Right-edge lapse has prominence alternation

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There is a known lapse asymmetry cross-linguistically: two adjacent, unstressed syllables are often tolerated at the right edge but not elsewhere, e.g. English *aspáragus*. Word-final syllables are known to undergo final lengthening (e.g. Klatt 1976) and since duration is a type of prominence we propose that this results in a *prominence* alternation.

Gordon (2002) has shown that the full typology of quantity-insensitive stress systems may be captured without feet, largely due to *Lapse and *Clash and by relying on the alignment of all prominences to the left or right edge of the prosodic word. Gordon includes *ExtendedLapseRight (no three unstressed syllables at the right edge) in order to allow a final lapse and, without feet, Lapse constraints are what create a regular rhythm.

Bani-Hassan Arabic (Irshied and Kenstowicz 1984) is a quantity-sensitive language with a right-edge three syllable stress window. Following Gordon, we account for this in a system lacking feet, but redefine *Lapse to reference phonetic prominences (stress, final-lengthening):

(1) *P-Lapse: Adjacent syllables lacking phonetic prominence are not permitted.

The tableaux in (2) and (3) show how Bani-Hassan Arabic can place the main stress on a heavy antepenult but not on a heavy pre-antepentult. Secondary stresses occur on every heavy and every second light syllable from the right. The inherent prominence of the final syllable due to final lengthening is indicated by bolding and 'x_1' refers to any level stress.

(2) Antepenultimate stress:

/ HLL/	*P-Lapse	Weight to-Stress	*Clash	Align x_1, Left
☞ a. ÁL**L**				
b. HÁ**L**		∗!		σ
c. ÀL**Ĺ**				σ!σ

With *Lapse redefined to accept prominence from final lengthening as well as prominence from stress, (a) can be selected due to its obedience to Weight-to-Stress and its lack of alignment violations. Under the proposed analysis of prominence true prominence lapse never occurs in languages like Bani-Hassan Arabic.

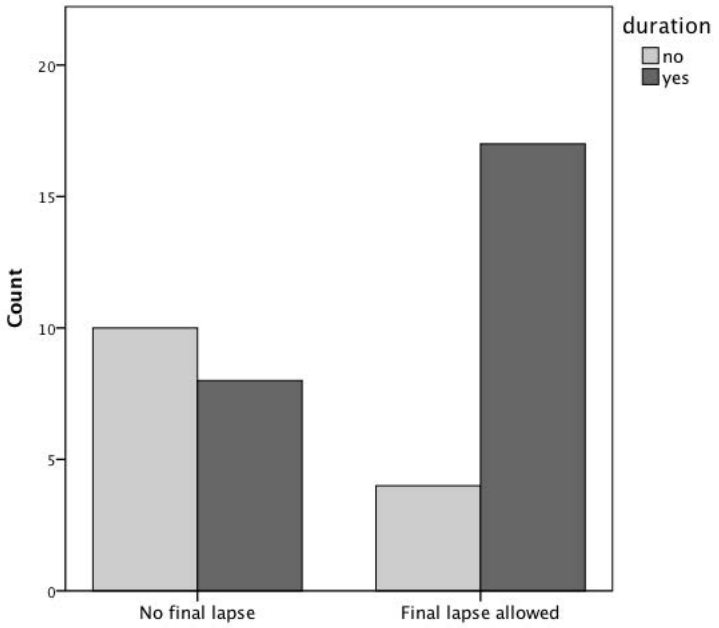
(3) Final three-syllable window (no preantepenultimate stress):

/ HLLL/	*P-Lapse	Weight to-Stress	*Clash	Align x_1, Left
a. ÀÁLL**L**			∗!	σ
☞ b. ÀLÁ**L**				$\sigma\sigma$
c. HÁLL**L**		∗!		σ
d. ÁLL**L**	∗!			

A heavy pre-antepentult cannot receive the main stress (candidate (d)) because this would result in two adjacent non-prominent syllables. The WEIGHT-TO-STRESS requirement leads to secondary stress on the heavy pre-antepenult, assuming that the main stress is right-aligned (unshown here).

