

Recently, there has been an increase of interest regarding the acoustic properties of speakers' voices and the relationship these properties have with personality trait attribution, specifically charismatic traits. Previous research which has observed the influences of pitch, pause-filled-gaps, gender, etc., on the perceived vocal and/or personality traits of a speaker such as charisma, dominance, as well as many others. However, to our knowledge, very little work has been done on the effects of varying suprasegmental amplitude differences, or reversely their perceived loudness of these parameters, on these traits. Specifically, do the variations in the amplitude of speaker's productions affect how listeners perceive a speaker's dominance (Experiment 1). Using the definitions of dominance from Putts et al. (2007) dominance can be either physical (the speaker is more likely to win a physical fight) or social (the speaker is more likely to be a respected leader – this is tied to charismatic traits). Experiment 1 manipulated stimuli from 6 native (Canadian) English speakers, 3 male and 3 female, producing four different sentences and two longer paragraphs. The stimuli's amplitudes were manipulated on three different levels: (i) phrasal overall intensity differences (i.e., manipulations for the entire sentence or paragraph), (ii) focus differences (amplitude differences affecting one specific word of a sentence), and (iii) manipulations of stressed syllable amplitude, to investigate the effect of varying amplitude differences between stressed/unstressed syllables on listener ratings. Stimuli were presented through headphones and participants are asked to answer four questions about each presented audio stimulus: two questions correlating to physical dominance and two question corresponding to social dominance. These questions are answered using a sliding scale ranging from *strongly agree* to *strongly disagree*. Previous research suggests greater overall pitch variation results in a higher perception of charisma (social dominance) versus louder amplitude which is perceived as more physically dominant. For experiment 1, we expect to see a positive correlation to social dominance for the focus condition, and a positive correlation to physical dominance in the sentence condition. Furthermore, we expect to see stronger correlations in the paragraph environments than to individual sentences due to the increase of auditory exposure to each voice. We are currently analyzing the results of this experiment. Experiment 2 examines the relationship of vocal quality and the perception of personality traits. Although there are studies which investigate a singular vocal quality perception and personality attribution, to our knowledge, there are no current studies which examine several vocal qualities of an individual speaker. To examine this relationship, Experiment 2 uses 6 native (Canadian) English speakers, 3 male and 3 female, producing the same two paragraphs from Experiment 1 with the following (speaker-produced) vocal manipulations: modal, nasalization (hypernasalization), glottalization (creaky voice), breathy voice, and smiling in two conditions: natural and extreme smiling. Participants are presented stimuli through headphones and are asked to judge ten statements about the person associated with each acoustic stimulus. These questions are correlated with 4 of Big 5 of personality traits: extraversion, agreeableness, openness (omitted), conscientiousness, and neuroticism and are answered using a sliding scale from *strongly agree* to *strongly disagree*, similar to Experiment 1. Our results demonstrate that listener ratings were higher for smiling voice quality for both the natural smiling condition and the extreme smiling condition across all personality traits. Listeners rated female speakers more negatively in creaky voice than males for the personality traits of agreeableness, extroversion, and neuroticism. Additionally, both smiling variants are consistently rated higher for female speakers than their male counterparts.

Putts, David Andrew, Carolyn R. Hodges, Rodrigo A. Cárdenas, and Steven JC Gaulin. "Men's voices as dominance signals: vocal fundamental and formant frequencies influence dominance attributions among men." *Evolution and Human Behavior* 28, no. 5 (2007): 340-344.