

Advanced Phonological Theory B – Lecture 7: Explaining Vowel Harmony (Part 2)

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VH as innocent misperception?

- Recall Ohala's theory of language change by **innocent misperception**:
 1. Distinctions in some phonological dimension x are relatively hard to perceive
 2. (Some) learners hear insufficient (direct or indirect) evidence for any distinctions along x and therefore fail to acquire them
 3. These learners transmit a new variety of the language in question with x neutralised to subsequent generations of learners

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1

VH as innocent misperception?

- Note that in this model phonological change is purely perception driven: there's no role for 'innovating' speakers!

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2

VH as innocent misperception?

- If vowel harmony arises through innocent misperception, what is its source?
- Most plausible candidate: **vowel-to-vowel coarticulation** (Benguerel & Cowan, 1974; Bell-Berti & Harris, 1979; Purcell, 1979; Fowler, 1981; Recasens, 1984; Boyce, 1988)

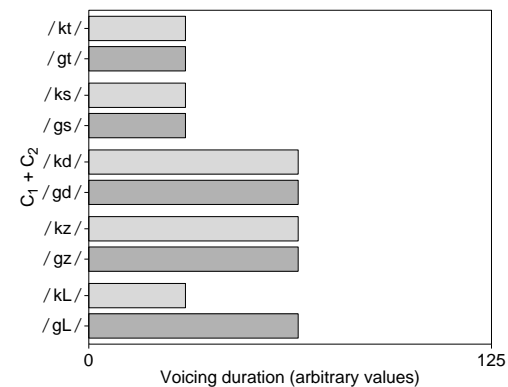
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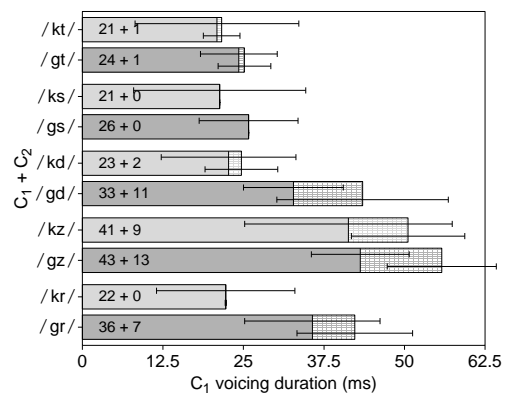
Coarticulation

- **Coarticulation** here refers to the observable results of articulatory strategies that manage the transitions between sounds produced in sequence
- May be distinguished from **Phonological assimilation** on the basis of gradient/non-neutralising properties, dependency on extralinguistic factors, etc.
- But this is not always easy in practice
- Example: English VA (lecture 5; [Jansen 2004](#))

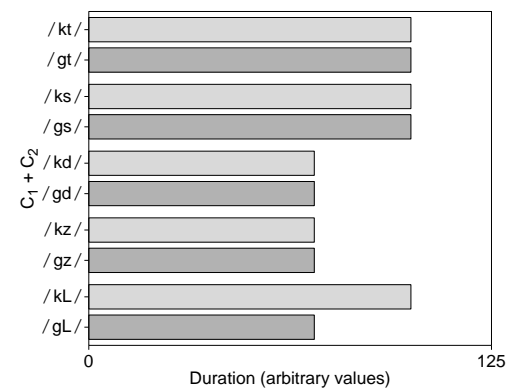
C₁ voicing: categorical assimilation



C₁ voicing: English

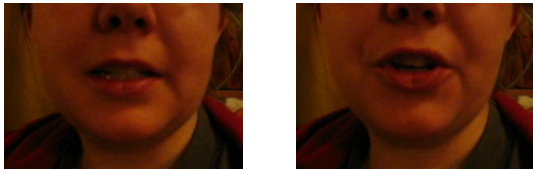


C₁ duration: categorical assimilation



V-(to-C-)to-V Coarticulation

- Lip rounding/protrusion at plosive release in /ti:m/ (left) and /tu:m/ (right):



