Dissociating Cognitive and Affective Empathy

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Background & Objectives

- Empathy is a higher order aspect of social cognition that can be divided into two processes: **(a) Cognitive Empathy**, which involves recognizing emotions and taking the perspective of others, and **(b) Affective Empathy**, which involves affective responsiveness and emotional contagion (Hooker et al., 2010).
- Deficits in these empathic abilities have been associated with a number of psychiatric disorders, including major depressive disorder. However no studies have yet examined whether depressed individuals show a dissociation between these abilities (Thoma et al., 2011).
- The most widely used measure of empathy is the Interpersonal Reactivity Index (IRI; Davis, 1980). However this may not accurately measure affective empathy and the two-factor structure of the scale that is most commonly used in the literature has not been supported by statistical evidence (Cliffordson, 2002; Pulos et al., 2004; Yarnold et al., 1996).
- The present project involves two studies the aim of which was to examine **(1)** the appropriateness of using the IRI as a measure of affective empathy, and **(2)** a possible dissociation between cognitive and affective empathy in major depression.

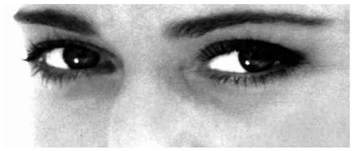
Study 1

- Participants: 417 participants completed the IRI through Amazon's Mechanical Turk and were paid $0.10 for their time (Mean Hourly Wage = $1.71). This is above the site's average hourly pay of $1.38 (Horton & Chilton, 2010).
- A Confirmatory Factor Analysis (CFA) was conducted to test the validity of the two-factor approach, and a follow-up Exploratory Factor Analysis (EFA) was conducted to determine the best model fit.
- The CFA utilized the diagonally weighted least squares (DWLS) estimator, and found poor model fit for the 2-factor IRI (CFI = 0.69, TLI = 0.67, RMSEA = 0.11, 90% CI = 0.10 – 0.11).
- The EFA utilized the quartimin rotation and found that a 5-factor model provided the best fit (CFI = 0.95, TLI = 0.92, RMSEA = 0.08, 90% CI = 0.07 – 0.08). The structure with the best fit maps closely onto the original model put forth by Davis (1980), with the exception of the Perspective Taking factor, which in our model is split between "Interpersonal Understanding" and "Interpersonal Problem Solving." The other factors consisted of "Emotional Concern," "Situational Placement," and "Negative Emotion Regulation."

Study 2

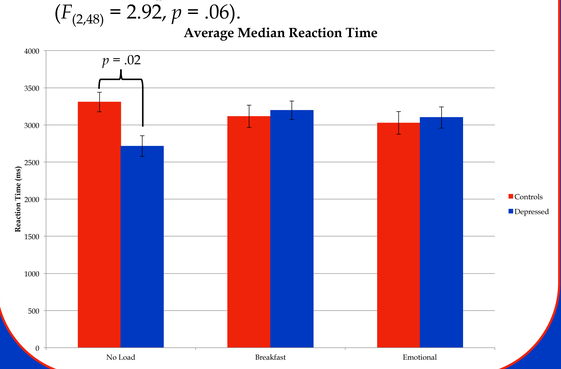
- **Participants**: 54 participants (37 controls, 17 depressed) completed a rumination manipulation, and cognitive and affective empathy tasks.
- **Depression Diagnosis**: SCID-I diagnosis, or BDI ≥ 13.
- **Materials**: **(1) Cognitive Empathy**: Reading the Mind in the Eyes (Baron-Cohen et al., 2001), and **(2) Affective Empathy**: Lexical Decision Task using emotionally valenced words and non-words.
- Participants also completed the Empathy Assessment Index (EAI) and IRI.

Cognitive Empathy



1	2	3	4
Panicked	Incredulous	Despondent	Interested

- We found a marginally significant interaction between depression and rumination condition ($F_{(2,48)} = 2.92$, $p = .06$).



