

## On the analysis of geminates: heavy or long?

True geminates have been analyzed by Hayes (1989) as inherently heavy, containing a mora bearing single root node, and by Selkirk (1990) as inherently long, containing double root nodes. Subsequent discussions have been in the context of individual language studies, the great majority adopting the syllabic weight treatment. In this paper we present a typological investigation of geminates, bring together arguments against the inherent weight analysis, and motivate the double root (alternatively, skeletal) representation as the only universal property of geminates. We suggest that Davis's (1999) recent proposal to allow both double root and single root, heavy geminates is an unnecessary relaxation of phonological theory.

The weight analysis as a universal position requires that geminates be heavy with respect to weight sensitive processes, and short with respect to quantity sensitive processes. Both claims are problematical. First, the prediction that syllables closed by the first half of a geminate are heavy is false (Tranel 1991). In Selkup stress falls on the rightmost heavy syllable, or else on the initial syllable (*qumó:qi* 'two human beings'); CVC syllables count as light (*ámírna* 'eats'); so do syllables closed by the first half of a geminate (*ú:c#kkak* 'I am working'). Second, the prediction that geminates should be moraic in onset position is not borne out. In Leti onset geminates are weightless (Hume *et al.* 1997): words must be minimally bimoraic; if onset geminates contribute to syllable weight, there ought to occur words with an initial geminate followed by a short vowel; however, no such words are countenanced. Further, word initial heavy syllables attract stress, in addition to penultimate syllables (*má:n<sup>w</sup>or'óri* 'crow'), but initial geminates do not combine with short vowels to create heavy syllables (*ppunárta* 'nest's edge'). And third, geminates pattern with CC clusters. In Leti consonant clusters and geminates block vowel deletion and induce metathesis while single consonants do not (Hume, *et al.* 1997). Likewise, in Hungarian (Vago 1992) stem final consonant clusters and geminates, but not single consonants, induce epenthesis (*olt-ani* 'to extinguish,' *hall-ani* 'to hear' vs. *ad-ni* 'to give').

In contrast, analyzing geminates in terms of double units on the length tier leaves open their role in syllabification and weight assignment. This leads to the prediction that geminates should exhibit the full extent of possibilities with respect to syllable weight. Indeed, this is the case: geminates are found in both moraic and nonmoraic flavors, in both coda and onset positions. Coda geminates are generally moraic, even in languages such as Hindi, where syllables closed by single consonants count as light (Davis 1990). Nonmoraic geminates occur in languages like Selkup (see above). Onset geminates are nonmoraic in Leti (see above), but moraic in Trukese (Davis 1999), where they contribute to weight to respect a bimoraic constraint on monosyllabic nouns (*tto* 'clam'). All descriptions of single root, moraic geminates known to us are reanalyzable into double root representations, augmented by language specific weight assignment.

We conclude that the full range of evidence supports the strong position that geminates are uniformly long.