

Auditory-Motor Control of Vocal Vibrato

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Vocal vibrato is a singing technique that involves desired modulation of the pitch and loudness of a singer's voice. The acoustical modulations seen with vocal vibrato are similar to the undesired modulations associated with vocal tremor, a neurogenic voice disorder. It is unknown if typical mechanisms of sensorimotor control are involved in the production of vocal vibrato and if these mechanisms might be impaired in individuals with vocal tremor. The purpose of this study was to determine how classically-trained singers use auditory feedback to control their pitch during production of vocal vibrato. This study was carried out using a sudden pitch perturbation paradigm, as well as a gradual pitch perturbation paradigm. Preliminary results suggest that classically-trained singers compensate for both sudden and gradual perturbations of the pitch of their auditory feedback while producing vibrato. Some of the compensatory responses were larger in magnitude than those of healthy speakers and singers producing steady voices in previous studies. Additional singers will be recruited to determine if this pattern is consistent. Future studies will apply these methods to individuals with vocal tremor to determine if auditory-motor control differs when modulation of voice is unintended.