(Non)locality

discussion

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Big questions in non-local processes

- *What* material can intervene between interacting items?
  - e.g., which segments count as transparent in vowel harmony?

- *How much* material can intervene?
  - e.g., does it matter how many transparent segments separate target and trigger?
What material can intervene?

- Phonetic localists’ answer: none!
  - e.g., Gafos 1996, 1998; Benus & Gafos 2007; for sibilant harmony specifically, see Walker, Byrd & Mpiranya 2008.

sapitokaʃ

- tongue-tip gesture spreads from trigger /ʃ/ all the way to target /s/
- intervening segments show little acoustic effect of gesture, so they get transcribed as transparent
What material can intervene?

- Classical autosegmental answer: anything that doesn’t bear material on the relevant tier
  - e.g., Lieber 1987 on Chumash sibilant harmony

\[
sapitokaʃ
\]

- feature [+distributed] spreads from trigger /ʃ/ to target /s/
- intervening segments are irrelevant—only the [dist] tier matters
- leaves open the phonetic implementation (single [dist] gesture or two separate ones?)—see Ní Chiosáin & Padgett 1997.
What material can intervene?

- ABC answer: whatever segments don’t have to participate in the correspondence relation
  - CORR-[+strid][+strid], IDENT-CC(dist) >> IO-IDENT(dist)

\[ i_{apitokaši} > s_iapitokaši, sapitokaš \]
What material can intervene?

- **Bowman:** Can ABC place principled restrictions on which segments are required to correspond?

- Rhodes proposes: only “strongly specified” segments need correspond (see Nevins 2010)
  - but Seto, Kinande, Khalkha are counterexamples—they have vowels that ought to be “strong” but act as transparent
  - Plus some Vs are transparent in one phonological or morphological environment but not another
How much material can intervene?

- In pure autosegmentalism, white space is not countable:

\[
\text{saf} \quad \text{is same as} \quad \text{sapitobudalekaf}
\]

\[
| \quad | \quad [\text{-dist}] \quad [\text{+dist}] \quad \quad | \quad [-\text{dist}] \quad [+\text{dist}]
\]

- In pure ABC, CORR-[+strid][+strid] doesn’t care where the two [+strident] consonants are
  - Though see Bennett 2013’s constraint requiring correspondents to be in adjacent syllables
How much material can intervene?

- But there’s plenty of evidence that distance does matter
  - Martin 2004: Navajo compounds show above-chance sibilant agreement only if sibilants are in adjacent syllables
  - Hayes & Londe 2006 and references therein: Hungarian V harmony is more probable across 1 transparent V than across 2
  - Kimper 2011: Hungarian, Finnish, Maltese, Ife Yoruba ...
  - Kochetov, Yokoyama & Leitch this workshop: Kirundi sibilant harmony rate is much lower if trigger and target are not in adjacent syllables
  - Zymet this workshop: decreasing interaction for increasing distance in English and Latin liquid dissimilation, Malagasy V dissimilation, Hungarian V harmony
How much material can intervene?

- **McMullin**: artificial language-learning studies suggest binary division between local and unbounded
  - learners assume local harmony/dissimilation until they get positive evidence for non-locality—then they leap to the conclusion of unboundedness
  - learners are reluctant to accept a system where harmony occurs only at long distance

- Issues explored
  - What are the computational properties of the more- and less-learnable systems?
  - ABC with constraints like “correspondents must be in adjacent syllables” seems to predict wrong typology for dissimilation
Some open questions

- Can ABC place principled restrictions on which types of segments must correspond?
  - Should those restrictions be sensitive to which features the corresponding segments must then agree in?
  - E.g., is V transparency sensitive to type of harmony (as in autosegmentalism), or not (as spirit of ABC seems to require)?
Some open questions

• Can ABC place principled restrictions on structural relationship between segments that must/can correspond?
  • Correspondence between prosodic units that trickles down to segments (Zuraw 2002, Yu 2004—may not work for basic cases of assimilation where, e.g., onset and coda must correspond)?
  • Featural substance again: should (non)locality depend on features involved, or is that a factor only diachronically, affecting which systems arise but not which are learnable/representable?

• Multiple mechanisms available
  • Place restrictions on CORR constraints: CORRIFINADJACENTSyllables
  • Have countervailing restrictions: CORR, DON’TCORRUNLESSINADJACENTSyllables
  • Place restrictions on Ident constraints: IDENT(F)-CC-IFINADJACENTSyllables

• How fine-grained should computation of distance be?
  • Binary—e.g., adjacent syllables vs. not? Gradient?
  • If learners assume binary, how to account for finer-grained effects in data (Kimper, Zymet)?


