Introduction

According to the No Coda Hypothesis (NCH) originally proposed in K.P. Mohanan (1982, 1984), Malayalam syllabifies all medial consonant clusters, including geminates, to the onset of the following syllable. This claim has led Malayalam to be cited as an exception to the Sonority Sequencing Principle, and even impacted theories of syllable weight and lexical stress (Hayes 1989, Tranel 1991, et seq.). Here, we present new evidence challenging the empirical validity of the claims originally put forth in K.P. Mohanan (1982, 1984), and begin to resolve some widespread misconceptions about the Malayalam facts stemming from this analysis.

Background

According to the Malayalam Stress Rule (K.P. Mohanan 1986:112), the language exhibits default lexical stress on the initial syllable of a word, unless the second syllable contains a long vowel and the first syllable contains a short one, in which case primary stress shifts to the second syllable (see examples based on this Stress Rule in (1)).


The statement of the rule suggests a weight-sensitive stress system, and several researchers have further extrapolated from this that Malayalam codas must be weightless, since they seem to play no role in attracting stress. Hayes’ (1995) description of Malayalam stress in terms of moraic trochees, for instance, takes for granted that vowel length is the sole determinant of syllable weight in Malayalam. In a much-cited experimental study by Broselow et al. (1997), Malayalam was chosen to represent languages in which codas are weightless without exception (although under K.P. Mohanan’s analysis Malayalam has no codas at all). Tranel (1991) cites the existence of weightless geminates in Malayalam as a key argument against Moraic Theory as a whole. Given all of this, it is somewhat troubling that no work has been published in the past three decades verifying the original analysis.

Issues

As it stands, Mohanan’s analysis and its reinterpretations in subsequent work face a number of issues. (A) One main concern stems from the fact that the empirical basis for Mohanan’s Stress Rule is exceedingly sparse. Instead his arguments hinge on theoretical considerations based on the No Coda Hypothesis: the NCH in conjunction with the tacit assumption that onsets do not contribute to syllable weight, leads to the unusual prediction that geminates are weightless in Malayalam (but see Topintzi (2010) re: onset geminates). However, the NCH itself is highly suspect, since (i) it predicts rampant violation of the SSP in Malayalam, and as T. Mohanan (1989) herself points out, there is clear phonotactic evidence that the SSP is in fact obeyed in the language, (ii) empirical support for the NCH is limited to that from informal language games, which have not only never been confirmed or replicated since, but have more plausible alternative explanations, such as the preservation of geminate integrity, as suggested in Curtis (2003) (also see Steriade’s (1999) discussion of the Syllable Word Hypothesis in connection with the Malayalam facts). (iii) The present study adds to this list evidence for a constraint on prosodic phrase-final obstruents in place of a general ban on consonant codas at the syllable-level, supported in part by an abundance of native and loan words of the form CVN and CVL such as maːn ‘deer’, vaːL ‘sword’, paːkal ‘daytime’, foːn ‘phone’. (B) Secondly, K.P. Mohanan (1982, 1984) provides no evidence to rule out the possibility that the observed stress pattern is phrasal/prosodic rather than true lexical stress, although the two would be expected to overlap in the single-word utterances which constitute the primary data cited in the analysis (cf. Gordon (to appear). Disentangling Stress and Pitch Accent, also see Nayar (2010) for arguments against the existence of lexical stress in Malayalam). (C) Third, as pointed out in Curtis (2003), even assuming the stress rule to
hold as originally stated, the stress system alone is not a sufficient basis for determining the weight status of Malayalam CVC syllables. Consideration of other weight-based phenomena in the language such as minimality, meter and compensatory lengthening/shortening is crucial, but absent in the aforementioned analyses. In fact, T. Mohanan (1989) concedes based on minimality facts that Malayalam geminates must contribute moraic weight (see below). Further evidence that CVC is bimoraic comes from poetry and analyses of meter in traditional Malayalam grammars, which treat both CVV and CVC together as heavy (guru), while CV is light (laghu) (cf. Gordon 2006 on the multiplicity of criteria for stress, meter and minimality).

**Minimality Effects** Malayalam exhibits phonemic length contrasts in vowels and consonants. As acknowledged in Mohanan (1989), the fact that roots of the form /CV/ and /CVC/ are nonexistent, while cases of /CVV/ and /CVCC/ abound, suggest a bimoraic minimum for Malayalam free forms (Prince & McCarthy 1986). In our investigation of the Malayalam minimality facts, we uncover two sets of evidence lending further support to the treatment of Malayalam geminates as weight-bearing, contrary to the prediction of the NCH. We observe evidence for both compensatory lengthening (CL) of consonant segments to satisfy a bimoraic minimum on free-standing words, as well as superheavy degemination in response to weight considerations, which point again to the moraic status of geminates in the language.

(A) **Compensatory Lengthening** With specific respect to CL in Malayalam, that gemination rather than vowel lengthening occurs to satisfy minimality is suggested by the fact that loan words of the form /CVC/ tend to undergo gemination rather than compensatory vowel lengthening: /gam/ ‘gum’ gamma *gaam

(B) **Superheavy Degemination** Data from Icelandic presents an illuminating corollary to Malayalam where a constraint like *3µ (which penalizes metrical feet consisting of more than two moras) is concerned: In contrast to the well-documented case of vowel truncation in Icelandic, whereby inputs of the form /CVVCC/ become [CVCC(a)] (Kager 1999: 267-72), our acoustic evidence shows extraheavy degemination to occur instead in Malayalam, leading to [CVV.C(a)].

We also present acoustic evidence establishing the durational equivalence of CVV and CVCC strings in Malayalam words, which again confirms and strengthens the minimality facts as well as the metrical evidence.

**Conclusions** In this study, we saw that weight-sensitive phenomena such as minimality, meter, and other prosodic effects were not sufficiently considered in the only published works dealing with stress and syllable weight in Malayalam (K.P. Mohanan 1982, 1984; T. Mohanan 1989), and that an evaluation of these factors point unquestionably toward the weight-bearing status of geminates in the language. This study draws attention to the dangers of failing to verify linguistic claims with acoustic evidence and multiple primary sources well before theoretical claims get entrenched in the literature. Claims involving less-well studied languages are especially susceptible to such a state of affairs, as the Malayalam case illustrates.

**Selected References**