Phonology **36** (2019) 531–535. © Cambridge University Press 2019
doi:10.1017/S0952675719000241

*Why metrical approaches to tonal accent are worth pursuing**

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Unlike existing analyses with lexical tone, metrical foot-based approaches to tonal accent in Franconian not only focus on an explicit analysis of the tonal contours, but are also equipped to account formally for morphological alternations and other predictable correlates. Examples are interactions of tonal accent with duration, vowel and consonant quality. The existence of such additional correlates is in line with a foot-based analysis, since it mirrors correlates of stress and foot structure found in Germanic languages and elsewhere.

I thank the editors for allowing me to respond briefly to Gussenhoven & Peters (2019). Gussenhoven & Peters' long-term contribution to our understanding of Franconian tonal accent can hardly be overstated; in particular, their detail-oriented method of data collection has set new standards for the documentation of tone-accent systems. However, I do not think that the arguments they present in their reply make a convincing case against the analysis presented in Köhnlein (2016), or more generally against the metrical approach to Franconian and related accentual systems (e.g. Hermans 2012, Kehrein 2018, van Oostendorp 2018 for Franconian; Morén-Duolljá 2013, Iosad 2015, 2016a for North Germanic; Iosad 2016b, Morrison 2019 for Scottish Gaelic).

1 General considerations

The metrical foot-based approach focuses not only on an explicit analysis of the tonal contours in Franconian dialects, but also aims to account formally for morphological alternations and other predictable correlates, *viz.* interactions of tonal accent with duration, vowel and consonant quality.

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I would like to thank Nomi Erteschik-Shir, the associate editor, and Carlos Gussenhoven and Jörg Peters for their feedback. This work was supported by the National Science Foundation (BCS-1845107).

https://doi.org/10.1017/S0952675719000241 Published online by Cambridge University Press

The existence of such additional correlates is perfectly in line with a foot-based analysis, since it mirrors correlates of stress and foot structure found in Germanic languages and elsewhere. The general strategy in existing tonal analyses, on the other hand, appears to be to formalise some tonal associations and infer others from phonetic implementation rules. Predictable segmental and durational correlates are typically referred to as phonetic enhancement of the tonal contrast, possibly followed by phonologisation (e.g. Gussenhoven & Peters 2019: 507). While this reasoning might be applicable from a functional or diachronic perspective, there is no attempt in the tonal approach to explicitly formalise how the synchronic grammar treats phonologically predictable interactions of tonal accent and segmental structure.

With regard to morphology, it is well established that in Franconian tonal minimal pairs which carry morphological information (e.g. number, case, adjectival morphology), Accent 1 corresponds to the more marked category (e.g. van Oostendorp 2005); I know of no counterexamples to this generalisation. While my metrical analysis explicitly formalises such alternations, morphological evidence has always been disregarded in the synchronic tonal approach. In their reply, Gussenhoven & Peters (2019: §3.1) dismiss singular–plural minimal pairs as 'exceptional'. In this context, it is notable that morphology, particularly the number distinction, is the most central ingredient of Gussenhoven's own diachronic approach to the genesis of tonal accent – it is so crucial that Gussenhoven (2018) refers to this as the 'morphological origin' of tonal accent. His work on diachrony places a rather small subset of singular–plural pairs at the heart of the tonal opposition, from where the contrast allegedly spread across the whole lexicon, partially as 'a marker of the number contrast' (Gussenhoven 2018: 354). The types of word pairs under discussion are exactly those that Gussenhoven & Peters call irregular in their reply, yet there is no evidence to suggest that the relevance of tonal accent for number marking may have decreased over time.

2 Empirical issues

At various points in their reply, Gussenhoven & Peters call into question the adequacy of the tonal associations I adopt in my work (particularly in Köhnlein 2011, where I analyse the tonal mapping in four representative dialects in detail), and claim that their analyses are to be preferred. Space permits brief discussion of only two relevant cases.

