Harmony Triggering as a Contrastive Property of Segments

Caitlin Smith
University of Southern California

Exceptionality in Harmony Triggering

- Many languages have harmonies triggered by subset of potential triggers:
  - Backness harmony in Hungarian (Vago 1980)
  - Nasal harmony in Acehnese (Durie 1985) and Rejang (Coady & McGinn 1982)
  - Tongue root harmony in **Classical Manchu** (Zhang 1996)

Harmony	No Harmony
[kʉmu-ŋgə] 'harboring hatred'	[ilhʊ-ŋga] 'lying straight'
[sʉsə-ku] 'sieve'	[nʉmasa-kʊ] 'two-man boat'
[uɟə-kən] 'somewhat heavy'	[nuha-kan] 'somewhat easy'
[səbɟə-ŋgə] 'joyous' *[səbɟa-ŋga]	

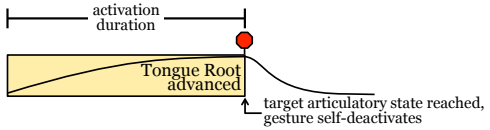
- Morpheme indexation (Pater 2000, 2009) to harmony imperative constraints (e.g. SPREAD(F) (Padgett 1995)) over- and under-generates patterns of harmony triggering

Proposals:

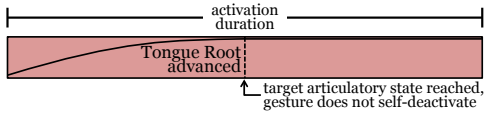
1) Idiosyncratic ability of some segments to trigger harmony is an encoded property of those segments
2) Encoded by deactivation parameter of subsegmental gestures

Representing Harmony with Gestures

- Gestures (Browman & Goldstein 1986, 1989): phonological units specified for multiple parameters (goal articulatory state, articulators, strength, etc.)
- Additional gestural parameter encodes whether gesture is self-deactivating or not (Smith 2016)
- Self-deactivating (non-harmony-triggering) gesture:



- Non-self-deactivating (harmony-triggering) gesture:



- Non-self-deactivating gesture (harmony trigger) overlaps other gestures (harmony targets)

Triggering Patterns & Inventory Shaping

- Harmony is not driven directly by harmony-driving constraint
- Harmony results from non-self-deactivating gesture in language's phonological inventory and surface forms
- Inventory shaped by markedness and faithfulness constraints to include (non-)self-deactivating gestures:
  - NONSELFDEACTIVATE($Gest_X$): penalizes self-deactivating ( ) gestures of type X (e.g. tongue root advancement)
  - IDENT(deactivation): preserves underlying gestural deactivation parameter setting
  - *($Gest_Y$, $Gest_Z$): penalizes co-occurrence of two gestures of types Y and Z
- **Across-the-board triggering:** grammar manipulates self-deactivation parameter to allow a single gestural type to surface

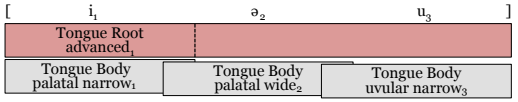
  NONSELFDEACTIVATE >> IDENT(deactivation)
- **Contrastive triggering:** grammar allows both self-deactivating and non-self-deactivating gestures to surface

  IDENT(deactivation) >> NONSELFDEACTIVATE
- Classical Manchu inventory:

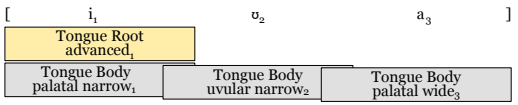
Manchu triggering /i/: Tongue Root advanced + Tongue Body pal. narrow

Manchu non-triggering /i/: Tongue Root advanced + Tongue Body pal. narrow

- Surface gestural score for vowels of [sʉsə-ku] 'sieve':



- Surface gestural score for vowels of [ilhʊ-ŋga] 'lying straight':



- **Conditioned triggering:** grammar restricts co-occurrence of (non-)self-deactivating gestures

*(Tongue Root advanced + Tongue Body pal. wide) >> IDENT(deactivation)

- Classical Manchu inventory:

Manchu triggering /ə/: Tongue Root advanced + Tongue Body pal. wide

Constraint Indexation & Overgeneration

* F | {S ... S}$_D$

- SPREAD(F) (Padgett 1995): drives harmony by penalizing non-undergoers (segments not associated with harmonizing F)
- Constraint indexation (Pater 2000, 2009) to SPREAD(F) can generate patterns of exceptional triggering:

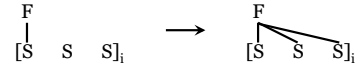
  SPREAD(F)$_i$ >> IDENT(F) >> SPREAD(F)
- Indexed roots trigger harmony; non-indexed roots do not
- **Problem:** potential *targets* of harmony may also be indexed to SPREAD(F)
  - Indexation of an affix to SPREAD(F)$_i$ incorrectly predicts harmony within otherwise disharmonic roots:

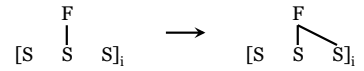
  - Exceptionally targeted affixes never induce harmony in otherwise disharmonic roots (Finley 2010)

Indexation to SPREAD(F) produces unattested patterns not generated by contrastive triggering analysis

Constraint Indexation & Undergeneration

- Constraint indexation cannot generate different distributional patterns of triggering and non-triggering segments
  - Classical Manchu: harmony-triggering /i/, /u/, /ə/ restricted to initial syllable; non-triggering /i/ and /u/ unrestricted (Zhang 1996)
  - Affix agreement with initial/final syllable of root: triggering segments restricted to root-edge syllables (Finley 2010)
- **Morpheme indexation:** segment with harmonizing feature in indexed morpheme will trigger harmony in any position





- **Segment indexation:** constraint indices cannot be referenced by positional faithfulness/markedness constraints (unlike gestural parameters)

Morpheme and segment indexation to SPREAD(F) cannot generate attested patterns of harmony triggering

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