

The relationship between voicing and stress with special focus on Karo

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In Karo (Gabas 1998, 1999) stress is attracted to the rightmost syllable - usually within a disyllabic window at the right word-edge - that hosts a high tone or a nasalized vowel (1). In the absence of high tone and nasalization, stress is word-final (2a), unless the ultima has a voiced onset and the penult a voiceless or a sonorant one, in which case stress shifts to the penult (2b). If the penult has a voiced onset too, then stress remains on the final syllable (2c).

I argue that voiceless obstruent and sonorant onsets can be grouped together to the exclusion of voiced obstruents in contributing to the weight of the syllable by means of weightful onsets (cf. Gordon 2005). Only the former but not the latter render their syllable heavy. Thus, due to the Weight-to-Stress-Principle penults with voiceless obstruents or sonorants attract stress when the ultima has a light syllable, i.e. with a voiced obstruent onset as in (2b). When both penult and ultima are light (2c) or when both are heavy (2a), stress emerges word-finally by default (due to the preferred alignment to the right word-edge).

The stress-attracting property of voiceless onsets in contrast to voiced obstruents resembles the connection between voicing and pitch perturbation as manifested in tone languages. During tonogenesis, many languages lost the voicing contrast and replaced it by a tone contrast in a systematic way. Voiceless onsets remained voiceless with high tone on the following vowel, whereas originally voiced onsets became voiceless followed by low tone (Yip 2002). I argue that while in some languages such pitch perturbation due to voicing effects was interpreted as tone, in other languages, it was interpreted as stress. Languages other than Karo with similar patterns include Arabela (Payne and Rich 1988) and Pirahã (Everett and Everett 1984, Everett 1988).

Interestingly, the behaviour of sonorants among those languages differs. While in Karo, sonorants pattern alongside the voiceless obstruents in attracting stress, in Pirahã and Arabela, they behave like the voiced obstruents in lacking such property. The dual status of sonorants is anticipated. In analogy with tone languages where sonorants sometimes act as depressor consonants alongside voiced obstruents, cf. Ngizim and Nupe, and sometimes they do not, as in Suma, Bade or Siswati (Bradshaw 1999), in stress languages, sonorants can act either as stress-attractors (Karo) or not (Pirahã, Arabela). This is due to the fact that since sonorants do not automatically perturb the F_0 of adjacent vowels, speakers may freely decide whether the F_0 will be raised or lowered (Kingston and Solnit 1988a, 1988b).

An alternative to this analysis of Karo is explored, where stress is considered lexical and voicing is assumed to be derived either through lenition processes or supported by lexical stress (Blumenfeld 2005). The major problem with this approach is that it predicts a range of unattested patterns. For instance, words with stress on the penult are expected - due to the unpredictability of lexical stress - independently of the voicing of the penult and ultima. The fact is that under no combination of sonorant or voiceless obstruent onsets in the final two syllables does stress occur on the penult. It is only when the ultima contains a voiced onset and the penult an onset other than voiced, where stress appears on the penultimate.

The present proposal thus accounts better for the empirical facts and extends the well-established connection between voicing and pitch from tone to stress languages. It is also in accordance with other data which support the existence of onset weight and which cannot be captured by more traditional prominence-based accounts (Everett 1988, Hayes 1995, Smith 2005), e.g. Samothraki Greek compensatory lengthening (Katsanis 1996), Pattani Malay initial geminates (Hajek and Goedemans 2003).

Examples

N.B: Stress indicated in bold; in Karo [r] behaves like [d] which the language lacks

- (1) *Stress and tone or nasalization*
- a. *H-tone*
yogá 'egg'
man^dógo^dn 'rabbit (sp.)'
- b. *nasalization*
morɿya 'miçanga'
carek^ɿ 'slow'
- (2) *Stress and onset voicing*
- a. maʔpɛ 'gourd'
kɔyɔ 'crab'
- b. pibɛʔ 'foot'
wɛɛɛ 'frog'
iʔcɔɔ 'quati (sp.)'
- c. kiribɔp^ɿ *kiribɔp^ɿ 'frog (sp.)'
miririɿ *miririɿ 'toad (sp.)'

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