

The interaction of tonal and metrical prominence in the Pingding dialect of Chinese

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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 Chinese dialect of Pingding, part of the Jin dialect group, which is 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 on Chinese). This study aims at showing that metrical prominence interacts with tonal prominence, as is visible in the form of tone deletion in metrically weak, but (underlyingly) tonally prominent syllables in the Pingding dialect of Chinese. 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 that tones are ordered along 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, the Pingding data show that if, in a phonological word, 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), so that the citation tone pattern MF-HF is realized as MF-o ('o' referring to the tone which is deleted). However, tone deletion does not apply in phonological phrases with the same tonal pattern; (1b).

Secondly, tone deletion is applied only if the "unstressed" syllable bears a citation tone which 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 sandhi applies), in phonological words as well as in phrases; (2). The same phenomenon can be observed in (rare) trisyllabic sequences and even longer monomorphemic lexemes, deleting (all and only those) tones which are more prominent than the tone of the "stressed" syllable; (3).

The tonal prominence hierarchy of this dialect is compatible with standard assumptions on the cognitive saliency of high tones and contour tones, which are more 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 speaker 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 we present for the data is cast in the framework of Optimality Theory.

Examples

- (1) a. Phonological word MF-HF→MF-o (tone deletion)
yao-gu [iə³¹ku⁵³⁻²²] “waist-drum” Noun
xin-ku [ɕiəŋ³¹k^hu⁵³⁻²²] “hard” Adj
an-wen [ɲæ³¹vəŋ⁵³⁻²²] “sedate” Adj
 b. Phonological phrase MF-HF→MF-HF (no tone deletion)
zhe-yu [tʂɤ³¹y⁵³] cover + rain “to keep out the rain” Verb + Obj
zhua-jin [tsua³¹teiəŋ⁵³] hold + tight “grasp firmly” Verb + Adv
- (2) HF-MF→HH-MF (no tone deletion, but sandhi in the form of contour dissimilation)
 a. Phonological word
shou-jin [ʂə⁵³⁻⁵⁵teiəŋ⁴²] “towel” Noun
qi-feng [tehi⁵³⁻⁵⁵fəŋ⁴²] start + wind “gut” Verb + Obj
 b. Phonological phrase
yan-hua [iæ⁵³⁻⁵⁵xua⁴²] eye+dim “have dim eyesight” Subj + Predicate
- (3) *yang-gao-feng* [iaŋ²²kə³¹⁻²²fəŋ³¹⁻²²]
 LL-MF-MF → LL-o-o lamb+crazy “epilepsy” Modifier +head
duo-lun-duo [tuɤ³¹luəŋ²²tuɤ³¹⁻²²]
 MF-LL-MF → MF-LL-o “Toronto”
- (4) Tonal prominence hierarchy HF>>MF>>LF/LFq>>LL/Lq
 (HF: high falling tone; MF: mid falling tone; LF: low falling tone;
 LFq: low falling checked tone; LL: low level tone; Lq: low level checked tone)

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