1. Problem

2. A Solution: Introducing Tonal Center-of-Gravity (TCoG)

Definition:
Tonal Center-of-Gravity: a generalization about the distribution of the area under the F0 curve for a given region, provides a perceptually robust measure of accent alignment, based on the location of the overall mass of the area under the F0 contour with respect to the accented syllable.

Hypothesis:
Perception of tonal alignment is driven not by the locations of F0 turning points per se, but by the location of the Tonal Center of Gravity (TCoG) within the relevant region.

An Experiment: Testing TCoG vs. Turning Points empirically
A comparison of the ability of competing models to categorize naturally-elicited instances of two pitch accents in English held to differ solely in turning-point alignment.

Summing up:
Tonal CoG accounts for a wide range of effects of global contour shape on perception, as well as for the importance of turning-point alignment, but refers directly to neither.

3. Further (correct) predictions
TCoG addresses several otherwise-puzzling experimental outcomes

References:

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