Representing tones without precedence relations

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Precedence-free Phonology (PfP) limits representational redundancy and enhances theoretical restrictiveness. This paper argues that tone should, like other aspects of melodic representation in PfP, be represented by hierarchical structure consisting only of head-dependency relations between tonal units, rather than by autosegmental tonal tiers that encode precedence relations between tonal units.

Autosegmental tiers ensure that some phonological properties are treated as belonging to prosody rather than to melody (segments). Tonal tiers incorporate precedence relations between tonal units, just like segmental tiers do, although tonal tiers are independent of segmental tiers (or in some theories, skeletal tiers). This kind of precedence-based structure is a well-established way of representing tones. However, it is not consistent with the Precedence-free Phonology (PfP) model of phonological representation, where precedence relations are completely absent at all levels of phonological structure in order to eliminate representational redundancy and strengthen theoretical restrictiveness (Nasukawa 2014, 2016, 2017ab; Nasukawa and Backley 2017, 2018; Backley and Nasukawa 2020; Lin 2020; Onuma and Nasukawa 2020). This paper considers how PfP can represent tones—which in standard approaches are assumed to be linearly ordered on tonal tiers.

PfP employs the privative laryngeal elements |L| and |H| as tonal units (Harris 1994, Backley 2011), but rather than making use of autosegmental tiers, it assumes that |L| and |H| enter into asymmetric (head-dependency) relations and form hierarchical structure. In a tonal expression, |L| is regarded as the structural baseline, with a sole |L| being phonetically realized as low tone. Then, when the baseline |L| takes |H| as a dependent, the resulting complex structure is phonetically realized as high tone (since the acoustic signature of the head |L| is masked by that of the dependent |H|, which is acoustically more prominent in terms of the degree of its carrier signal modulations). With respect to tonal contours, for example, rising LH is the phonetic outcome of the |H|-headed [HL] set, where the most deeply embedded dependent |L| is phonetically interpreted before its head |H|. On the other hand, falling HL is the phonetic outcome of the |L|-headed [LH] set, where the most deeply embedded dependent |H| is realized before its head |L|. Other types of tonal expression are hierarchically represented by extending this line of argument.

Regarding the location of the tonal domain within PfP's hierarchical structure, there are two possibilities: (i) the position dominating a V-domain and (ii) the dependent position of the head of a V-domain. It is assumed that (i) is for register tones typically found in Bantu languages, while (ii) is for contour tones typically observed in languages like modern Chinese dialects.