

Strong Positions and Laryngeal Features in Yukatek Maya

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One of the central claims of Positional Faithfulness (Beckman (1998)) is what we can term, following Barnes (2006), the ‘Pure Prominence Hypothesis’ (PPH). The PPH posits that rather than having direct access to the phonetic basis for positional asymmetries in phonological processes, the phonology has access only to a single, immutable set of ‘strong positions’. These strong positions (onsets, stressed σ s, initial syllables, root-initial σ s, and others) allow marked forms that are not permitted in other positions by virtue of the existence of faithfulness constraints relativized to each of these positions.

We present novel data from two phonological processes in Yukatek Maya which produce particular marked forms in particular weak positions thereby disproving the PPH. The first process, allophonic aspiration of voiceless stops, has been argued by previous authors (Blair & Vermont-Salas (1965) et seq.) to occur in all syllable codas as seen in (1). The examples used to demonstrate this, however, are all morphologically complex forms such as compounds which plausibly form multiple prosodic words. Further evidence from nonce word testing and morpheme internal codas resulting from a vowel syncope process all lead to the conclusion that aspiration is correctly analyzed as occurring in a particular weak position: the right edge of prosodic words.

The second process – [h]-epenthesis – occurs at another weak position: the right edge of the phonological phrase. This process is often obscured by independent morpheme structure restrictions (lexical stems must be CVC or CVCVC), but is clearly seen in function words (2)-(4) as well in vowel-final borrowings from Spanish (5)-(6). In both of these cases, the morpheme in question has a coda [h] when occurring at the right edge of the phonological phrase ((4) and (6)) and no [h] in other positions (the glottal stop in (5) and (3) is there to avoid vowel hiatus).

Rather than being random exceptions to the PPH, however, these two processes are instances of a cross-linguistically robust pattern promoting certain laryngeal features ([spread glottis] and [constricted glottis]) at the right edge of relatively large prosodic constituents (at least as large as the prosodic word). Other examples of aspiration at the right edge of prosodic constituents include word-final aspiration in Sierra Popoluca, German word-final devoicing under Jessen & Ringen (2002)’s account, and other examples in Vaux & Samuels (2005). Less frequent, though still attested, is the preferential retention of [c.g.] word-finally (Tigre). Similarly, we also see languages which epenthesize [ʔ] (Dagbaani) and [h] (Afar) at the right edge of prosodic constituents.

The existence of a coherent class of exceptions to the PPH demonstrate that phonology must have access to certain kinds of knowledge regarding the phonetic basis for positional asymmetries rather a fixed set of ‘strong positions’. To account for aspiration and [h] epenthesis in Yukatek Maya (and similar phenomena), we propose a constraint family FINAL LARYNGEAL STRENGTHENING (FLS) formulated in (7). The deeper questions, though, are the following: what is the phonetic grounding for such a constraint family? Why are these constraints restricted in the ways that we see – only laryngeal features and more specifically, only [s.g.] and [c.g.]? More generally, what *kind* of phonetic knowledge does the phonology require?

Contra Steriade (2001)’s hypothesis, we argue that these restrictions cannot be adequately

captured with a phonology that has access only to *perceptual* phonetic data. If FLS were driven by a desire to give prominence to the right edge of prosodic units, why would right edges be marked in only these ways and not, say, by final voicing? Following Barnes (2006)’s analysis of Dagbaani [ʔ]-epenthesis, we argue that FLS is the phonologization of an *articulatory* pressure: the difficulty of maintaining voicing throughout a large prosodic unit. While not denying the relevance of perceptual pressures in shaping phonological processes, we argue that FLS provides evidence that the phonological component must have access to certain kinds of articulatory phonetic knowledge in addition to perceptual knowledge.

Data

- (1) a. síinik^h ‘ant’ (*síinik, *síinik^ʔ)
 b. kaan ‘snake’ (*k^haan)
 c. atan ‘wife’ (*at^han)
- (2) tak in hantik wáa ba’ax]_ϕ
 wish ERG.1 eat wáa what
 ‘I want to eat something’
- (3) Juan hantik le hanal-wáa’-o’]_ϕ
 Juan eat the food-wáa-DISTAL
 ‘Did Juan eat that *food*?’
- (4) Juan-wáah]_ϕ uk’ le sa’-o’
 Juan-wáa drink the atole-DISTAL
 ‘Did *Juan* drink that atole?’
- (5) [estudianteh]_ϕ ‘student’
- (6) [estudiante’il maaya t’aan]_ϕ ‘student of the Mayan language’
- (7) FINAL LARYNGEAL STRENGTHENING(α -*laryngeal feature*, β -*prosodic unit*): ‘Every β -final segment should have specification [α]’ where $\alpha \in \{[s.g.], [c.g.]\}$ and $\beta \in \{\omega, \phi, IP, u\}$.

References

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