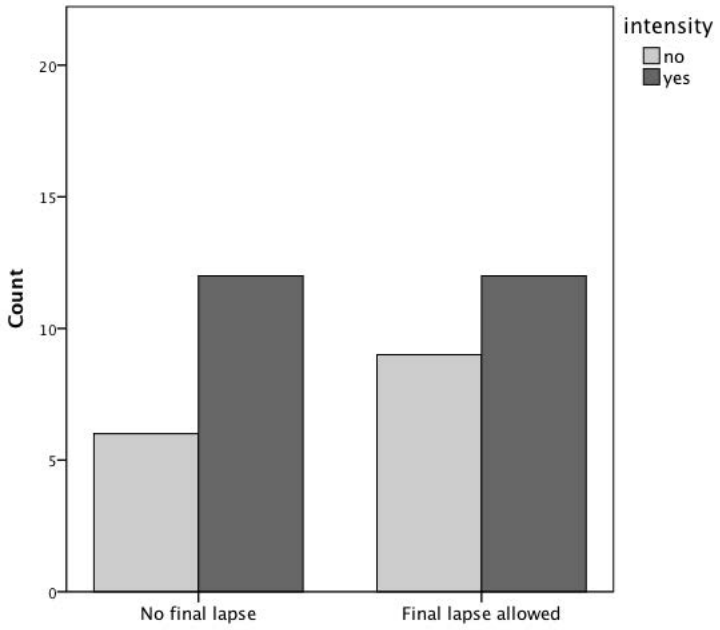
The typological prediction is that languages which allow a final lapse should have duration as a cue to stress, since these languages would be more likely to accept final lengthening as a type of prominence to satisfy *P-LAPSE. A survey of languages with secondary stress and documented phonetic stress correlates (duration, pitch, and/or intensity) shows this to be the case. Due to the relative scarcity of such data, the information regarding the phonetic correlates of stress includes impressionistic accounts, acoustically-measured reports, and perceptually-studied results. Thirty-nine such languages were identified. Duration alone shows a significant correlation with tolerance of final stress lapse.

(4) χ^2=4.14, *df* =1, p=0.04

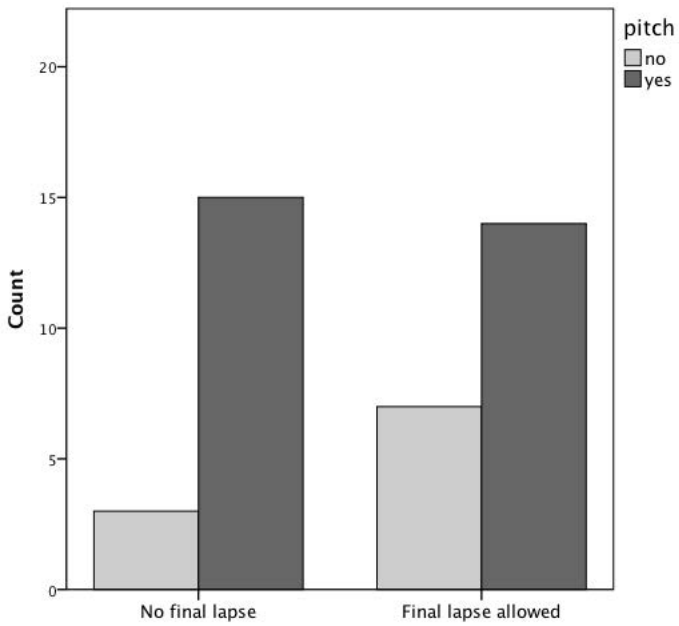


Languages without a final lapse may or may not have duration as a stress correlate. Many of these languages do not allow a final lapse simply because the main stress always falls on the final or penult. Languages which allow a final lapse, however, are significantly more likely to have duration as a stress correlate, which is consistent with the proposal that final lengthening can be perceived as a prominence. (See Deschenes and Lunden 2010 for the results of a perceptual study which indicates that English speakers can, in fact, take final lengthening to be a prominence.) Neither intensity nor pitch shows a significant correlation with the occurrence of final stress lapse in languages.

(5) χ^2=0.08, *df* =1, p=0.78



(6) χ^2=0.67, *df* =1, p=0.41



Language that allow final lapse are no more or less likely to have intensity or pitch as a stress correlate. We thus show that there is typological support for redefining *Lapse as sensitive to the prominence of final lengthening as well as to prominence from stress. Presumably what counts as prominence can vary by language, and in languages where duration is not a correlate of stress we would expect *P-Lapse to reference only prominence due to stress.

Taking final stress lapses to not be cases of prominence lapse explains the cross-linguistic stress lapse asymmetry. It explains why languages such as Bani-Hassan Arabic, with a final three-syllable stress window, need secondary stresses to the left of the main stress to create alternating prominence, but don't have secondary stress to the right of the main stress.

References

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