Dissertation Abstract

Facial Expressivity Effects of Voice Treatment in Parkinson's Disease: Using the Facial Action Coding System to Evaluate Duchenne Smiling Behavior and Treatment Efficacy at 6-Month Follow-Up

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Abstract

Nonverbal signals contribute significantly to interpersonal communication. Facial expressivity, a major source of nonverbal information, can be compromised in Parkinson’s disease (PD). The resulting disconnect between subjective feeling and objective facial affect can lead people to form negative and inaccurate impressions of people with PD with respect to their personality and intelligence. Previous research (Spielman, Borod, & Ramig, 2003) suggests that the Lee Silverman Voice Treatment (LSVT LOUD) might benefit facial expressivity in PD. To better understand the nature and psychosocial impact of facial expression deficits, a two-component study was conducted. First, the long-term (6-month) efficacy of LSVT LOUD was compared to a second intervention (ARTIC), which targets articulation, in treating facial expressivity changes in PD. Global measures of facial expressivity were used to study 6-month follow-up data and build upon the pre-/post- findings of Dumer (2011). Second, smile behavior was examined at baseline and as a function of treatment condition and time. Smile frequency, intensity, and onset duration data were examined, and Duchenne smiles, commonly thought to reflect spontaneous or “felt” emotion, were distinguished from non-Duchenne smiles. Data were obtained from video footage of healthy controls (age and sex matched; n = 11) and individuals with Parkinson’s disease (n = 45). The Parkinson’s disease group was comprised of: individuals receiving no treatment (n = 17), individuals receiving an articulation-based treatment (Artic; n = 12), and individuals receiving LSVT LOUD (n = 16). Video footage was obtained at baseline, post-intervention, and 6-month follow-up. Facial expressions were coded using the Facial Action Coding System (FACS) developed by Ekman and Friesen (1978). At baseline, Healthy Controls generally exhibited higher levels of facial expressivity as compared to individuals with PD, though gender effects may have contributed to these findings. At 6-month follow-up, global measures of facial expressivity did not significantly differ across treatment groups. Although the LSVT group increased in some measures of smile behavior, LSVT did not generally differ from other treatment conditions in degree of treatment impact over time, as assessed by a nonparametric analysis of change-scores.