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A method for describing different styles of singing

A comparison of a female singer’s voice source in ”classical”, ”pop”, ”jazz” and ”blues”

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Abstract
The voice is apparently used in quite different manners in different repertoires of singing. Also, it differs between individuals. Some of these differences concern the voice source, which, however, varies considerably with loudness, pitch, and mode of phonation. Therefore, when comparing different types of voice use, it is necessary to analyze how the voice source varies with these parameters. This investigation attempts to describe voice source differences between classical, pop, jazz and blues styles of singing as produced by a professional female singer and voice pedagogue at the pitches A3, C#4, E4 and G4 in soft middle and loud phonation. The voice source was analyzed by inverse filtering the flow signal. Four parameters were considered: (1) subglottal pressure, captured as the oral pressure during p-occlusion; (2) closed quotient; (3) the level difference between the two lowest source spectrum partials; and (4) the glottal compliance, defined as the ratio between the air volume contained in a voice pulse divided by the underlying subglottal pressure. The method was first to analyze how these voice source characteristics varied with pitch and loudness in the different modes and styles. Then averages across pitch and loudness for each mode and style were compared and related to their total range of variation in the subject. It was found that for most of the voice source parameters, classical was most similar to flow and leaky phonation, pop and jazz to neutral and flow phonation, and blues to pressed phonation.