Seto vowel harmony and neutral vowels

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A positive vowel harmony imperative generates real phenomena other approaches don’t.

Seto’s (Finno-Ugric, Estonia) harmonically paired neutral vowels break most approaches to harmony. I show that, with some additions, Kimper’s new framework for harmony captures the language cleanly using non-local feature spreading combined with the notion of trigger strength.

Seto vowel harmony

• Kiparsky and Pajusalu (2001): Seto (Finno-Ugric, Estonia) has progressive front-back harmony.

• Stress: word initial.

• No prefixes.

• These harmonic alternations:
  /ü/–/u/  /ö/–/o/  /ä/–/a/  /e/–/ə /

• Three neutral vowels:
  /ü/ transparent to harmony in all contexts, but paired with /i/ word initially.
  /a/ transparent to harmony word initially, paired with /i/ word initially and /a/ elsewhere.
  /ə/ blocks harmony all contexts and triggers back harmony, paired with /i/ word initially.

• Sample front-back alternations:
  nøña-ʻt-ta-nu ʻi ʻukʼed (Pp.) – nøn-ˈtu-ta-nu ʻi ʻukʼed (Pp.)
  tůt-tre-kene ʻihn ʻañne (dim.) – maana-kana ʻihn ʻañne (dim.)
  kivs-bal ‘a taltel – lišni-bal ‘a taltel
  isəis-bal ‘a taltel – lišni-bal ‘a taltel

• Stems containing only transparent vowels always select front suffixes.

• Both common approaches to transparent vowels fail for Seto:
  • Unpaired transparent vowels are underspecified for the harmonic feature and underspecified segments are immune to harmony (Clements, 1976; Kiparsky, 1981; Archangeli and Pulleyblank, 1994; Ringen and Vago, 1998).
  • Harmony creates back-harmonic tokens of front transparent vowels but later neutralization reverses them to their original front value (Bach, 1968; Clements, 1976; Walker, 1998; Bakovic and Wilson, 2000).

• Neither works: The three neutral vowels must all contrast for (Biax).

• The model should not require paired neutral vowels: Related languages Votic and Veps have similar systems with unpaired neutral vowels.

Trigger Competition and Spread

• Trigger Competition (Kimper, 2011) is a new framework for vowel harmony.

• Autosegmental representation which permits crossing lines:
  \[ \begin{array}{c}
  \text{Parameter} \\
  \text{Value} \\
  \text{Distance [k]} \pm 0.4 \\
  \text{Linked Trigger [k]} \\
  \text{Direction} \\
  \text{Vowel qualities} \\
  \text{Height} \\
  \text{Width} \\
  \end{array} \]

• The trigger marked with an underline is a particular instance of spreading which provides the impetus for spreading.

• Spread[\(f\): For a feature \(f\), assign +1 for each segment linked to \(f\) as a dependent.

• Uses Serial Harmonic Grammar (Pater et al., 2008, Pater, 2010, Mullin, 2011): Constraints are weighted, and derivations proceed one step at a time.

• Multiplier parameters affect the reward assigned by Spread[\(f\):
  • The distance multiplier \(k\) is applied once for each unit of distance between trigger and target.
  • The trigger quality multipliers \(x[.]\) are applied to triggers with a particular vowel quality.

• Segment that cannot harmonize due to some basic markedness or faithfulness constraint, and are not strong enough to trigger harmony, are skipped and are transparent.

• Those that cannot harmonize, but are strong enough to trigger harmony, are opaque.

Seto in Trigger Competition

• Markedness constraints ban non-initial /i/ and /a/ prevent neutral vowels from alternating. Word-initial segments have no incentive to alternate.

• Long-distance spreading allows backness to spread past transparent vowels.

• Assigning a low trigger strength to the transparent vowels prevents them from spreading frontness (above right).

• A high trigger strength allows opaque /i/ to spread backness (below).

Conclusions and future work

The addition of new mechanisms for directionality and a new source of harmony triggers enables Trigger Competition to capture this difficult case neatly, and shows promise for variable-harmony cases like Hungarian vacillation.

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References


What can be a harmony trigger?

• Kimper: For any given target, the nearest segment linked to each feature value can be a trigger.

• Wrongly predicts that all transparent vowels are icy targets: Once a front vowel is linked to a transparent vowel, front harmony cannot spread further in (a).

• My proposal: The grammar can optionally allow for triggers that are already inside harmonic domains, as in (c).

How is directionality enforced?

• Kimper: Directionality is an open issue.

• My proposal has two pieces:
  • New direction parameter limits spreading from a trigger that is to the right (or left) of its target.
  • New constraint prevents harmony from starting anywhere but the start of the word—as in (a)—neutral vowels interfere:

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