

Variability in feature affiliations through violable constraints: the case of [lateral]

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In OT, sub-segmental feature geometry is not a primitive, but a product of ranked and violable constraints that prefer certain configurations. The necessary constraints would have to be universally undominated in most cases, since feature geometry is mostly invariant. Nonetheless, the violability of the constraints allows for cross-linguistic variation, whereas traditional feature geometric theory does not. Rice and Avery (1991), in the pre-OT era, explore and dismiss a constraint-based approach to the feature [lateral] under the then-standard assumption that constraints are by definition universally unviolated. This paper will argue that an account in terms of violable constraints offers a way of resolving some long-standing puzzles in the behavior of laterals, and ultimately renders feature geometry superfluous.

There have been two main previous fixed feature-geometric approaches to the feature [lateral]. Blevins (1994) argues that [lateral] lies under the Coronal node, but Rice and Avery (1991) argue that it lies under a node specific to sonorants, Spontaneous Voicing. I shall argue instead that the data can be analyzed by the interaction of two universal constraint sub-hierarchies banning certain feature combinations (a common line of attack in OT, see Pater (1999) on *[nasal][-voice].)

- (1) *LATERALOBSTRUENT >> *LATERALSONORANT
- (2) *LATERALLABIAL >> *LATERALDORSAL >> *LATERALCORONAL

With the possible exception of *LATERALLABIAL, each of these constraints is violable. Lateral obstruents are found in lateral affricates (Tahltan: Shaw 1991), or the [l] that stands in the place of the expected [d] in the voiced stop series of Min Chinese. Phonetically dorsal laterals are found in the languages of New Guinea (Blevins 1994). Nonetheless, the norm is to find the least marked combinations: sonorant laterals which are either Coronal, or placeless. The existence of placeless coronals is shown by their failure to participate in OCP-Place restrictions in Cambodian, to trigger Place assimilation in Javanese, or to participate in Coronal harmony in Tahltan.

In feature geometry, the arguments for constituency come mainly from spreading - defining the group of features that spreads, and the target of spreading. Unfortunately, the cross-linguistic data does not agree on the place of [lateral] in the feature geometry. In Selayarese, velar nasals assimilate in both Place and laterality to the following C, suggesting that lateral is a Place feature.

- (3) /annaŋ/ 'six' anna[**mp**]oke 'six spears' anna[**l l**]oka 'six bananas'

But in Korean, stops assimilate in nasality and laterality to the following C, suggesting that lateral, like nasal, is a sonorant feature. Although all stops assimilate in nasality, only coronal stops may undergo lateral spreading, suggesting that even if [lateral] is a sonorant feature it also needs a Coronal node to attach to.

- (4) kukmul > ku[**ŋm**]ul 'soup' tiki+**li:l** > tiki+**[ll]**i:l 'the letters t and l'

In Toba Batak, only coronal sonorants can be the target of lateral spreading, suggesting that lateral needs both a coronal and a sonorant node to attach to.

- (5) nn rn ln mr, ml, ŋr, ŋl unchanged
 nr > rr rr lr
 nl > ll rl > ll ll

If we abandon the feature geometric approach, and assume instead that certain combinations

of features are banned, the facts fall out quite simply. In Javanese and other languages with Placeless nasals, *LATCOR is undominated, so laterals have no Place features. But in all the languages discussed below, surface laterals are both Coronal and sonorant, so *LATLAB, *LATDORS, and *LATOBS must be the only undominated constraints. The differences turn out to result from the rankings of the faithfulness constraints controlling changes in Place and sonorancy. In the spreading cases, I shall assume that spreading usually results from SHARE-F constraints.

First consider Toba Batak, where the target must be both Coronal and sonorant. This falls out if all the feature co-occurrence constraints *LATOBS, *LATDORS, *LATLAB outrank SHARE-LATERAL, and if Place and sonorancy cannot be changed. Now consider Selayarese, where the target must be sonorant, but may be non-Coronal. The output, however, is Coronal. The only difference in the grammar is that IDENT-PLACE must be low ranked, both to allow general Place assimilation, and to allow non-Coronals to undergo lateral assimilation and become coronal laterals. Finally, consider Korean, in which the target must be Coronal, but need not be sonorant in the input. Davis and Shin (1999) have shown clearly that the force for assimilation in Korean is not SHARE-F, but the SYLLABLE CONTACT CONSTRAINT, which drives the change of stops to sonorants. The facts of the Coronal condition on the target still fall out under the proposal made here. The low-ranked faithfulness constraint here will be the one that allows obstruents to become sonorants, IDENT-SON.

The following partial rankings summarize this proposal:

- (6) Toba Batak: *LATOBS, *LATLAB, *LATDORS, IDENT-PLACE, IDENT-SON >> SHARE-LATERAL
 Selayarese: *LATOBS, *LATLAB, *LATDORS, IDENT-SON >> SHARE-LATERAL >> IDENT-PLACE
 Korean: *LATOBS, *LATLAB, *LATDORS, IDENT-PLACE >> SYLLABLECONTACT >> IDENT-SON

Note that feature geometry plays no role at all in these analyses.

A particularly interesting case is Terafene Flemish (Levin 1991). Lateral spreads to Coronal sonorants across other Coronals, but not across vowels, Labials or Dorsals.:

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|-----|-----------|--------|-----------|--------|----------|-----------|
| (7) | smelt-n | smeltl | 'to melt' | vals-n | valsl | 'filings' |
| | vs. elp-n | elpen | 'To help' | zwolme | zwoleme? | |

The fact that the target must be Coronal follows if *LATLAB, *LATDORS are undominated. The fact that obstruents are skipped suggests that *LATOBS, SHARE-F >> NOGAP. More puzzling at first is the apparent blocking effect of non-coronals seen in /elp-n/ > [elpen]. The key lies in the epenthetic vowel. Suppose that clusters consisting of Cor-Lab-Cor (or Cor-Dors-Cor) are not allowed, forcing epenthesis. The blocking is then caused by the vowel, and not by the consonant at all, and can be achieved by the natural assumption that SHARE-F applies to clusters only.

References:

- Blevins, J. 1994. A place for lateral in the feature geometry'. *Journal of Linguistics*, 30:301-4
- Davis, S. and S-H Shan. 1999. The syllable contact constraint in Korean: An Optimality-theoretic analysis. *Journal of East Asian Linguistics*. 8.4: 285-312
- Pater, J. 1999. Austronesian nasal substitution and other NC effects. In Kager, R., H. van der Hulst, and W. Zonneveld, eds. *The Prosody-morphology interface*. Cambridge University Press. pp 310-343.
- Rice, K. and P. Avery. 1991. On the relationship between laterality and coronality. In C. Paradis and J.F. Prunet, eds. *The Special Status of Coronals*. Academic Press. Pp1 01-124.
- Shaw, P. 1991. Consonant harmony systems: The special status of coronal harmony. In C. Paradis and J.F. Prunet, eds. *The Special Status of Coronals*. Academic Press. pp 125-158

