

Contrast and similarity in laryngeal harmony systems

Sara Mackenzie
University of Toronto

Typological studies of consonant harmony systems have argued that similarity is the crucial factor determining which segments will participate in harmony processes (Hansson 2001, Rose and Walker 2004). Through an analysis of laryngeal harmony in Chaha and Bumo Izon, this talk addresses the issue of how similarity is determined and argues that similarity is based on featural representations that are influenced by the system of contrasts in a given language. Contrasts are determined by hierarchic ordering of features with some features taking scope over others (Jackobson and Halle 1956, Dresher 2003). This approach is able to capture relationships between inventory shape and the patterning of consonant harmony processes. The proposal advocated here differs from other approaches to similarity (e.g. Frisch et al. 2004) in that it provides justification for which features are used to determine similarity and is able to account for similarity patterning in languages with asymmetric inventories.

In Bumo Izon, there is a restriction barring implosive and pulmonic voiced stops from cooccurring. Labial and alveolar stops participate (1a) but velar and labiovelar stops do not (1b). The voiced velar stop and implosive labiovelar both lack partners at their place of articulation that differ in the pulmonic/implosive distinction (2). At the labial and alveolar places of articulation, both pulmonic and implosive stops occur. Hansson (2001) presents this case as a problem for most similarity based approaches and suggests that contrast influences the determination of participating segments. The contrastive hierarchy analysis presented here expands on Hansson's suggestion that contrast plays a role. Contrastive specifications as defined by the theory of the contrastive hierarchy are able to account for the patterning of laryngeal harmony in Bumo Izon. Specifically, a contrastive hierarchy in which place features are ordered above laryngeal distinctions will achieve specifications in which the labial and alveolar voiced stops are contrastively specified for the harmonic feature, [constricted glottis], but the velar and labiovelar segments are not (3). The observed harmony pattern can then be stated as a ban on segments with distinct specifications for [constricted glottis] occurring within a root (4).

A system of laryngeal harmony is also found in Chaha, an Ethiopian Semitic language. Stops that differ with respect to laryngeal features may not cooccur (5), while voiced and voiceless fricatives are neutral (6). Rose and Walker (2004) argue that Chaha harmony involves all laryngeal features, including [voice]. The fact that fricatives contrast in the feature [voice] yet fail to participate in harmony is presented as evidence against the role of contrast in determining participating segments. I will argue that the harmony process active in Chaha applies only to the feature [constricted glottis], not to laryngeal features generally. Under this analysis, the failure of fricatives to participate in harmony does not contradict the position that contrastive features are crucial in determining targets and triggers of harmony processes. The fricatives, while contrastively specified for [voice], are not contrastively specified for [constricted glottis]. Laryngeal harmony in Chaha results from a constraint against segments with differing values of the feature [constricted glottis] cooccurring in a root.

I conclude that contrastive features determine phonological similarity relationships between segments. In the case of Bumo Izon and Chaha, the definition of similarity needed to determine which segments will participate in consonant harmony is that of the natural class. When feature specifications are determined using the contrastive hierarchy, participating segments are all and only the segments specified for the harmonic feature.

- (1) a) búbú ‘rub (powder in face)’ búɓar ‘yesterday’ (from Efere 2001)
 bíde ‘cloth’ dáɓá ‘swamp’
 b) igódó ‘padlock’ búgí ‘to wring (hand)’
 dúgó ‘to pursue’ ɓbódagɓóda ‘(rain) hard’

(2) Bumo Izon Oral Stop Inventory (based on Efere 2001)

	Labial	Alveolar	Velar	Labio- velar
Plosive	p	t	k	kp
	b	d	g	
Implosive	ɓ	ɗ		ɓɗ

(3) Specifications with feature hierarchy [labial] > [dorsal] > [voice] > [constricted glottis]

	[lab]	[dors]	[vc]	[cg]		[lab]	[dors]	[vc]	[cg]
p	+	-	-	-	k	-	+	-	-
b	+	-	+	-	g	-	+	+	+
ɓ	+	-	+	+	kp	+	+	-	-
t	-	-	-	-	ɓɗ	+	+	+	+
d	-	-	+	-					
ɗ	-	-	+	+					

(4) *[+cg] [-cg]_{Root}: distinct specifications of [constricted glottis] are banned within a root

- (3) a) jì-t’ək’ír t’ík’ír ‘hide’ (from Rose and Walker 2004)
 jì-rət’ík’
 b) jì-dəg(i)s dīg(i)s ‘give a feast’
 j-ad(i)g əd(i)g ‘make fall’
 c) jì-kətf kɪtf ‘hash (meat)’
 jì-kəft kɪft ‘open’

- (4) sigd ‘worship’
 sidiβ ‘curse’
 kizəβ ‘become inferior’

References

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