

The Time Course of Responses to Modulation in Classical Music

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Our theory (*Music Perception*, 2014) holds that early processing of a melody depends on binding contour to scale at a particular pitch level, which requires a representation of the scale. Here we used the continuous probe-tone method to track the formation of this representation following a change of key. Listeners at three expertise levels heard two 2-min excerpts from Haydn string quartets, rating how well the 12 possible probe tones fit in relation to the music, for 12 trials with each quartet. We correlated these tonal-hierarchy profiles with baseline profiles for the keys for the 10 s before and after each shift of tonality. We also inspected the time course of responses for 30 s following each modulation. Experienced musicians registered all the modulations; nonmusicians registered just the closely-related keys. Musicians responded within 10 s to shifts among the closely-related keys, but took up to 30 s to respond to distant modulations.