

Beyond Group Differences: Specificity of Nonverbal Behavior and Interpersonal Communication to Depression Severity

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ABSTRACT

Depression is one of the most prevalent mental health disorders and a leading cause of disability worldwide. AVEC 2013 heralds the first systematic effort to detect presence of depression from nonverbal behavior. This keynote addresses three related issues.

Specificity. Are differences between depressed and non-depressed persons specific to depression or are they common to the types of people most likely to become depressed? Depression is strongly related to stable individual differences in neuroticism, introversion, and conscientiousness. Differences in nonverbal behavior between those with and without depression could indicate personality differences rather than depression. Do they?

Functions. What can non-verbal behavior tell us about possible functions or mechanisms of depression? Two alternative hypotheses are *Affective Dysregulation* and *Social Risk Avoidance*. To contrast these hypotheses, fine-grained analyses of facial expression are needed that can distinguish between displays of negative emotion. In particular, between negative displays that elicit approach or affiliation (e.g., sadness) and those that elicit avoidance (contempt and disgust).

Interpersonal effects. Early work proposed that depression has strong interpersonal effects. Recent work in psychopathology has tended to neglect the possible effects of depression on interaction partners and the influence of context. Does context matter for depression detection? How might depression negatively impact interaction partners?

In this keynote, I explore these issues from the vantage of longitudinal research in depression. The findings suggest that nonverbal behavior in depression can be automatically measured, is highly specific to severity of depression, and is a strong indicator of change over the course of treatment. Avoidance of social risk appears to be a critical function of depression. Depression strongly impacts the actions of others. Automated

detection of depression may be optimized by exploiting social context, paying careful attention to displays of affiliation and risk aversion or rejection and the communicative displays of interaction partners.

Categories and Subject Descriptors

Primary Classification: J. Computer Applications, J.4 SOCIAL AND BEHAVIORAL SCIENCES, Subjects: Psychology

Keywords

Depression, Facial Expression, Vocal Prosody, Individual Differences.

BIOGRAPHY

Jeffrey Cohn is Professor of Psychology at the University of Pittsburgh and Adjunct Professor at the Robotics Institute, Carnegie Mellon University. He has led interdisciplinary and inter-institutional efforts to develop advanced methods of automatic analysis of facial expression and prosody and applied those tools to research in human emotion, interpersonal processes, social development, and psychopathology. He has served as co-chair of the *IEEE International Conference on Automatic Face and Gesture Recognition* and serves as an associate editor of *IEEE Transactions in Affective Computing*.

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