

CV Interactions and Vowel Copy Epenthesis in San Francisco del Mar Huave

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A Introduction

(1) Vowel copy epenthesis. An example from Kekchi (Campbell 1974):

- | | | | | | |
|----|-------------------------|------------|----|-----------------------|------------------------|
| a. | kwiqʔ- <u>i</u> -bʼa:nk | ‘to bend’ | c. | pec- <u>e</u> -bʼa:nk | ‘to sit on the ground’ |
| b. | kʼox- <u>o</u> -bʼa:nk | ‘to begin’ | d. | hup- <u>u</u> -bʼa:nk | ‘to turn over’ |

(2) Competing analyses:

- Vowel copy as autosegmental spreading (Halle, Vaux & Wolfe 2000; Kawahara, to appear)
- Vowel copy as string-internal correspondence (Kitto & de Lacy 1999, Yu 2005)

(3) Spreading

a. p e c - e - bʼ a : n k
 ↓
 [F]

Correspondence

b. p e_x c - e_x - bʼ a : n k

+ Constraints enforcing faithfulness

Spreading vs. Correspondence: part of a debate over the analysis of long-distance assimilations in general. Hansson (2001), Rose & Walker (2004) on consonant harmony

(4) How to distinguish the two analyses? Few established criteria esp. in light of Hansson (2007), who shows that Correspondence theory predicts blocking by intervening segments.

☞ Spreading and Correspondence predict *different kinds* of blocking effects.

(5) Goal of this talk: Present a novel case of vowel copy epenthesis from Huave, and show that the pattern of blocking it exhibits is problematic for Spreading analyses -- but easily handled with (and predicted to exist by) Correspondence.

B Huave vowel copy epenthesis

(6) Huave: a language isolate of Oaxaca State, Mexico (Suarez 1975)

San Francisco del Mar dialect: ~50-100 fluent elderly speakers (all bilingual in Spanish) out of population ~6000

(7) Vowel phonemes:

Front /i e/

a. |i-m| ‘you go’

b. enⁱ ‘mangrove’

Back /u o a/

c. up ‘leaf’

d. okⁱ ‘cloud’

e. as ‘young corn’

+ Plain vs. aspirated vowel contrast (V^h)

(13) Vowel copy summarized:

	Plain consonant (C)	Palatalized consonant (C')	
$V_{fr}C_{bk}$ (<i>Default</i>)	iC + a eC + a	iC' + i eC' + e	$V_{fr}C_{fr}$ (<i>Copy</i>)
$V_{bk}C_{bk}$ (<i>Copy</i>)	uC + u oC + o aC + a	uC' + i oC' + i aC' + i	$V_{bk}C_{fr}$ (<i>Default</i>)

(14) Generalizations:

- Epenthetic V always matches the intervening C for [\pm back] – phonotactically driven
- Preceding vowel matters (=is copied) *only* if it also matches the intervening consonant for [\pm back]
- Otherwise, default epenthetic vowel is /a/ after C, and /i/ after C'.

“Sour grapes” (Padgett 1995): If you can’t copy, due to the phonotactics of [\pm back], pretend like you never wanted to propagate any features in the first place. Insert default vowel.

C Correspondence analysis

(15) String-internal correspondence (Hansson 2001, Rose & Walker 2004): Correspondence relations determined by one set of constraints (CORR); conditions holding over corresponding segments are determined by another.

- CORR-C \leftrightarrow C: “Let S be an output string of segments and let C_i, C_j be segments that share a specified set of features F. If $C_i, C_j \in S$, then C_i is in a relation with C_j ; that is, C_i and C_j are correspondents of one another.” (Rose & Walker 2004:491)
- IDENT-CC(nas): “Let C_i be a segment in the output and C_j be any correspondent of C_i in the output. If C_i is [nas], then C_j is [nas].” (after Rose & Walker 2004:499)

(16) Hierarchies based on similarity (& proximity). Sample hierarchy (Rose & Walker 2004:491):

CORR-T \leftrightarrow T >> CORR-T \leftrightarrow D >> CORR-K \leftrightarrow T >> CORR-K \leftrightarrow D
 ‘identical stops’ ‘same place’ ‘same voicing’ ‘any oral stops’

(17) Constraints for Huave

- AGREE-CV[bk]: Shorthand - constraints enforcing [\pm bk] agreement within CV sequences
- CORR-V \leftrightarrow V: Vowels in adjacent syllables should correspond.
- IDENT-VV: Corresponding vowels should share all features. Assess one violation for each feature that differs.
- *e, *o, *u >> *i, *a

(18) Crucial ranking for sour grapes:

IDENT-VV >> CORR-V \leftrightarrow V

“It’s more important for corresponding segments to be identical than it is for them to correspond at all.” Or: “If you can’t be identical, don’t even bother corresponding”