VH from innocent misperception: problems

- Predicts frequent effects of backness and height harmony on intervening consonants (attested but not necessarily frequent)
- Example: in CV sequences the height of $F_2(C)$ depends in part on $F_2(V)$ and vice versa (Lindblom, 1963)
- Note how this mirrors a serious issue with early feature-geometrical models (Odden 1991:section 2)

VH from innocent misperception: problems

- Uvularisation after [-high] vowels in Yakut (Krueger, 1962):

[tʰi-gʲɪt]	'your-PL. boat'
[kel-li-gʲɪt]	'you-PL. came'
[sa:-ʋɪt]	'your-PL. gun'
[oʋo-ʋɪt]	'your-PL. child'
[kinige-ʋɪt]	'your-PL. book'
[øŋø-ʋɪt]	'your-PL. service'

VH from innocent misperception: problems

- Misperception (compensation) effects fail to arise in the experiment reported by Busá & Ohala (1999)

Re-introducing the speaker

- A complementary/alternative hypothesis: VH is grounded in the desire of the speaker to sufficiently cue lexical/morphological information (Suomi, 1983; Kaun, 1995, 2004; Boersma, 1998):

Re-introducing the speaker

- From speaker intention to listener misperception:
 1. Vowel features signal lexical contrast (stems) or morphological information (affixes)
 2. There is a benefit in associating a robust phonetic signal with the information in question
 3. A good strategy for making a signal more robust is to extend it in time
 4. Speakers implement this strategy by harmonising vowel features (at the phonetic level)
 5. Misperception by listeners ⇒ phonologisation

Re-introducing the speaker

- A possible parallel: progressive assimilation:
 - ◆ The English regular past tense and plural paradigms
 - ◆ The Dutch diminutive (partial paradigm):

[ra:mpjə]	'little window'
[bo:mpjə]	'little tree'
[be:ntjə]	'little leg'
[χɛintjə]	'(practical) joke'
[ko:nɪkjə]	'little king'
[le:nɪkjə]	'little loan'

Re-introducing the speaker

- A further alternative/complementary hypothesis: VH has a **delimitative** function: i.e., it helps to signal the boundary of grammatical domains (cf. stress, phonotactics)

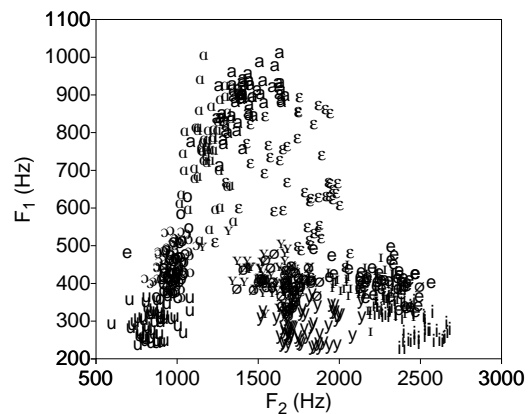
Where next?

- Key perception/psycholinguistic evidence still missing
- But perceptual hypotheses are testable, in principle at least
- Important: a viable model of VH needs to account for more than feature spreading in itself: target/trigger asymmetries, transparency/opacity, neutrality should also be captured

The $[\pm\text{high}]$ asymmetry in rounding harmony

- According to the typology of [Kaun \(1995\)](#) [-high] vowels are relatively resistant to RH
- This may be related to the fact that [round] contrast is disfavoured perceptually in nonhigh (front) vowels, (in part) due to a more restricted F_2 space
- Compare the $[\pm\text{high}]$ asymmetry in contrastive rounding in vowel inventories

The $[\pm\text{high}]$ asymmetry in RH



$[\pm\text{high}]$ and [round] in inventories

- Contrastively rounded and unrounded vowels in UPSID₄₅₁:

Height	Front		Back	
	Unround	Round	Unround	Round
hi(mid)	446	32	52	425
lo(mid)	364	11	19	348
lo	76	0	34	21
Total	449	33	87	446

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