Evidence for contrastive feature hierarchies in Old Norwegian height harmony

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Context
What motivates and constrains variation in neutral harmony?
- Asymmetric inventory shapes creates illicit harmony targets.

Neutral [low] [a] in Bantu perseveratory height harmony

In trigger positions, non-alternating segments may be harmonic (e.g. Pende) or neutral (e.g. Shona). Various phonologists have taken this dichotomy as evidence that “minimal contrastivity” (harmonic pairing) plays an important role in phonology and can optionally limit harmony systems only to harmonically-paired segments—e.g. in the exclusion of non-contrastive (unpaired) segments—e.g. [i, u] in (Fortune 1955, Beckman 1997; Hyman 1999). In contrast, Old Norwegian orders its features [back] > [high] > [low] [a] (Calabrese 2005, Nevins 2010).

   - gu-dig-il-a vendre pour
   - gu-ţng-il-a háitir pour
   - gu-bgmb-el-a abandonner pour
   - gu-lgmb-ăl-a demander pour
   - gu-gs-ăl-a bacher pour
   - "gu-gs-ćl-a"

2. Shona neutral [a] (Fortune 1955, Beckman 1997)
   - ip-ir-a be evil for
   - ip-ir-a be evil for
   - per-cr-e a end in
   - shgmb-is-a make wash
   - *shgmb-es-a

Problem
Contrastive relativization is violated by height harmony in Old Norwegian which displays both harmonic and neutral unpaired non-high vowels.

Representational motivations
Expanding on Drešer’s (2009) Contrastive Hierarchy theory, I argue that neutral harmony patterns like these are representationally motivated and constrained; no additional grammatical mechanisms are needed.

Representational assumptions
- Privative multiterrier height features (cf. Clements 2015)
- Distinctive features and sounds are categorized hierarchically and the feature ordering is cross-linguistically variable
- features have different scopes/domains in different languages
- Contrastivist Hierarchy (Hall 2007): phonological activity is limited by feature scope

Alternate feature orderings of [open₁] (non-high) and [open₂] (low) produce different feature specifications on [a] which motivate either harmony (Pende) or harmony neutrality (Shona).

Analysis
Old Norwegian short vowels feature two groups of harmonically unpaired segments:
- [open₁] [i, u] and [open₂] [a]
- [open₁] [e, o] and [open₂] [a, o] within the domain of the harmony feature [open₁] motivating [i, u]-neutrality and [a]-harmony.

Old Norwegian feature specifications

Summary
What motivates and constrains neutral harmony?
- Contrastive feature hierarchies motivate neutral harmony in asymmetric sound inventories
- Neutral harmony variation reflects different feature ordering

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