(19) Sour grapes + default epenthesis

oC' + V	AGREE-CV[back]	IDENT-VV	CORR-V↔V	*e, *o, *u
a. o _x C'o _x	*!			**
b. o _x C'i _x		*!***		*
c. o _x C'e _x		*!*		**
d. ↻ oC'i			*	*
e. oC'e			*	*!*

(20) Vowel copy

eC' + V	AGREE-CV[back]	IDENT-VV	CORR-V↔V	*e, *o, *u
a. ↻ e _x C'e _x				**
b. e _x C'i _x		*!		*
c. e _x C'a _x	*!	**		*
d. eC'i			*!	*
e. eC'e			*!	**

(21) Opposite ranking CORR-V↔V >> IDENT-VV produces partial class behavior (Padgett 1995): “It’s more important to correspond than it is to be identical.” Or: “Correspond first of all, then be as identical as you can be.”

oC' + V	AGREE-CV[back]	CORR-V↔V	IDENT-VV	*e, *o, *u
a. o _x C'o _x	*!			**
b. o _x C'i _x			***!	*
c. ↻ o _x C'e _x			**	**
d. oC'i		*!		*
e. oC'e		*!		*!*

(22) Barra Gaelic (Borgström 1937, Clements 1986, Ní Chiosáin 1995) exemplifies exactly this kind of system.

VC agreeing in backness (V _{fr} C', V _{bk} C')		VC disagreeing in backness (V _{fr} C, V _{bk} C')	
a. mer'ek'	'rust'	e. færa k	'anger'
b. ær'æ'k'at	'money'	f. inixij'ə	'brain'
c. marav	'dead'	g. ma r 'ev	'the dead'
d. gərəm	'blue'	h. bul'ik'	'bellows (gen. sg.)'

“Copy”

“Copy everything but [±bk]” (≠ sour grapes)

(Ní Chiosáin’s 1995 reanalysis of Barra Gaelic as height harmony only, with [±back] supplied by the intervening consonant, does not impact the analysis; IDENT-VV can be replaced by IDENT-VV(height).)

(23) Correspondence theory correctly predicts Huave “sour grapes” vowel copy epenthesis, where copy is blocked by an intervening consonant. Simple constraint reranking gives us the also-attested pattern of Barra Gaelic partial class behavior.

D Partial class behavior vs. Sour grapes: problems for Spreading

- (24) The existence of *both* partial class behavior and sour grapes appears to present a paradox for theories of autosegmental spreading.
- (25) Partial class behavior led Padgett (1995) and Halle, Vaux & Wolfe (2000) to posit that phonological rules or processes can refer to feature classes, but spreading – and blocking – happen at the level of individual features.
- (26) Partial class behavior in Turkish ‘color’ (back/round) harmony (Padgett 1995)



In (b), non-high round vowels prohibited. Although harmony can refer to Color (see also Odden 1991), each feature spreads (and succeeds or fails) independently.

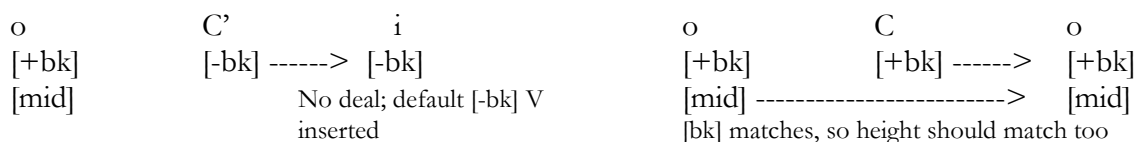
- (27) Terminal spreading correctly gets Barra Gaelic, where the intervening C only blocks spreading of *incompatible* vowel features (Clements 1986, Halle, Vaux & Wolfe 2000)



- (28) Evidence against node-spreading, which predicts “sour grapes” – either the whole node spreads, taking all the features under it along, or it doesn’t.
- (29) But Huave has sour grapes. The intervening C blocks not only the specific incompatible features, but all the other features as well.



- (30) Can we reinstate node spreading vs. terminal feature spreading as a lg-specific parameter?
-- This is problematic, because they entail different concepts of what kinds of theoretical entities medial ‘nodes’ are – real nodes in a feature-geometric tree, or abstract classes to which features belong.
- (31) Can we reanalyze Huave as a case of parasitic height harmony? Assume that the epenthetic vowel gets [±back] from the preceding consonant.



- (32) Problems:
- Height never spreads by itself. In an all-or-nothing system like Huave, do learners really have evidence for positing several independent harmony processes?
 - Typologically unusual: harmonic features are usually parasitic on height, not the other way around (e.g. Kaun 1995 on Turkic, Hyman 2003 on Kalong)
- (33) Spreading predicts that features only block incompatible values of the *same* feature. Since incompatible [\pm back] in Huave blocks propagation of *all* features, the Huave case is problematic for spreading. The Correspondence analysis should be preferred.

