Partial Transparency in Harmony: A Dynamic Gestural Model

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Introduction

- Coeur d’Alene Salish faucal harmony: vowels surface as retracted variants before faucal (uvular and pharyngeal) consonants (Doak 1992, Bessell 1998)

Non-Faucal Context:  
- [tʰɛʔ-ʃ] ‘it is long’
- [tʰɛʔ-ɑlqʔ-ʃ] ‘he is tall’
- [dɪlɛm-ɑlqʔ-ʃ] ‘train’
- [ʃɛʔ-ɛʔ-ʃ] ‘he twisted it’
- [niʔ-sæʔtʃ-ɛʔ-ʃ] ‘crank (on a car)’
- [ʔɛ-ʃɛʔ-ʃɛʔ-ɛʔ] ‘his hair is curled’

Vowels retract to different degrees in domain of harmony:

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Proposals:
1) Mapping of /i/ -> [ɛ] in Coeur d’Alene faucal harmony represents a case of partial transparency to harmony
2) Partial transparency is result of competition between dynamically-defined gestures, as in Gestural Harmony Model (Smith 2016)

Gestural Analysis of Faucal Harmony

- Faucal harmony is result of overlap by uvular/pharyngeal consonant’s harmonizing tongue body retraction gesture
- Overlap of palatal gesture of high front /i/ and harmonizing tongue body retraction gesture results in gestural antagonism
- Different degrees of faucal harmony retraction observed for /i/ and /i/ are result of different specified gestural blending strengths
- Weak /i/ fully overpowered by retraction gesture when gestural blending occurs

Representing Harmony with Gestures

- Gestures (Brownman & Goldstein 1986, 1989): dynamically-defined, goal-based units of phonological representation

Tongue position for /i/
Tongue position for /q/

Tongue Body palatal narrow

Degree of Retraction
Advanced
Retracted

Degree of Retraction
Advanced
Retracted

Medium-strength /i/ partially resists (remains transparent to) effect of retraction gesture due to similar blending strengths

Result: achievement of tongue body retraction gesture favored over achievement of palatal constriction

Conclusion & Future Directions

Gestural analysis of Coeur d’Alene faucal harmony:
- Provides example of partial transparency to harmony that fulfills prediction of model of transparency as competition/resistance (Smith 2016)
- Avoids analysis of vowel quality shifts in faucal harmony as synchronic chain shift, avoiding need for additional grammatical architecture (e.g., constraint conjunction (Kirchner 1996))
- Provides unified account of segments that undergo phonological process to different degrees

- Accounts for contrast in faucal harmony susceptibility between /i/ and /i/ without relying on grammatical mechanisms for phonological exceptionality, including:
  - Opaque (counterfeeding) rule ordering and/or abstract underlying phonemes (cf. Cole (1987), Doak (1992))
  - Indexation to rules or constraints (e.g., Pater (2000, 2009))

Ongoing/future work: contrastive gestural strength as explanation of apparent exceptionality to phonological processes
References


