Listen to my body talk: Gesture type and frequency as markers of depression
RQ: How do depressed and non-depressed people differ in their use of gestures during a depression-screening interview?
Agenda

- Literature
- Method
- Results
- Discussion
Literature
Depression

- 16% of college students are affected by depression at some point in their college career (Aeselton, 2012)

- 120 million people worldwide (World Health Organization, 2011)

- 30%-50% cases misdiagnosed (Simon & Von Korff, 1955)
Current Depression Screening

- Patient Health Questionnaire – PHQ9
  - Effective to a degree (USPTF, 2002)
  - Social stigma
  - Self-report bias

- Need for objective behavior measures
Theoretical Framework

- Embodied Cognition proposes the general notion that there is a connection between thought & movement (Wilson, 2002)

- Internal states are manifested through bodily movements (Wilson, 2002)
  - Nonverbal behaviors can be indicative of the internal state depression
  - Reflexive & easily recognizable by others (DeGelder, 2006)
Thought & Gesture

- Some contradictory research regarding nonverbal behavior
  - Focus on movements in general, not specific types

- “Gestures directly transfer mental images to visible forms, conveying ideas that language cannot always express.” McNeill (1992)
  - Language (verbal & nonverbal) is directly tied to our inner thoughts or images (imagery) (McNeill, 2005)
  - This imagery is profoundly embodied in gestures (McNeill, 2005)
Rumination is typically associated with depression
- Tendency to engage in repetitive negative thinking (Papageorgian & Siegle, 2003)
- Negative thoughts more likely to be reflected through nonverbal behaviors (Ekman & Fridland, 1987)

- Gestures embody our internal imagery (thoughts) (McNeill, 2005)
- Gestures will reflect these internal, negative thoughts
Method
Participants

- Recruitment through SONA
- \( N = 31 \)
  - 11 depressed
  - 20 non-depressed
- Center for Epidemiologic Studies-Depressed Mood Scale (CES-D; Radloff, 1977)
  - Ran 85; 11 scored depressed
- \( M \geq 16 \) contacted
- Videotaped Interviews
Interview Questions

- **Baseline Q’s**
  - BQ₂: What was the most pleasant thing you experienced this week?
  - BQ₃: What was the most unpleasant thing you experienced this week?

- **Critical period Q’s – PHQ9**
  - HQ₁: Over the past two weeks have you felt little interest or pleasure in doing things?
  - HQ₂: In the past two weeks have you felt down depressed or hopeless?
  - HQ₄: Over the past few weeks how have you been feeling?
Coding

- **Body Action Coding System – BACS** *(Sweet & Pazian, 2008; 2011; Sweet & Kroeger, 2014)*

- **Illustrators**
  - Illustrators are located in head and hands that accompany speech & are tied to speech and thought *(Ekman, 1980)*
  - Baton, Diectic, Ideagraph
Hypotheses & Results
Hp: Non-depressed individuals are more likely to use gestures than depressed individuals

- ANCOVA \(\rightarrow\) unexpected direction
  - \(F(1, 28), = 13.54, p = .001, \eta_p^2 = .326\)
- dep M = 10.4, SD = 10.7
- non-dep M = 2.8, SD = 4.6
H1: Non-depressed individuals are more likely to use batons than depressed individuals

$t(26) = 2.6, p > n.s.$

Depressed: M=7.89, SD=8.964
Non-depressed: M=2.16, SD=2.834
H3: Non-depressed individuals are more likely to use diectic gestures than depressed individuals

$t(28) = 3.6, p < .05$

Depressed: $M = 1.44, \text{SD} = 1.014$
Non-depressed: $M = .16, \text{SD} = .501$
H4: Depressed individuals are more likely to use ideographs than non-depressed individuals

\[ t(26) = 2.3, \ p < .05 \]

Depressed: \( M = 2.11, \ SD = 2.522 \)
Non-depressed: \( M = .53, \ SD = 1.219 \)
Discussion
Discussion

- Baton usage not significant, still notable that depressed individuals use 4x more

- Depressed used significantly more diectics
  - Rumination (Papageorgian & Siegle, 2003)
  - Emphasizing/referencing negative feelings
  - Negative thoughts more likely to be reflected through nonverbal behaviors (Ekman & Fridland, 1987)

- Depressed used significantly more ideagraphs
  - Socially desirable responses
  - Harder to express feelings
Objective behavioral measures are promising.

Future research will investigate training primary care physicians and mental health professionals.