E Discussion

- (34) Comparison with related work. Other uses of CONSTRAINT \gg CORR to induce violations of CORR, i.e. prevent segments from corresponding at all. (Tableaus adapted from originals)
- (35) Kitto & de Lacy (1999) on Winnebago vowel copy (Miner 1992): Source of Base \gg CORR.

wañik + ra	COPY-ROOT	COPY-LEFT	CORR
a. wañik _x ra _x	*!		
b. wañ _x k _i ra		*!	
c. wañikara			*

- (36) Hansson (2007): Markedness, Identity \gg CORR to get blocking in (a hypothetical case of) consonant harmony. Correspondence with the opaque segment would create a marked structure, so it's better not to correspond at all.

t _j ...z...s	* ₃	ID[-ant]-CC	CORR- $\check{S} \leftrightarrow Z$	CORR- $\check{C} \leftrightarrow S$	CORR- $\check{C} \leftrightarrow Z$	ID[+ant]-IO
a. t _j ...z _i ...s _i	*!					**
b. t _j ...z _i ...s _j		*!				*
c. t _j ...z _i ...s _i		*!*				
d. t _j ...z _j ...s _j			*!		**	*
e. \mathcal{E} t _j ...z _i ...s _j				*	**	
f. t _j ...z _j ...s _j				*	**	*!

- (37) Sour grapes + TETU in another copy process: fixed-segment reduplication (Alderete, et al. 1999).

Lushootseed Diminutive Reduplication (Bates 1986, Urbanczyk 1996)

- | | | | | |
|----|---------------------|-------------------------|-----------------------|---------------|
| a. | s-duk ^w | s-dú-ʔ-duk ^w | 'bad'/'riff-raff' | Copy |
| b. | təlaw'-il | tí-təlaw'-il | 'run'/'jog' | Default (*ə) |
| c. | s-du:k ^w | s-dí-du:k ^w | 'knife'/'small knife' | Default (*V:) |

- (38) Alderete, et al. (1999): Markedness (not shown), Identity \gg Correspondence

/s-RED-du:k ^w /	IDENT _{BR} (u)	MAX-V _{BR}	DEP-V _{BR}
a. \mathcal{E} s-d ₁ í-d ₁ u ₂ :k ^w		*(u)	*(í)
b. s-d ₁ ú ₂ -d ₁ u ₂ :k ^w	*!		

- (39) Huave: AGREE-CV[bk], Identity >> Correspondence
 a. Only case found (so far) of Sour grapes + TETU in vowel copy epenthesis
 b. Confirms Hansson's prediction of blocking in long-distance correspondence
 c. Here, also, Correspondence (and hence Identity) is blocked when satisfaction of IDENT would create an ill-formed structure. In Huave, however, the high-ranked constraint that prevents copy is not a markedness constraint per se, but another string-internal correspondence.
- (40) Kitto & de Lacy (1999) provide further evidence that Correspondence is at work in vowel copy epenthesis: Moraic structure – something which can't spread – can be required to be identical under correspondence.
- (41) Argument for spreading from Kawahara (to appear): Correspondence overgenerates (a-c) and undergenerates (d) the range of copy epenthesis phenomena.
 a. Echo epenthesis only with vowels, never consonants --> Counterex. in Yu (2005)
 b. Echo epenthesis never targets vowels at a distance
 c. Length is never copied in echo epenthesis --> see (40)
 d. Correspondence (e.g. reduplication) is rarely blocked by intervening segments, while echo epenthesis is often blocked.
- (42) Translaryngeal vowel copy in Japanese loans (Kawahara, to appear; see also Steriade 1987)

Vowel copy across [h], [ç], [ɸ]		Default vowel after superlaryngeal C	
a.	[bahh <u>a</u>]	'Bach'	d. baz <u>u</u> 'buzz'
b.	[içç <u>i</u>]	'ich' (German)	e. t <u>o</u> rip <u>u</u> ru 'triple'
c.	[bu:ɸ <u>u</u>]	'Buch' (German)	f. op <u>u</u> t <u>i</u> mar <u>u</u> 'optimal'

- (43) Problem for the analysis presented here: Copy across a non-laryngeal doesn't result in an independently ill-formed structure.
 Potential solution: A three-way correspondence (or a transitive chain of correspondences) involving the intervening consonant, + ill-formedness of vowel features on superlaryngeal consonants? Intervening consonants can only block if they are referred to indirectly via correspondence with the target.

F Conclusion

- (44) Summary
 a. New contribution to the typology of vowel copy epenthesis, building on Kitto & de Lacy (1999), Yu (2005), Kawahara (to appear). Huave is the first(?) example of vowel copy epenthesis that instantiates a Sour Grapes pattern.
 b. Correspondence can get both Sour Grapes and Partial Class Behavior with simple reranking of basic constraints, but the particular pattern of blocking found in Huave is problematic for Spreading.
 c. General support for string-internal correspondence analyses of long-distance assimilation phenomena; successful application beyond consonant harmony, confirmation of Hansson's (2007) predictions.

- (45) General questions for future research
- a. What phenomena, if any, require a Spreading analysis?
 - b. Does Correspondence theory need to be restricted, and if so, in what ways?

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