

Prosody-driven melody vs. melody-driven prosody: A stress typology

Laura W. McGarrity

Some phonological processes interact with primary and secondary stress assignment in such a way as to produce different typological stress patterns. For instance, many languages lengthen vowels in stressed open syllables. To account for such languages within Optimality Theory, a constraint requiring that stressed syllables be heavy (S-to-W: STRESS-TO-WEIGHT PRINCIPLE) must be ranked above a faithfulness constraint demanding preservation of input vowel length (WEIGHT-IDENT). In languages where no stressed vowel lengthening occurs, the ranking is the reverse (WEIGHT-IDENT >> S-to-W). However, some languages (e.g., Wargamay) exhibit asymmetrical behavior whereby primary stressed vowels lengthen while those bearing secondary stress do not. In such cases, S-to-W must be exploded into a more specific version of the constraint, requiring that only primary stressed syllables be heavy (S_{σ} -to-W). The ranking S_{σ} -to-W >> WT-IDENT >> S-to-W would account for this asymmetrical pattern. Because the specific constraint stands in a stringency relation with the general constraint (i.e., violations of S_{σ} -to-W are in a proper subset of the violations of general S-to-W), it makes certain predictions about the kinds of stress patterns that would be expected not to occur in the world's languages. For example, one would not expect to find (the logically possible pattern) the converse of Wargamay, namely, a language in which vowels lengthen in syllables with secondary stress, but not in syllables bearing primary stress. Such a language is unattested. This falls out from the stringency relation between the primary-stress-specific constraint and the general S-to-W constraint. The result is that OT correctly predicts that vowel lengthening will interact with stress assignment in such a way as to generate only three out of the four logically possible stress patterns.

Other phonological processes interact with primary and secondary stress assignment in such a way as to produce all four possible typological stress patterns. This is unexpected given the nature of the stringency relationship between primary-stress-specific and general stress constraints. For instance, there are languages whereby primary stress is quantity *insensitive* but secondary stresses are quantity *sensitive* (e.g., Finnish). Such languages would rank the WEIGHT-TO-STRESS PRINCIPLE ('Heavy syllables must be stressed') below the primary-stress specific ALIGNHEADFOOT, but above the general stress constraint ALIGNFOOT. The converse of the pattern – a language in which primary stress is quantity sensitive but secondary stresses are quantity insensitive – would be predicted not to occur, based on the stringency relation. However, unlike the Anti-Wargamay example, such languages are attested (e.g., Inga).

In this paper, I propose that the incongruities apparent in the interaction of phonological processes with stress are due to a fundamental dichotomy: whether it is the melody that drives the prosody (e.g., quantity sensitivity) or the prosody that drives the melody (e.g., vowel lengthening). This predicts that: 1) phonological processes that can be driven by stress location (e.g., vowel lowering, vowel reduction, gemination, aspiration, vowel vs. glide formation) will interact with stress in an asymmetrical way; and 2) phonological processes that influence the location of stress (e.g., epenthesis) will interact with stress in such a way as to generate a fuller range of typological stress patterns.