



VOWEL SUBSEGMENTS AND SURFACE CORRESPONDENCE

Matthew Faytak — University of California, Berkeley

Overview

Distinct sets of vowels and consonants are usually the subject of studies on correspondence: but what if the distinction is not so clear?

Vocoids are not always static in constriction degree, and they may in fact involve consonant-like “interruptions,” in theory allowing for non-local interactions with “marginal” (onset, coda) consonants.

These have been handled as OCP effects: a feature $[\varphi]$ is specified in some structural domain, with alignment (potentially mid-vowel) determined by phonetic implementation. Multiple assignments of the same $[\varphi]$ in a local unit may lead to unlicensing or removal of one at a “distance.”

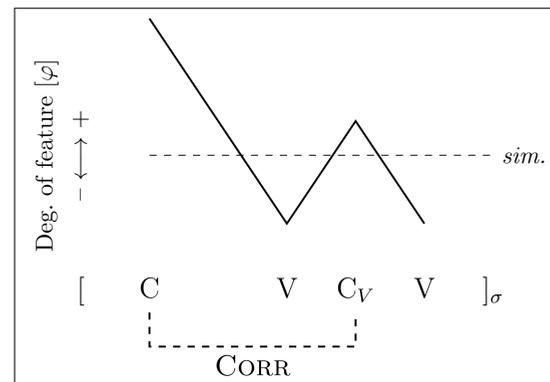
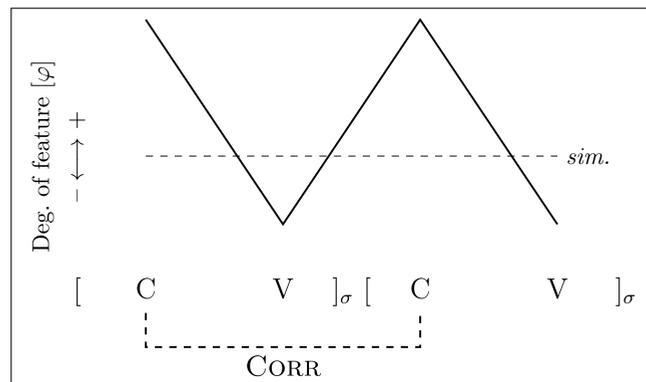
ABC, with recent expansions to account for segment-internal structure (Shih and Inkelas, 2014), can similarly model these outcomes: unstable surface correspondence compels constricted mid-vowel subsegments to become more consonant-like; this might disagree with a language’s phonotactics and dissimilation may result (Bennett, 2013).

Here, we investigate two putative cases of this phenomenon, both of which involve vowel interruptions C_V with feature(s) $[\varphi]$ that are “uncomfortably” similar to their onsets.

REPOSITIONING CORRESPONDENCE

ABC is most often used to model long-distance interaction between consonants (Rose and Walker, 2004) or, more recently, vowels (Rhodes, 2010); these two sets are distinct from one another to where $V \leftrightarrow C$ correspondences are perhaps not expected.

However, a particularly consonant-like *portion* of a vowel could well correspond with a nearby consonant or set of consonants; this possibility is explored below for Huautla Mazatec and Aghem.



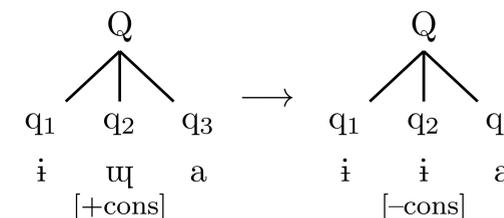
- Note same feature $[\varphi]$ in CORR- $[\varphi]$ and IDENT- $[\varphi]$: given approximate similarity, identity is optimal. Phonological categories are known to exhibit this “magnetic” effect generally (Kuhl, 1991)
- Satisfying CORR is made costly by a high-ranked constraint that penalizes candidates that satisfy CORR and thus IDENT (Bennett, 2013); multiple $[\varphi]$ in close proximity might present suboptimal levels of articulatory difficulty
- The effect (below): dissimilation in C_V , *not* in any V —see especially Aghem’s [+rd] diphthongs, which do not unround but lose their C_V

VOCOID-INTERNAL STRUCTURE

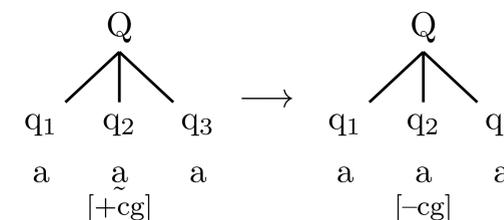
ABC+Q (Shih and Inkelas, 2014): segments (Q) consist of at most three subsegments (q_n); a complex vocoid’s C_V is q_2 in the diagrams below

Dissimilation occurs to avoid correspondence with an onset; accomplished by changing features of q_2 (Bennett, 2013) — see below left for details

Aghem:



Huautla Mazatec:



REFERENCES AND THANKS

Bennett, W. (2013). *Dissimilation, Consonant Harmony, and Surface Correspondence*. PhD thesis, Rutgers University.
 Garellek, M. and Keating, P. (2011). The acoustic consequences of phonation and tone interactions in Jalapa Mazatec. *JIPA*, 41(2):185–205.
 Golston, C. and Kehrein, W. (1998). Mazatec onsets and nuclei. *IJAL*, 64(4):311–337.
 Hyman, L. M., editor (1979). *Aghem Grammatical Structure*. Number 7 in SCOIL. U. Southern California.
 Kirk, P. L. (1966). *Proto-Mazatec Phonology*. PhD thesis, University of Washington.
 Kuhl, P. (1991). Human adults and human infants show a “perceptual magnet effect” for the prototypes of speech categories, monkeys do not. *Perception & Psychophysics*, 50(2):93–107.
 Rhodes, R. (2010). Vowel harmony as Agreement by Correspondence. Unpublished ms., University of California, Berkeley.
 Rose, S. and Walker, R. (2004). A typology of consonant agreement as correspondence. *Language*, 80(3):475–531.
 Shih, S. and Inkelas, S. (2014). A subsegmental approach to contour tone (dis)harmony patterns. *Proc. of Phonology 2013*.
 Steriade, D. (1994). Complex onsets as single segments: the Mazatec pattern. *Perspectives in phonology*, pages 203–291.

Thanks to **Stephanie Shih**, **Florian Lionnet**, **John Sylak-Glassman**, and **Sharon Inkelas** for their useful comments. Additional thanks are owed to **Erin Donnelly** for Mesoamerican references. The usual disclaimers apply.

AGHEM VELARS

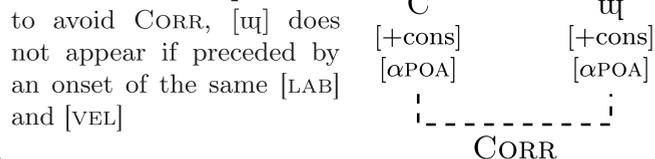
Two falling diphthongs [i(ɥ)a] and [u(ɥ^w)o] may have velar interruption (Hyman, 1979); these are unit vocoids at some level of the phonological grammar (evidence from high tone spreading)

Velars not realized (→ plain diphthongs) in certain environments, depending on onset place and rounding of diphthong (note contextually rounded [ɥ^w]):

	PLAIN	VELARIZED
LAB	***	-ffɥà ‘plantain’
COR	***	sìɥàmbìɥà ‘seven’
VEL	-kíá ‘headpad’	***

LAB	-bùo ‘to be tired’	***
COR	***	- ⁿ dúɥ ^w ó ‘house’
VEL	-kùo ‘belt’	***

Dissimilation pattern:



MAZATEC LARYNGEALS?

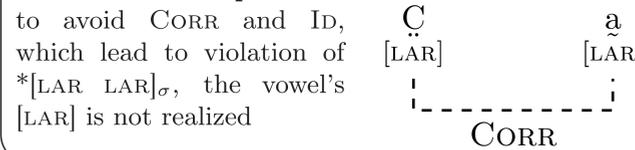
Huautla Mazatec has both creaky [+cg] and breathy [+sg] vowels; non-modal phonation is variably timed and can occur separated from the onset by some brief modal voicing (Golston and Kehrein (1998, 315), but cf. also Steriade (1994))

No creaky/breathy vowels following aspirated onsets $\overset{c}{C}$, i.e. *[LAR LAR]_σ (Golston and Kehrein, 1998), but the restriction only applies to breathy vowels in closely related Jalapa de Díaz (Garellek and Keating, 2011)

PMaz	Jalapa	Huautla
*k ^h a ⁴ ʔ ²¹ ‘different’	k ^h ai ²¹	k ^h ai
*t ^{jh} a ³ ʔ ² ‘fifteen’	t ^{jh} ô ²	t ^{sh} ó
*j ^h e ⁴ ʔ ⁴ ‘corn’	hé	hé

From (Kirk, 1966). Caveat: data is surprisingly fragmentary

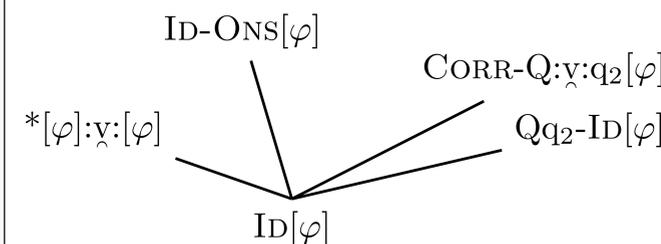
Dissimilation pattern:



CONSTRAINT GRAMMAR

After Bennett (2013); Shih and Inkelas (2014):

- * φ : γ : φ is OCP-like—no identical specification for φ at some short distance
- CORR is optimally avoided by changing $[\varphi]$ on a non-onset, here the C_V



For a particular language, replace φ throughout with its dissimilating feature

Huautla Mazatec: [LAR] ([±sg]/[±cg])

Aghem: [±cons], and CORR only goes into force if C and C_V use the same articulators ([αPOA])