VERTICAL LARYNX MOVEMENT DURING STOP CLOSURE

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An extensive explanatory literature has grown out of the observation that vocal cord vibration is often maintained for longer stop closures than aerodynamic factors apparently allow. Larynx lowering is one of several supraglottal adjustments commonly suggested as a means to prevent equalization of transglottal pressure during oral closure. The empirical support for this hypothesis is primarily a difference in larynx height between voiced and voiceless stops during closure: the larynx tends to be lower for the voiced series, particularly at the moment of release. Earlier reports, however, do not always make explicit that a larynx height difference affects glottal airflow only if it implies an increase in supraglottal volume during the closure interval. This study investigates the change in larynx height during closure and how it relates to oral pressure build-up. Simultaneous larynx height and intraoral pressure records of subjects' productions of intervocalic bilabial stops were measured every 8 msec from 80 msec before consonant closure to 80 msec after release. The results are damaging to the hypothesis that, at least for English, speakers regularly lower the larynx during voiced stops to prolong glottal pulsing. Although previously reported differences in larynx height between voiced and voiceless stops were observed, there were no consistent differences in either the magnitude or frequency of larynx lowering during closure between the two stop categories. Further, the larynx lowered during nasal stops, although nasal airflow presumably maintains transglottal airflow without cavity-enlarging maneuvers. Finally, there was no unique relationship between paired larynx height/intraoral pressure values for the voiced stop as might be predicted.