Sonority distance vs. sonority dispersion – a typological survey

This study presents a corpus of data from several languages illustrating the typological range of variation among certain kinds of consonant clusters in syllable-initial position. These facts further confirm the relevance and importance of the sonority hierarchy as a theoretical primitive of Universal Grammar. Specifically, I examine the claims of two extant models in accounting for bisegmental onsets that strictly follow the Sonority Sequencing Principle: the Minimum Sonority Distance approach and the Sonority Dispersion Principle. Minimum Sonority Distance is a general tendency by which specific languages may impose a parametric requirement that sonority rise by at least $x$ ranks from $C_1$ to $C_2$ in a syllable-initial consonant cluster (Steriade 1982; Selkirk 1984). Assuming the typical five-category sonority scale (vowel > glide > liquid > nasal > obstruent), sonority distance favors glides as the default (unmarked) class of segments in $C_2$ position since glides are higher in relative sonority than all other consonants. In contrast to this, the Sonority Dispersion Principle posits that in a $C_2C_2V$ sequence, these three segments should be maximally and evenly dispersed (separated) from each other in terms of sonority, all else being equal (Clements 1990). This results in a preference for liquids rather than glides in $C_2$ position since liquids are halfway between obstruents and vowels in most sonority scales.

Nevertheless, a major theoretical gap is that the divergent predictions of these two competing formal devices have never been systematically tested with empirical data from a robust sample of languages. To help remedy this situation I report here the findings of a survey of 122 languages containing onset clusters, designed to shed fresh light on this topic. The results partially validate both generalizations simultaneously: glides are the preferred $C_2$ segments in some languages while other languages require all syllable-initial clusters to end with a liquid. Therefore, neither the Minimum Sonority Distance model by itself nor the Sonority Dispersion Principle alone can account for all languages exhibiting onset clusters; i.e., neither of them holds true as an absolute statement of markedness concerning preferred sequences of onset consonants in all cases. Furthermore, this typological study also provides evidence for two semi-novel cross-linguistic patterns rooted in sonority: I call these the glide offset continuum and the liquid offset continuum. The former comprises four distinct yet conceptually-related types of languages in which $C_2$ is always a glide. In this cluster of glide offset languages permissible natural classes in $C_1$ position consist of either (1) obstruents alone, or (2) obstruents plus nasals, or (3) both of these plus liquids, or (4) all three of these plus glides. The liquid offset continuum is analogous to this except that $C_2$ is always a liquid. It therefore limits the natural classes of segments in $C_1$ position to either (1) obstruents only, or (2) obstruents plus nasals, or (3) obstruents, nasals, and liquids. Hence some notion of sonority differential between $C_1$ and $C_2$ is still ultimately crucial, with the added twist that the fixed terminus of an onset cluster ($C_2$) can be specified in each language to be either a glide or a liquid. However, because of this latter condition on the quality of $C_2$, classical sonority distance approaches such as Steriade (1982) and Selkirk (1984) are not quite restrictive enough to generate these two language continua without further constraints.