First, Gussenhoven & Peters argue against my analysis of the Roermond dialect, because of the use of an IP-final low boundary tone and an utterance-final high boundary tone to formalise the falling-rising contour for Accent 2. They state that my analysis thus wrongly predicts that phrase-final Accent 2 is realised without a final rise in continuation, because there can be no utterance-final H in continuative intonation, noting that 'the continuation intonation is identical to the interrogative intonation'

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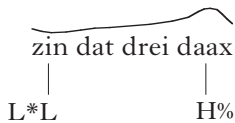
(2019: 513). However, I do not believe that this is a serious problem. My analysis was informed by a footnote in Gussenhoven's (2000) paper on Roermond, which, I have since learned, contained a number of errors affecting the content. Furthermore, the resulting empirical concerns can be easily overcome. One straightforward strategy would be to reanalyse the Roermond boundary tones as IP-final LH throughout the grammar, rather than decomposing them into an IP-final L and an utterance-final H; this would resolve the continuative intonation problem.

The second case I will consider is Gussenhoven's (2013, 2017) tonal analysis of my fieldwork data from Arzbach, which Gussenhoven & Peters (2019) discuss in some detail. Several aspects of this analysis merit discussion, but I concentrate only on a specific tonal pattern that Gussenhoven (2017) addresses in a corrigendum to Gussenhoven (2013), *viz*. the tonal contours in phrase-final, postnuclear interrogatives. (1) shows the tonal contours from Gussenhoven (2017). Note that these contours are 'partly inferred' (Gussenhoven 2017: 191; see also Gussenhoven & Peters 2019: n. 12) and thus differ from the data presented in Köhnlein (2011); furthermore, the segmental content of these examples is taken neither from my work nor from the Arzbach dialect, but from the Roermond dialect. In (1), Accent 2 is represented as a fully pronounced rise-fall with a LH%L% contour (where the initial L is the lexical tone), whereas Accent 1 without the lexical L has H%L%, realised as fall-to-mid.

According to Gussenhoven (2017: 191), the fall-to-mid in the bitonal contour for Accent 1 'generally applies to phrase-final syllables without the lexical tone'. This seemingly trivial statement in fact involves the necessity for some heavy machinery. The author proposes a pattern of phonetic simplification ('truncation') for a bitonal sequence, which applies to Accent 1 in (1a), but is apparently overridden for Accent 2 in (1b) because of the preceding lexical tone. Accordingly, the proposed more complex tritonal Accent-2 contour in (1b) is assumed to be fully realised ('compressed'), rather than truncated.

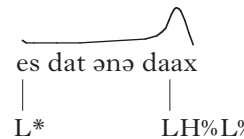
(1) *Inferred contours and tonal representations of phrase-final postnuclear interrogatives in Arzbach Franconian* (Gussenhoven 2017: 191)

a. Accent 1: H%L%



'Are these three days?'

b. Accent 2: LH%L%



'Is this one day?'

From the perspective of articulatory economy, a prosodic system that truncates a bitonal contour and compresses a tritonal contour is the exact opposite of what one might expect. Furthermore, it is unclear why and how a preceding lexical tone would block a phonetic implementation

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rule on a tonal sequence. Lastly, even if the two relevant contours were assumed to have the same representational complexity, it would still be typologically unexpected to find truncation for Accent 1 and compression for Accent 2. As Gussenhoven (2004: 138) notes, 'languages or language varieties may differ in that one is compressing and another truncating'. By the logic of this statement, differences by accent class in the same prosodic context of the same prosodic system should not exist. Gussenhoven (2017: 191) and Gussenhoven & Peters (2019) present this as a trivial aspect of their tonal analysis of the Arzbach data: 'nothing in the present paper hinges on this issue' (Gussenhoven & Peters 2019: n. 12); however, it seems to me that this is an illustrative example of the unlimited power of phonetic implementation in the tonal approach.

3 Conclusion

Although there are disagreements over theoretical concepts and empirical concerns, I welcome Gussenhoven & Peters' call for work on the issue from an experimental perspective, in the hope that it will indeed be possible to design experiments that help to distinguish between the two approaches. In closing, I emphasise that I do not wish to suggest that the metrical approach, or my specific metrical analysis, is necessarily better than *any* approach involving lexical tone. However, I do consider the metrical approach to be generally well equipped for the analysis of tonal accent in ways that tonal analyses that have been proposed are not, for the conceptual reasons outlined in my work and in other metrical analyses of European tonal accent systems cited above. Although I have addressed only a subset of my concerns, I hope to have indicated why Gussenhoven & Peters' reply does not challenge my view that metrical approaches to tonal accent are worth pursuing.

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