

THE GRADUATE COLLEGE OF THE
UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER

ANNOUNCES THE FINAL EXAMINATION OF

Justin Daniel Dvorak

FOR THE DEFENSE OF THE DOCTOR OF PHILOSOPHY DEGREE
GRADUATE COLLEGE
DEPARTMENT OF COMMUNICATION SCIENCES AND DISORDERS

Friday, August 12, 2016 | 3:00 P.M. | College of Allied Health Building, Room 3025

Estimating prosodic cue-trading curves via eye-gaze response confidence



COMMITTEE IN CHARGE:

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ABSTRACT:

Prosody, defined as the planned modulation in pitch, intensity, and duration, is a critical side-stream component of the speech signal. Aside from signaling contextual or pragmatic information, prosody is also used when making stress judgements, and can

thereby affect lexical access. Research into the relative importance of acoustic cues in stress perception has yielded ambiguous results, as have studies aiming to elucidate the trading relationships that exist among these cues.

The present study used eye tracking to assess decision confidence in word stress judgements under fully-crossed combinations of prosodic cues differing by successive JNDs (just-noticeable differences) in each dimension. From the confidence measures, trading curves were computed among dimensions and compared across syllables.

The behavioral results of this study, including stress judgements and response time, support the primacy of pitch and intensity over duration in stress perception. Both of these dimensions were significantly associated with increased response accuracy and decreased response times. Higher relative pitch was also significantly associated with greater response confidence, and was allocated the greatest weight when the three dimensions were examined using the prosody index.

Curiously, while cue trading was not observed in the behavioral responses, a complex pattern of trading emerged when comparing curves generated from confidence measures. This pattern, in addition to being nonlinear and non-monotonic, also varied significantly by syllable. The results of this study can be used to refine indices of prosodic variability for detecting and assessing speech disorders.