

Coda typology, the sonority myth, and positive markedness

While sonority and the sonority hierarchy (SH) have been debated extensively (e.g., contributions in Parker 2012) there hasn't been any survey yet that systematically investigates how individual segment classes behave with respect to sonority across languages. It is taken as a given by most authors that syllable onsets favour low sonority consonants and that syllable codas favour high sonority consonants. Claims made on the role of sonority are usually made on the basis of data from very few languages. We investigate the organization of coda segmentism, focusing on the role of manner of articulation features, by examining over 200 languages from over 50 language families.

According to Clements (1990) and many others, the inventory of segments in the coda universally observes the SH, with less sonorous segments in the coda of a CVC syllable implying the presence of the more sonorous ones. With the SH $L > N > F > P$ (Liquids > Nasals > Fricatives > Plosives), the predicted coda inventories include solely $\{L\}$, $\{L,N\}$, $\{L,N,F\}$ and $\{L,N,F,P\}$.

Our database of 204 geographically and genetically widely diverse languages paints a different picture. In addition to languages with all four segment classes figuring in the coda, we document the restricted coda inventories in (1), in either word-medial or word-final codas, or in both. All languages with restricted coda inventories included in our sample have all four segment classes represented in their general segment inventory.

(1) $\{N\}$, $\{P\}$, $\{F\}$, $\{L,N\}$, $\{N,P\}$, $\{N,F\}$, $\{L,N,P\}$, $\{L,N,F\}$

Out of the eight coda inventories in (1), only two conform to the sonority based predictions. Importantly, one of the predicted inventories, $\{L\}$, does not figure in our database, even though it should be particularly privileged from the perspective of sonority. In sum, sonority is not a reliable predictor of manner of articulation classes found in codas cross-linguistically.

Several generalizations emerge from (1). First, the N class is privileged with respect to the L class, with L implying the presence of N. Second, the inventories that include sonorants, either N or L, N, co-occur with both F and P, that is, with both continuant and non-continuant obstruents. Finally, F and P do not co-occur within a restricted coda inventory.

On the basis of our observed typology we can derive the system of relative markedness, shown in (2).

(2) a. The P-scale: $*\{F\}/\text{Coda}$, $*\{F,L\}/\text{Coda}$, $*\{F,L,N\}/\text{Coda}$
b. The F-scale: $*\{P\}/\text{Coda}$, $*\{P,L\}/\text{Coda}$, $*\{P,L,N\}/\text{Coda}$

In the formal analysis we address the issue of whether some theory of contrastive features captures the typology in (1). The classes in (2) cannot be defined in standard features (SPE; Chomsky & Halle 1968 or UFT, Clements & Hume 1995). We can thus not define an appropriate set of negative markedness constraints, as those indicated in (2). However, if we allow for positive constraints of the type ADMIT(X) ('Assign a violation for every coda that is not X'), as well as positive disjunctions of such constraints ('Assign a violation for every coda that is not either X or Y'), the features [sonorant], [nasal] and [\pm continuant] account for the typology. The constraint definitions are given in (3) overleaf. The factorial typology was calculated with OTWorkplace (Prince, Tesar & Merchant) and generates exactly the attested patterns. It produces 13 languages though, which all fall into the 9 surface patterns (PFNL included) and some differ in how they realize unfaithful segments when the inventory allows fewer than the four major categories.

In conclusion, our typological survey shows that sonority plays at most a role in the cross-linguistic shaping of coda inventories, but only in the form of the feature [sonorant] and not in the way it was claimed in the literature. In addition, this typology shows that markedness constraints can take other forms than $*X/\text{position P}$, as usually assumed in the OT literature.

(3) Constraints

- a. ADMIT[son]/Coda: Assign one violation mark for every segment in a coda that is not [sonorant].
- b. ADMIT[nas]/Cd: Assign one violation mark for every segment in a coda that is not [nasal].
- c. ADMIT[-cont]/Cd: Assign one violation mark for every segment in a coda that is not [-continuant].
- d. ADMIT[+cont]/Cd: Assign one violation mark for every segment in a coda that is not [+continuant].

- e. ADMIT[nas]v[-cont]/Cd: Assign one violation mark for every segment in a coda that is not either [nasal] or [-cont].
- f. ADMIT[nas]v[+cont]/Cd: Assign one violation mark for every segment in a coda that is not either [nasal] or [+cont].
- g. ADMIT[son]v[-cont]/Cd: Assign one violation mark for every segment in a coda that is not either [son] or [-cont].
- h. ADMIT[son]v[+cont]/Cd: Assign one violation mark for every segment in a coda that is not either [nasal] or [+cont].

- i. Faith: Assign one violation for every segment in a coda that is not mapped to itself.

References

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