The representation of phonological contrast in Uyghur vowel harmony

Daniel Currie Hall (Saint Mary's) & Avery Ozburn (UBC)

Contrastive features have often been observed to participate in phonological processes that ignore redundant features. This has been accounted for either 'subtractively,' by omitting redundant features from (at least some of) the phonological computation (e.g., Archangeli 1988; Dresher 2009; Mackenzie 2013), or 'additively,' by saying that both kinds of features are present, but that the phonology can also see the difference between them (e.g., Calabrese 1995; Nevins 2010). Halle et al. (2000) offer an additive account of Uyghur vowel harmony; this paper argues for a subtractive alternative.

Uyghur has the vowel inventory shown in (1), which is also that of Finnish. As in Finnish, the vowels /i/ and /e/, which have no back counterparts, are transparent to vowel place harmony. Harmony spreads [±back] rightward to alternating suffixes such as plural -lær/-lar, as in (2). The transparency of /i/ is shown in (3).

(1)

	FRONT		BACK	
	UNRND	ROUND	UNRND	ROUND
HIGH	i	y		u
MID	e	ø		o
LOW	æ		ɑ	

(2)　　a.　[køl]　　[køl-lær]　　'lake(s)'
　　　　b.　[jol]　　[jol-lɑr]　　'road(s)'

(3)　　a.　[køl-imiz-gæ]　　'lake-our-DATIVE'
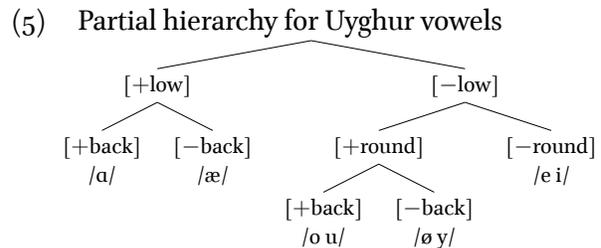　　　　b.　[jol-imiz-ʁɑ]　　'road-our-DATIVE'

There are also non-alternating suffixes such as -tʃæ, which not only remains [−back] after [+back] stems, but can also transmit [−back] to a subsequent suffix, as in [kitap-tʃæ-m-dæ] 'in my booklet.'

Low vowels in medial open syllables are raised to [i], and strikingly, this causes them to become transparent to harmony:

(4)　　a.　[bɑlɑ] 'child'　　[bɑli-lɑr]　　'children'
　　　　b.　[iʃæk] 'donkey'　　[iʃiɣ-i]　　'his/her/its donkey'
　　　　c.　[næj-tʃi-dæ]　　'child+tʃæ+LOCATIVE'
　　　　d.　[kitap-tʃi-da]　　'book+tʃæ+LOCATIVE'

In Halle et al.'s (2000) account, all features are specified, but harmony spreads, and can be blocked by, only contrastive values of [±back]. In their account, then, a specification for [±back] cannot be designated contrastive or redundant once and for all, but must be able to change status during the computation: the transparency of an [i] derived from /æ/ means that its [−back] specification must become non-contrastive as soon as it becomes high.

However, an alternative account is possible within the more restrictive subtractive approach. Suppose that segments are assigned only contrastive features as designated by a contrastive hierarchy (Dresher 2009). A partial such hierarchy for Uyghur vowels is shown in (5). Underlying /e i/ are transparent to harmony because they have no value for [±back]. The process that changes low vowels to [i] is not merely raising, but reduction, both in the sense that it involves a decrease in sonority and in the sense that it involves the deletion of marked structure. Note that this process neutralizes the place contrast between underlying /æ/ and /ɑ/, as in (4a) and (4b). In the underspecification account, the neutralization and concomitant harmonic neutrality are neatly captured by saying that reduction involves deletion of [±back], rather than changing the status of the feature from contrastive to redundant (and, in the case of /ɑ/, its value from + to −).

(5)　Partial hierarchy for Uyghur vowels

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