The formal and the functional in onset sonority constraints

Designated research area: phonology: syllable structure, sonority

I argue in this paper that onset sonority constraints, while based on *functional* considerations, are nevertheless defined in terms of *formal* syllable structure.

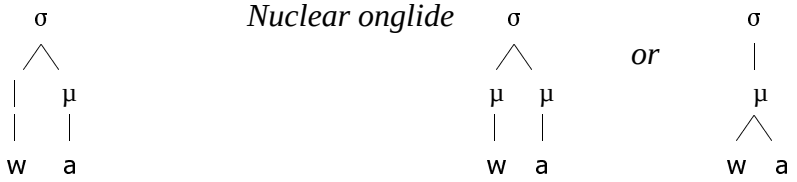
Cross-linguistically, low-sonority onsets are preferred. Low onset sonority is enforced by the *MARGIN/X constraint subhierarchy (Prince & Smolensky 1993), in a universal ranking determined by the sonority scale (1). This preference has a functional motivation: the auditory system is sensitive to spectral change, and lower sonority makes an onset more distinct from the syllable nucleus (Delgutte 1997). The *MAR/X subhierarchy is therefore functionally grounded (Archangeli & Pulleyblank 1994).

(1) *MAR/VOWEL >> *MAR/GLIDE >> *MAR/LIQUID >> *MAR/NASAL >> *MAR/OBSTRUENT

The universal ranking (1) has typological implications. If language *L* ranks one *MAR/X constraint high enough to prohibit a certain onset type, any higher-ranked *MAR/X constraint should also show effects. Thus, if onsets of a certain sonority level are banned, higher-sonority onsets should be banned too. This prediction is often met, as in Sestu Campidanian Sardinian (Bolognesi 1998). However, some languages ban syllable-initial liquids *but not syllable-initial glides*: e.g., Iglesias Campidanian, in word-initial syllables (Bolognesi 1998); Seoul Korean, excluding ambisyllabic liquids and recent loans (Sohn 1987). Since a high-ranking *MAR/LIQ implies a high-ranking *MAR/GLI, it might seem that these liquid-specific onset prohibitions cannot be attributed to *MAR/LIQ. But besides sonority, a ban on liquid onsets as a class has no obvious functional motivation. (The liquid-onset ban often extends to approximant liquids, so invoking a constraint that restricts taps and trills to intervocalic position is insufficient.) Therefore, if a new anti-liquid-onset constraint distinct from *MAR/LIQ were proposed for these cases, it would not be functionally grounded.

I present an alternative solution, requiring no novel or ad-hoc constraints. Phenomena in Spanish, French, Slovak, English, and Korean (e.g., Kaye & Lowenstamm 1984, Sohn 1987, Harris & Kaisse 1999) show that "onset" glides have two potential syllable positions. Glides can be true onsets, daughters of the syllable node. Or, they can be nuclear onglides, dominated by a mora and thus part of a rising diphthong.

(2) *True onset* *Nuclear onglide* *or*



I propose that *MAR/X constraints are defined to evaluate only *non-moraic segments*. True onset glides still violate *MAR/GLI, but now nuclear onglides do not. Any language that allows syllable-initial glides while banning liquid onsets is therefore predicted to have nuclear onglides, not true onset glides. As desired, the phonetically grounded *MAR/LIQ can be invoked to explain the absence of liquid onsets even in these cases, because *MAR/GLI *is* obeyed — syllable-initial glides are not syllabified as margins. Support for this approach is found in the microvariation between two dialects of Campidanian Sardinian (Bolognesi 1998) that have liquid-onset restrictions in initial syllables: the ability to have initial glides correlates with the ability to have rising diphthongs in other contexts.

In conclusion, languages with liquid-specific onset prohibitions show that *MAR/X constraints are defined in terms of formal syllable structure. This finding further supports Hayes' (1999) argument that functionally grounded constraints are defined over formal elements.

Word count: 489 words