# Kwak'wala Stress as Phrasal Prominence

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Kwak'wala (Wakashan: British Columbia) shows several unusual prosodic features including a typologically rare default-to-opposite stress system (Boas 1947; Grubb 1969; Shaw 2009), and extensive mismatches between syntactic and prosodic domains at the sentential level (Anderson 2005). Relatively underdescribed, however, are the intonational and tonal properties of words and sentences, and how these correlate with patterns of prosodic prominence and phrasing. I propose that prosodic processes in this language conspire to demarcate phrasal rather than lexical or metrical domains, suggesting that Kwak'wala lacks metrical feet and metrical structure more generally, and that the prosodic system references prominence only at the phrasal level.

Metrical stress theory (Hayes 1995) differentiates between bounded and unbounded stress systems. Bounded stress systems utilize binary, iterative feet and typically show an alternating rhythmic pattern (i.e. strong-weak), with one stress demarcated as the primary stress. Unbounded stress systems, on the other hand, typically show one primary stress per word which is preferentially aligned with either the left or right edge of the prosodic word (ω), though its position is influenced by syllable weight. Among the unbounded stress systems are the sub-type of "default-to-opposite" stress systems, which are relatively typologically rare and belong primarily to underdocumented languages, some of which may be subject to reanalysis as phrasal prominence (Gordon 2000). These stress systems involve conflicting edge-alignment patterns for primary stress placement, depending on whether the ω has at least one heavy syllable or only light syllables.

Kwak'wala has been classified as having the default-to-opposite stress system "leftmost heavy, else rightmost", where primary stress falls on the leftmost heavy syllable in ωs with one or more heavy syllables and on the rightmost syllable if the ω only contains light syllables. However, Kwak'wala's syllable weight system is unusual because it differentiates non-schwa vowels and syllables closed with non-glottalized sonorants (=heavy) from syllables with schwa vowels and weightless codas (obstruents, glottalized consonants) (=light). Previous literature has incorrectly assumed that Kwak'wala has phonemic long vowels that are active for syllable weight (e.g. Zec 1995; Hayes 1995); vowel length is actually not contrastive (Grubb 1969, 1977).

I propose that Kwak'wala's stress system is not metrical at all, but rather is a reflex of phrase-level prominence, an analysis which is corroborated by a number of phonetic and phonological factors. First, stress prominence in Kwak'wala appears to be cued phonetically by higher F0 as well as increased vowel duration (Noguchi 2011), which can be analyzed as a H* pitch accent. A closer look at these results with additional data suggests that while higher F0 is indeed correlated with primary stress, at the sentential level, not all words receive H* accents despite meeting the criteria for prosodic words. For example, some adverbs appear to lack prominence. This suggests that H* prominences are phrasal rather than lexical. Second, Kwak'wala sentences are made up of lexical words (roots, i.e. nouns, verbs and adjectives) combined with a rich inventory of suffixes (lexical and functional) and functional enclitics. Since stress is preferentially leftmost (in words with at least one non-schwa vowel), stress typically ends up on the root, which is left-aligned in the stress domain (ω). However, in cases where the root contains only light syllables, stress may occur far to the right in the ω domain, potentially landing on a functional enclitic element at the right edge of ω (Anderson 2005; Janzen 2015). These enclitics are often syntactically associated with ωs to their right, leading to a mismatch between syntactic and prosodic structure. Such stress patterns cannot be lexical, but rather require knowledge of the sentence's argument structure to determine the correct placement of stress within the ω domain. These factors suggest that Kwak'wala's stress system in fact reflects phrasal rather than lexical prominence.

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