

ACOUSTICS2008/2255**Sopranos' secondo passagio: a resonance adjustment and/or a laryngeal transition to the whistle voice?**

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How are glottal source and vocal tract involved in the sopranos' passagio around E5? This pilot study investigates a legit soprano singing C5 to C6 with a lyrical technique and C5 to D7 in a "light" voice. On (de)crescendi and glissandi over the passagio, we observed clear bifurcations from "light" to lyrical mode, with discontinuous changes in f_0 , larynx vertical position, amplitude and shape of the electroglottographic signal. No such discontinuities occurred from C5 to D7 within the "light" mode. We established phonetograms of both modes and characterised differences in voice quality (Spectrum, Harmonicity, Open quotient). For [oe] in both modes, this singer tunes the first vocal tract resonance (R1) to f_0 over the passagio. For a free vowel, a single and strong resonance is observed in the "light" mode, which may correspond to the merging of R1 and R2 and which is tuned to $2 f_0$ below C6, then to f_0 until F6. Above F#6, two resonances are observed again and R2 is tuned to f_0 . All these observations suggest that, for this singer, the secondo passagio may correspond to both a resonance adjustment and a transition from the second laryngeal mechanism to the third, also called whistle voice.