The Interaction of Tonal and Metrical Prominence in the Pingding Variety of Chinese
Pingping Jia
Free University of Berlin
Pingping.jia2@gmail.com

The present study addresses the question of how metrical prominence is realized in tonal languages. The data come from a field study conducted in 2019 on the Pingding Variety of Chinese and have been published as a corpus at the Repository from the Free University of Berlin – Refubium (Jia 2021). Pingding is a variety of Jin Chinese spoken in an area surrounded by Mandarin varieties (CASS 2012). It has often been claimed that tonal languages do not have word stress or metrical prominence, and that lexical tone and word stress are mutually exclusive features (cf. the discussion in Hyman 2006; but see Hyman 2014 for counter-arguments; cf. Sui 2016, Feng 2016, Duanmu 2022 on Chinese). This study aims to demonstrate the interaction between metrical prominence and tonal prominence, as is visible in the form of tone deletion in metrically weak, but (underlyingly) tonally prominent syllables in the Pingding Variety. The generalizations on tone deletion receive a straightforward analysis if we assume (i) that metrical prominence is on the leftmost syllable of a phonological word, and (ii) that tones are ranked according to a scale of tonal prominence, (4), where contour tones are more prominent than level tones and high tones are more prominent than non-high tones.

Firstly, assuming that it is applied in Pingding Variety that a natural foot (disyllabic trochee) maps to a phonological word generally in Chinese (Feng 1998), then we can see that a disyllabic phonological word (a two-tone sequence as well) can be either a disyllabic lexeme or a disyllabic phrase formed by combining two monosyllabic lexemes. The Pingding data show that if, in a lexeme, the citation tone of a metrically non-prominent ("unstressed") syllable is more prominent than the tone of the metrically prominent ("stressed") syllable, the tone of the "unstressed" syllable is deleted (1a). As a result, the citation tone pattern MF-HF is realized as MF-o (‘o’ referring to the tone that is deleted). However, tone deletion is only observed within lexemes but not in disyllabic phrases exhibiting the same tonal pattern; (1b). Therefore, tone deletion is only applied to the part of phonological words that map to lexemes, but not to the part that map to phrases.

Secondly, tone deletion is applied only if the "unstressed" syllable bears a citation tone that is more prominent than the citation tone of the "stressed" syllable. For example, in the citation tone sequence HF-MF, where the HF on the "stressed" syllable is more prominent than the MF on the "unstressed" syllable, both tones are preserved (but the sandhi process applies) in phonological words, no matter they are lexemes or phrases; (2).

Thirdly, the same phenomenon can be observed in trisyllabic sequences and even longer monomorphemic lexemes, deleting (all and only those) tones that are more prominent than the tone of the "stressed" syllable; (3). This finding seems to imply that the structural prominence triggering tone deletion in lexemes might be word accent rather than the strong syllable in a trochaic disyllabic foot.

The tonal prominence hierarchy observed in this variety is compatible with standard assumptions on the cognitive saliency of high tones and contour tones, which are generally more perceptually salient than low tones and level tones, see (4) (Jiang-King 1996; Jiang-King 1999; de Lacy 2002; Zhang 2007). The data from Pingding thus constitute another piece of evidence that both lexical tone and metrical prominence at the level of the phonological word can coexist in one phonological system, where metrical prominence can be perceived by the speakers as tonal prominence (and is thus learnable). If underlying tonal prominence does not align with (surface) metrical prominence, tone deletion applies, with metrical prominence winning over tonal faithfulness. The analysis presented in this study for the data is cast in the framework of Optimality Theory.
References