COGNITIVE, EMOTIONAL, AND SOCIAL INFLUENCES ON VOICE PRODUCTION ELICITED BY THREE DIFFERENT STROOP TASKS

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Psychological states affect vocalizations and this has been studied using various research methods.[1] The effects of emotion, cognition, and social evaluation have been of interest to voice clinicians because of the known correlations between psychological states and voice disorders.[2] To understand the mechanisms by which psychological states influence voice production, voice researchers seek to find the relative contribution of psychological states on the voice production of individuals[3-6] However, most research techniques assessing one psychological state do not necessarily take into account other psychological states such as cognitive load or social awareness. Nor do these techniques necessarily lend themselves to be modified to assess other psychological states. Little is known about the differential influences of each physiological state on an individual's vocalization. To begin to pars out these influences it would be helpful employ research techniques that are similar, to quantify different psychological states.

This study employs three different Stroop tasks, which all require the respondent to name the color of the ink (CoI) in a presented word. The original Stroop task[7] requires the participant to name the (CoI) for color-words. A cognitive discrepancy occurs when the presented word is a color-word, (e.g. red) but the ink is of another color (e.g. blue), presenting a cognitive interference that affects the timing and accuracy of responses. Past research noted vocalizations differed between incongruent and congruent.[8] The Emotional Stroop[9] requires the participant to name the (CoI) of neutral-word and emotion-word introducing an interference when the presented word is an emotion word (e.g. murder). The Taboo Stroop[10] task requires the participant to name the (CoI) of neutral-word and taboo-word introducing an interference when the presented word is a taboo word (e.g. a curse word). The presentation of an emotion-word or taboo-word presents an emotional or social interference that affects both the timing and accuracy of responses; however there is no data on whether vocalizations differ for the emotion-words and taboo-words.

Participants engaged in three different Stroop tasks while their vocal responses were recorded. Two blocks of 24 trials were presented for each Stroop task totalling 110 vocal utterances. Forty percent of the utterances for all Stroop tasks were incongruent or interference tasks. Acoustic and electroglottographic recordings were extracted and recorded. Results for the Stroop task show similar findings compared to past research, however, there appear to be differences compared to the Emotion and Taboo Stroop. Implications of findings will be presented.

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