

**Perceiving Modulations in South Indian Classical (Carnātic) Melodies by Indian and
Western Musicians and Nonmusicians**

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Abstract

We examined differences between musicians' and nonmusicians' perception of modulations as they unfolded in time in Carnātic music using Toiviainen and Krumhansl's (2003) concurrent probe-tone technique. Previous investigations showed that with culturally familiar music listeners use culture-specific and psychophysical cues, whereas with music from another culture they rely more on psychophysical cues and schematic knowledge imported from their own culture. We compared baseline profiles of four rāgams (modes) with profiles of modulating excerpts containing the same rāgams. Indian musicians' tonal hierarchy profiles tracked the modulations in and out of the new rāgam. Western musicians' profiles tended to match those of Indian musicians, indicating their employment of psychophysical cues as well as western schematic cues. Indian and western nonmusicians' profiles did not reflect the modulations. Indian nonmusicians' inability to identify modulations in melodies from their own culture suggests that musical training, irrespective of culture, facilitated performance on the continuous probe-tone task.