

Segmental identity and in laryngeal cooccurrence restrictions

Many languages prohibit the cooccurrence in a root of consonants that are similar on some dimension, e.g. homorganic (*p-b) or ejective consonants (*k'-p'). Both place and laryngeal restrictions share the property that *identical* pairs of consonants may be grammatical ($\sqrt{p-p}$, $\sqrt{k'-k'}$), though similar segments are ungrammatical. Cooccurrence restrictions are often analyzed as the effect of an OCP constraint, prohibiting like segments (see McCarthy 1986, 1994 for Semitic place restrictions, MacEachern 1999 for laryngeal restrictions). Under this analysis, the grammaticality of identical pairs of consonants is a mystery: the OCP penalizes identical and similar consonants equally. In this talk, I compare restrictions on ejective consonants in Bolivian Aymara (henceforth BA; de Lucca 1987; MacEachern 1999; Rose & Walker 2004) and Cuzco Quechua (henceforth CQ; Rowe 1950; Hornberger & Hornberger 1983; Grimes 1988; MacEachern 1999) and argue that whether a language with laryngeal restrictions allows identical pairs of consonants or not is predictable from other phonotactic properties of the language.

In both BA and CQ, pairs of non-identical ejectives are ungrammatical (1a). BA, but not CQ, allows roots with two identical ejectives (1b). A second difference between BA and CQ is that BA does not allow an ejective to cooccur with its non-ejective counterpart. Such combinations are attested in CQ (1c).

I propose that the grammaticality of identical consonants ($\sqrt{k'-k'}$) and the ungrammaticality of an ejective and its plain counterpart (henceforth *T'-T) are directly connected. Specifically, identical pairs of ejectives are allowed only when the resulting OCP violations avoids a violation of higher ranked *T'-T. This position is supported by data from Chol, a Mayan language (Aulie & Aulie 1978, Coon & Gallagher 2007), which has the same pattern of grammatical and ungrammatical stops as BA.

Previous analyses of identical consonant grammaticality have claimed that one consonant is outside of the domain of the OCP, the root. In Arabic and other Semitic languages, identical pairs of consonants are possible in C₂C₃ of a trisyllabic root (*samam* 'poison'), but not in C₁C₂ (**sasam*). Bat-El (1994) and Gafos (1998) argue that the final consonant in a word like *samam* is a reduplicated copy of the medial consonant, the root itself does not contain identical consonants. A reduplication analysis is impossible for identical ejectives in BA. Identical ejectives may be separated by another consonant (2a). Support for reduplication could also come from vowel context. In a language with concatenative morphology, if identical consonants were always followed by identical vowels, this could be taken as evidence for reduplicated strings. This is not so in BA, identical ejectives may be followed by distinct vowels (2b).

Identical ejectives cannot be analyzed as reduplicants in BA, raising the question of whether the OCP should apply to identical consonants at all. I argue that the OCP violation of identical ejectives is allowed in order to avoid violating a higher ranked phonotactic constraint. In BA, de-ejectivization of one consonant resolves the OCP violation when an input has two distinct ejectives (3). If the input ejectives are identical, however, de-ejectivization is no longer a possible repair. De-ejectivization creates a pair of an ejective and an otherwise identical non-ejective, a combination prohibited by a higher ranked constraint, *T'-T defined in (4). In BA, an OCP violation is tolerated in order to satisfy this constraint (5). In CQ, however, *T'-T is low-ranked and OCP violations are never tolerated (6). The analysis also rests on the assumption that IDENT[place] outranks IDENT[ejective].

The analysis predicts that pairs of identical ejectives should only be grammatical (to the exclusion of non-identical ejectives) in languages that disallow T'-T sequences. Data from Chol confirm this prediction and support the proposed analysis. In Chol, as in BA and CQ, identical pairs of ejectives are ungrammatical. Like BA, Chol allows identical pairs of ejectives. Crucially, ejectives in Chol are restricted from cooccurring with their non-ejective counterparts (7), as in BA.

The claim in this talk is that the grammaticality of identical ejectives in BA but not CQ is not random; it is predictable from the presence or absence of an independent phonotactic restriction. The data from Chol support this claim. The proposed analysis is an improvement on that in MacEachern (1999), which makes use of local conjunction and a general constraint preferring identical consonants, BEIDENTICAL. Her analysis makes no clear prediction about the interaction of phonotactic restrictions in a language. It is equally likely that BA allows identical ejectives and CQ does not as it is that CQ allows identical ejectives and BA does not.

- (1) a: non-identical ejectives are ungrammatical
 BA *k'-p' *ts'-q' *ts'-t' *q'-p' (and all other combinations)
 CQ *k'-p' *ts'-q' *ts'-t' *q'-p' (and all other combinations)
 b: identical ejectives are grammatical in BA but not CQ
 BA √k'-k' √ts'-ts' √q'-q' √t'-t' (and all other combinations)
 CQ *k'-k' *ts'-ts' *q'-q' *t'-t' (and all other combinations)
 c: ejectives may cooccur with their plain counterpart in CQ but not BA
 BA *k'-k' *ts'-ts' *p'-p' *t'-t' (and all other combinations)
 CQ √k'-k' √ts'-ts' √p'-p' √t'-t' (and all other combinations)

- (2) identical ejectives in BA (data from Hansson 2001)

- a: k'ask'a 'acid to the taste'
 b: q'enq'o 'rough (ground); crooked'

- (3) De-ejectivization resolves OCP violation for inputs with two distinct ejectives

/k'ant'a/	OCP-ej	IDENT[ej]
→ k'anta		
k'ant'a	* !	

- (4) *T'-T Two consonants which differ only in ejectivity may not cooccur.

- (5) De-ejectivization is blocked, and identical ejectives tolerated, to satisfy *T'-T

/k'ank'a/	*T'-T	OCP-ej	IDENT[ej]
→ k'ank'a		*	
k'anka	* !		*

- (6) Identical ejectives are ungrammatical in CQ

/k'ank'a/	OCP-ej	IDENT[ej]	*T'-T
→ k'anka			*
k'ank'a	* !	*	

- (7) Chol cooccurrence restrictions

- a: non-identical ejectives are ungrammatical (*k'-p' *ts'-tʃ' *p'-ts')
- b: identical ejectives are grammatical (√k'-k' √ts'-ts' √p'-p')
- c: an ejective and its plain counterpart are ungrammatical (*p'-p' *ts'-ts' *tʃ'-tʃ')

Selected References

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