

Estimating Perceived Phonatory Pressedness in Singing From Flow Glottograms

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Summary: The normalized amplitude quotient (NAQ), defined as the ratio between the peak-to-peak amplitude of the flow pulse and the negative peak amplitude of the differentiated flow glottogram and normalized with respect to period time, has been shown to be related to glottal adduction. Glottal adduction, in turn, affects mode of phonation and hence perceived phonatory pressedness. The relationship between NAQ and perceived phonatory pressedness was analyzed in a material collected from a professional female singer and singing teacher who sang a triad pattern in breathy, flow, neutral, and pressed phonation in three different loudness conditions (soft, middle, loud). In addition, she also sang the same triad pattern in four different styles of singing, classical, pop, jazz, and blues, in the same three loudness conditions. A panel of experts rated the degree of perceived phonatory press along visual analogue scales. Comparing the obtained mean rated pressedness ratings with the mean NAQ values for the various triads showed that about 73% of the variation in perceived pressedness could be accounted for by variations of NAQ.

Key Words: Phonation mode—Flow glottogram—Singing styles—Perceived pressedness—Normalized amplitude quotient.

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