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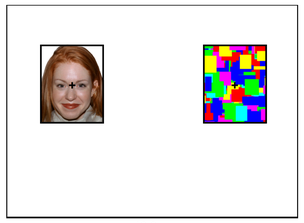
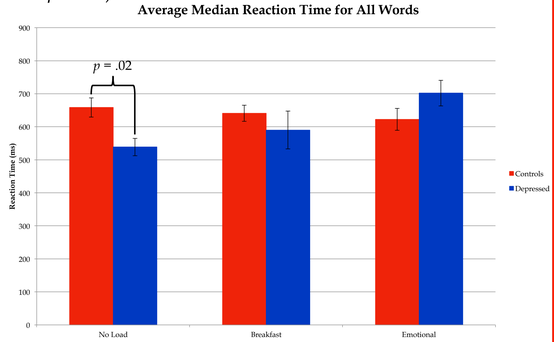
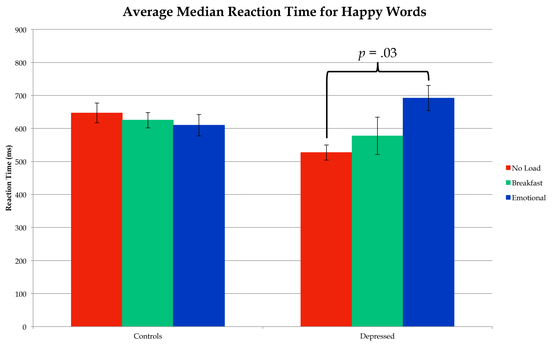
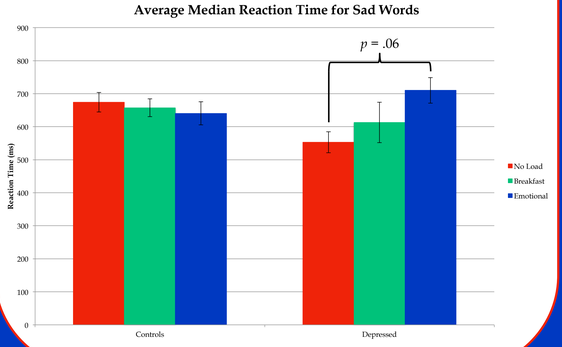
Affective Empathy



- There was no effect of priming, however reaction time to happy and sad words did show an effect.
- We found a significant interaction between depression and rumination condition ($F_{(2,48)} = 4.13$, $p = .02$).

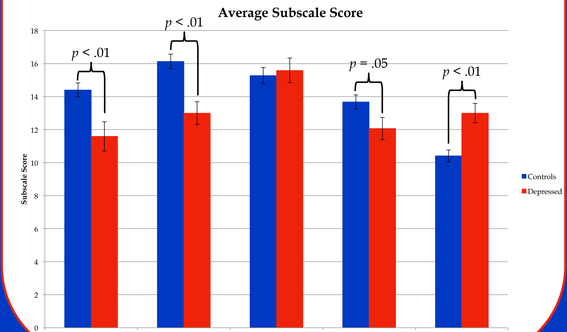






Self-Reports

- A MANOVA of our 5-factor model of the IRI showed a significant main effect of depression; however post-hoc tests only showed differences on the Negative Emotional Regulation factor.
- A MANOVA of the EAI also showed a main effect of depression. Post-hoc tests showed significant differences on subscales associated with affective empathy, but not with cognitive empathy.



Discussion

- Our findings indicate that the 2-factor model of the IRI lacks support, and thus should not be used to measure these aspects of empathy.
- Behavioral findings support a dissociation between affective and cognitive empathy in depression during rumination on negative events.
- The negative rumination only had an effect on depressed individuals, and specifically effect the response to happy words in the affective empathy task. The differences on cognitive empathy were not significant.
- Findings from self-report measures support the behavioral findings.

Contact Information

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