

Title: Modes to Moods: Perception of ambiguous looping melodies

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Tonal centre functions as a frame of reference for perception of melodies. Statistical parameters such as note durations have been previously shown to successfully and accurately predict the perceived key, or tonal frame of reference, and has been proposed to be the mechanism of tonal centre prediction. However, various musical traditions, like Hindustani art music employ a fixed tonal centre, which forces listeners to adapt to the provided frame of reference, instead of having to actively, and perhaps continuously predict a tonal centre. This observation leads to the question of what is more fundamental in the perception of melodies: frame of reference itself, or the analysis of note usage? In order to address this question, I presented ascending/descending pentatonic note sequences made up of isochronous Shepard tones to adult subjects (N=33). While an ascending chromatic scale made up of Shepard tones is heard as an ever-ascending sequence of notes, interestingly, the pentatonic was heard as a looping melody of ascending notes. Although the pitch height conveyed by Shepard tones is ambiguous, a distinct 'lowest/highest note' is heard, with the rest of the notes placed in between. Subjects reported a wide intra personal variation in perceived mood of the same stimulus, suggesting differential employment of internal tonal frame of reference. An externally provided drone tone was shown to bias the perception of perceived looping start point and mood. The data hints towards the usage of an arbitrary(?) internal frame of reference and an ability to adapt to an externally provided frame of reference, in absence of statistical features, hinting that while statistical information might be useful, assumption of a frame of reference is necessary for the perception of melodies.