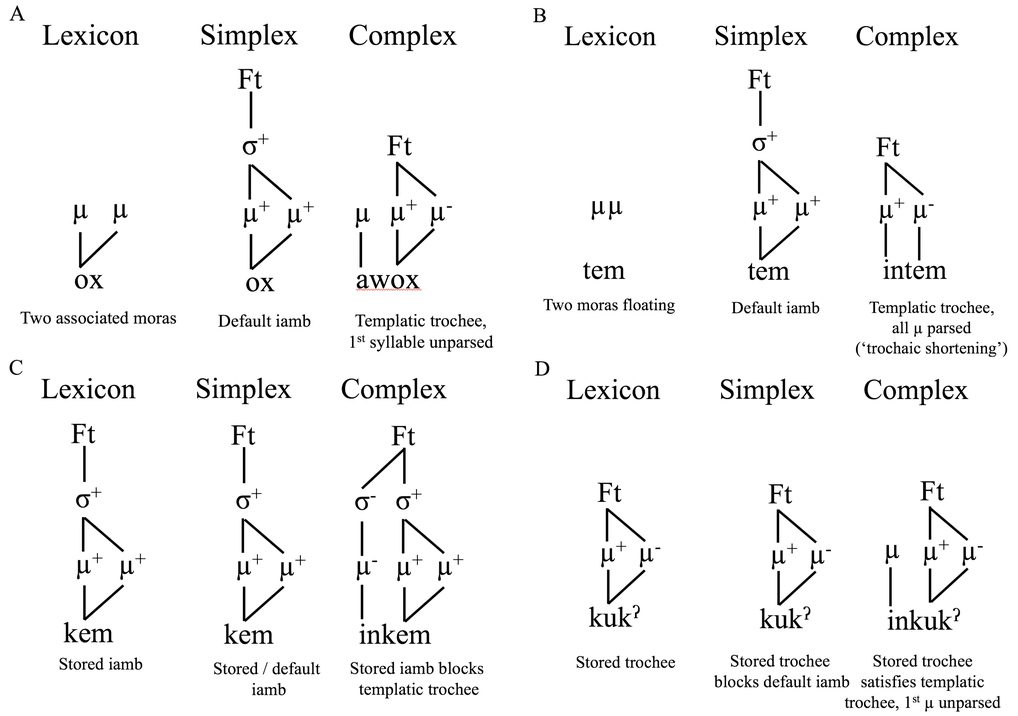
Underlying Representations



- 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

Derivation

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



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