# Addressee Gestures in Karnatak Vocal Lessons: Multimodal Interaction in a Music Pedagogic Context

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## Background and research goals

In Karnatak music, a style of art music performed in South India, vocalists tend to gesture spontaneously while singing, producing simultaneous streams of melodic vocalization and upper body movement. The same occurs during vocal lessons, where teachers and students interact through both gesture and vocalization. Such gesturing is neither formally codified nor explicitly taught; performers acquire the habit gradually over the learning process. Gesturing in North Indian music contexts has been studied from various perspectives, largely in performance scenarios (e.g., Clayton 2007; Paschalidou 2017; Rahaim 2012). In this paper, I focus on gesture in Karnatak music pedagogic contexts, presenting analyses of gestural interactions between teachers and students in vocal lessons based on videos recorded in South India between 2011 and 2015.

The aim of this study is to gain insight into the use of addressee gestures in this music pedagogic context. Addressee gestures have been defined as "gestures produced by addressees to correspond with other speakers' utterances" (Alibali et al. 2019: 349). In other pedagogic contexts, it has been noted that teachers' addressee gestures may act to guide student attention, clarify referents, support students' understanding by making connections between instructional elements, and foster common ground (Nathan et al. 2017). In the context of Karnatak vocal lessons, I ask how interactions involving addressee gestures are structured as part of the ongoing joint action, and whether students' gestures show evidence of convergence with those of their teachers (Holler & Wilkin 2011; Kimbara 2008; Rasenberg et al. 2022).

## Methods

The lessons were recorded on two video cameras in the homes of teachers at locations across South India. Three lesson segments (each 16-20 minutes) by different vocal teachers were chosen as case studies. All addressee gestures were annotated using ELAN video annotation software (Lausberg & Sloetjes 2009). Detailed analyses were made of several interactions, which can be considered "trouble spots" (Nathan et al. 2017), where a teacher attempts to improve a student's performance and the student has to overcome difficulties in comprehension. In these trouble spots, all instances of addressee gestures and other co-singing and co-speech gestures were annotated alongside sung phrases and the musical "problem points" that the teacher aims to repair (Figure 1). Gestures were given action descriptors and instances of gestural convergence were noted.

## Results

Lessons are based on a demonstration-imitation model where the teacher demonstrates phrases that the student then imitates. There is little verbal interaction and student errors are largely repaired through repeated demonstration-imitation turns. The analyses show that teachers' addressee gestures often include features of their immediately preceding co-singing gestures. Addressee gestures also sometimes include new movement qualities that appear tailored to the repair. The gestural actions (e.g., pushing, swooping, tracing) show iconic and metaphoric relationships with the desired qualities of melodic movement (e.g., emphasis, articulation, pitch movement). In longer trouble spots, the addressee gesture action is typically repeated many times by the teacher as both co-singing and addressee gestures. These can be considered catchments, in which an underlying melodic discourse theme is indexed (McNeill 2000). In the trouble spots analysed, instances can be seen where the student's gestures converge with the teacher's preceding addressee gestures.

## Conclusions

Within trouble spots, teachers' addressee gesture actions also occur as co-singing gestures, thus building connections across time and modalities. This interactional structure has the potential to help teachers guide student attention to an error and demonstrate how it can be repaired. While co-singing gestures in this style are often tightly coupled to melodic movement (Pearson & Pouw 2022), addressee gestures seen here appear variably timed. Those that occur early could be considered cues for the student when approaching the musical problem point. However, many addressee gestures occur just after the related melodic movement, and these seem to be expressions of the teacher's desire that the student should sing correctly and part of the process of building common ground. Convergence of students' gestures with those of their teacher may provide teachers with confirmation of understanding and reflect the current status of common ground (Holler & Wilkins 2011). Because gestures in this context are often iconic of the types of movement that make the musical sounds (e.g., forceful movements create louder, more emphatic sounds) addressee gestures may also allow the student to gain insight into what the teacher physically does when singing the phrase. During lessons, teacher and student enter into interweavings of movement and sound where they often move together, coordinated in their joint action. On such occasions, they are connected through music and movement, and, in particular, through the teacher's intentions regarding the music, as expressed through their gestures.

**Index Terms**: addressee gestures, co-singing gestures, vocal music pedagogy, gestural convergence

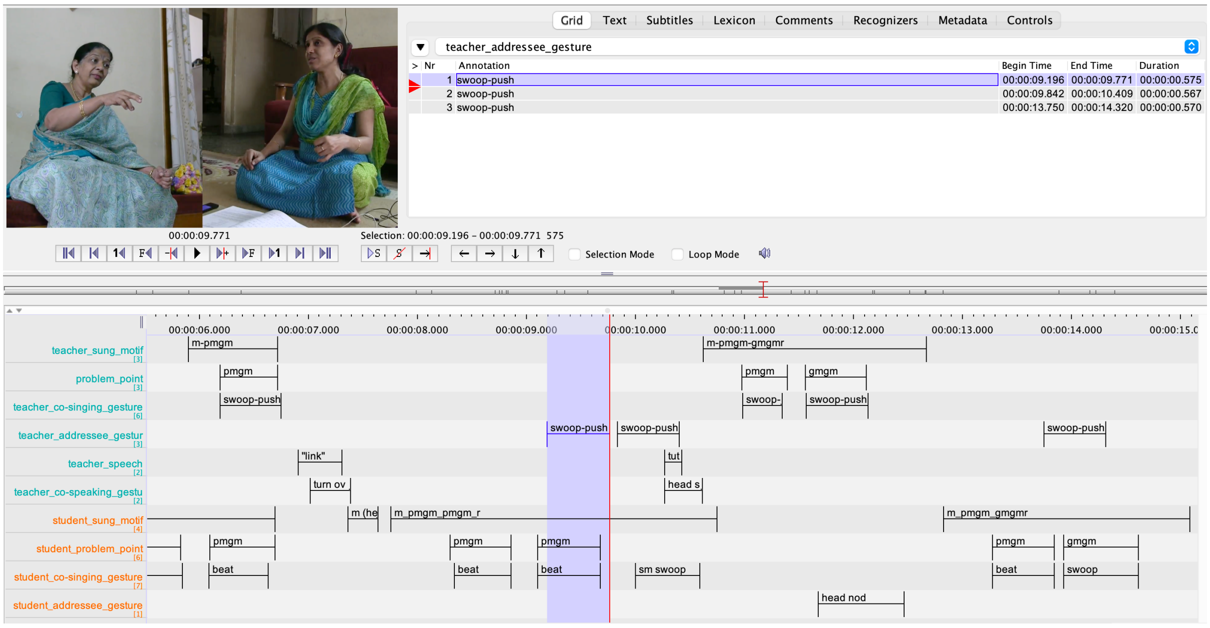


Figure 1: *Multimodal annotations in ELAN of a teacher-student interaction involving addressee gestures, with a central addressee gesture highlighted. The video in the top left is a composite image from two cameras – in reality, teacher and student are facing each other. Musical motifs are transcribed into sargam notation, the traditional notation used in Karnatak music in which letters indicate syllables that stand for note positions. "Problem points" are the particular musical segments that the teacher is aiming to correct in the student's performance, as suggested by the entirety of the interaction. Gestures are annotated with a description of their actions (e.g., push, turn, swoop, or combinations of these). The student's co-singing gesture converges towards that of the teacher by the end of this interaction.*

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