

INVESTIGATING VOICE QUALITY WITH AN ELECTROGLOTTOGRAPH (EGG)

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Speakers appear to have numerous different strategies for varying voice quality, a term used to refer to the various configurations of the larynx, velum, tongue and lips. Those various configurations are known to impact, for instance, phonation, nasality or tenseness (Podesva, 2013: 427).

The physiological correlates of voice qualities such as breathy, modal, vocal fry or falsetto are mainly described in terms of three parameters of muscular tension: the adductive tension, the medial compression and the longitudinal compression (Gobl, 1989: 9). These four types of voice quality also appear not to have the same acoustical characteristics. Indeed, the fundamental frequency, vocal intensity or the source spectral slope (tilt) appear to differ more or less greatly (Childers & Lee; 1991: 2395). Observations show that the pitch for breathy, modal, vocal fry, and falsetto is defined as, respectively, wide-ranging, medium, low, and high (Hollien & Michel, 1968; Colton, 1969; Boone, 1971; Colton & Hollien, 1973; Hollien, 1974; Laver, 1980). While the analysis of these parameters can allow to accurately discriminate different types of voice qualities, other methods have been proved to be beneficial for the analysis of vocal fold vibrations, such as the electroglottography (EGG). This method enables the gathering of information such as: the degree of contact between the vocal folds, the fundamental frequency, and the movements of glottal closure and glottal opening during phonation. The degree of contact between the vocal folds decreases during the opening phase, but increases during the closing phase. Therefore, the signal increases during the closing phase of the glottis and decreases during the opening phase of the glottis (Henrich, 2001: 91). We will see that, for instance, the glottal pulse widths in vocal fry phonation have been found to be smaller (25%-45%) compared to modal register, due to the shorter open phase (Childers & Lee, 1991).

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