



The Effects of Ostracism on Young Children's Mood and Social Information Processing

Shonise D. Flowers and Jonathan S. Beier, Ph. D

UMD College of Behavioral and Social Sciences - Summer Research Initiative 2013



Introduction & Background

- As humans, we possess an innate drive towards positive and long lasting relationships (DeWall & Richman, 2011); this is classified as the fundamental Need to Belong (Baumeister & Leary, 1995).
- Ostracism has the unique capability of threatening at least four fundamental needs: belonging, self-esteem, control, and meaningful existence (Williams, 2009).
- Previous research has examined excluded adults' physiological responses and behavioral coping strategies (Williams, 2009):
 - Reflexive stage - produces a rapid response similar to pain
 - Reflective stage - recovering from pain by engaging in responses that fortify threatened need
- Ostracism also affects the way adults process social information:
 - Adults who experience exclusion show selective attention to positive stimuli, as revealed by faster identification of, prolonged attention towards, and slower disengagement from smiling faces (Dewall, Maner, & Rouby, 2009).
 - Excluded adults show greater sensitivities to social cues, such as an improved ability to distinguish fake from real smiles (Bernstein et al., 2008) and heightened gaze cueing (i.e., increase in following people's eye gaze direction; Wilkowski, Robinson, & Friesen, 2009)
- However, the developmental perspective on how young children process information from their social world after experiencing social exclusion is lacking.

Current Aims

- The aim of the current study is to investigate whether concerns about social exclusion influence young children's social information processing and mood.
 - In particular, the study examines whether children who have witnessed acts of ostracism subsequently focus more on socially salient and informative features of a person's face, as exhibited by increased looking to the eye region.
 - The study also examines participants' patterns of eye gaze for side biases that may support inferences about neural processes involved in viewing faces following experiences with ostracism.
 - Typically, right-hemispheric specialization for face processing leads to a viewing bias towards the side of the face in the left visual field (Wheeler, 2010).
 - Electrophysiological research with older children and adults indicates that experiences of social exclusion selectively engage prefrontal regions in the left hemisphere (Dewall, Maner & Rouby, 2009).
 - In the current study, looks to the right or left sides of the faces may provide suggestive evidence for the involvement of lateralized neural processes.
 - Finally, the study examines children's positive and negative facial expressions to evaluate the effect of the manipulation on their mood.

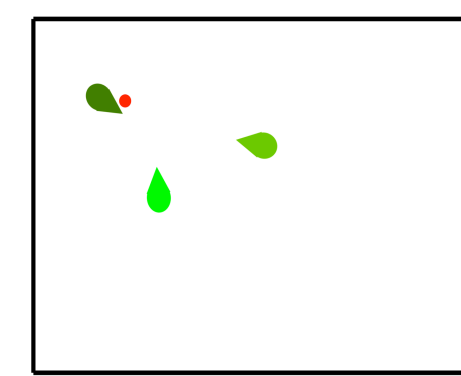
Study 1 - Eye Tracking & Video Coding

Participants

- Thirty-two German 5 - 6 year olds (mean age: 66m; 22d; range: 59m; 14d - 71d; 20d)
- 16 participants per between-subjects condition

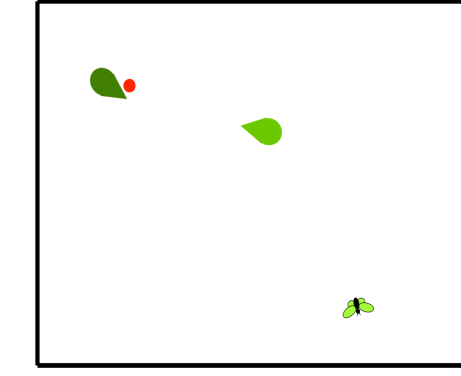
Procedure

- Participants were randomly assigned to either an ostracism or control condition.
 - Ostracism condition (OSTR):** children viewed two animated movies featuring instances of a character (a shape) being socially excluded from a group of other characters.
 - Control condition (CONT):** children viewed similar movies that did not feature social exclusion.
- Following the movies, all children viewed a series of 4 photos of neutral faces, presented for 10s each.



Version 1 - Ostracism

Two characters playing with a ball while another one attempts to join the group but continues to be ostracized.



Version 2 - Control

Two characters playing with a ball while a fly moves around the screen.



Neutral Faces

After watching the movies from each version, children viewed four photos of neutral faces. (Note: The actual faces used are not shown here)

Data collection

- Eye-tracking measure**
 - Data on gaze patterns while viewing the faces were recorded using a Tobii X120 eye-tracker
 - Did condition influence the distribution of looks to different face regions?
 - Did condition influence the distribution of looks to the left or right side of the face, indicating lateralized processing?
- Emotion coding measure**
 - Each participant's video was coded for the presence of facial emotions that indicated their mood. The videos were coded by two raters for expressions of positive (+1, +2), negative (-1, -2) or neutral (0). (Krippendorff's $\alpha = .73$)
 - Did condition influence visual display of participants' moods while viewing the faces?

Study 2 - Replication & Extension

Participants

- Ongoing data collection aims to replicate (5 - 6 year olds) and extend (3 - 4 year olds) the age groups in Study 1.
- Increased power over Study 1: 24 participants per condition.

Procedure - See Study 1 procedure

- Two new parent-report questionnaires may help identify individual differences in subjects' responses:
 - the Colorado Child Temperament Inventory (CCTI)** measures a child's temperament, including dimensions of emotionality, activity, sociability, and impulsivity.
 - the Social Responsiveness Scale (SRS)** - measures the severity of social impairment associated with Autism spectrum disorders.

Results

- The results of this study are forthcoming.

Discussion/Conclusions

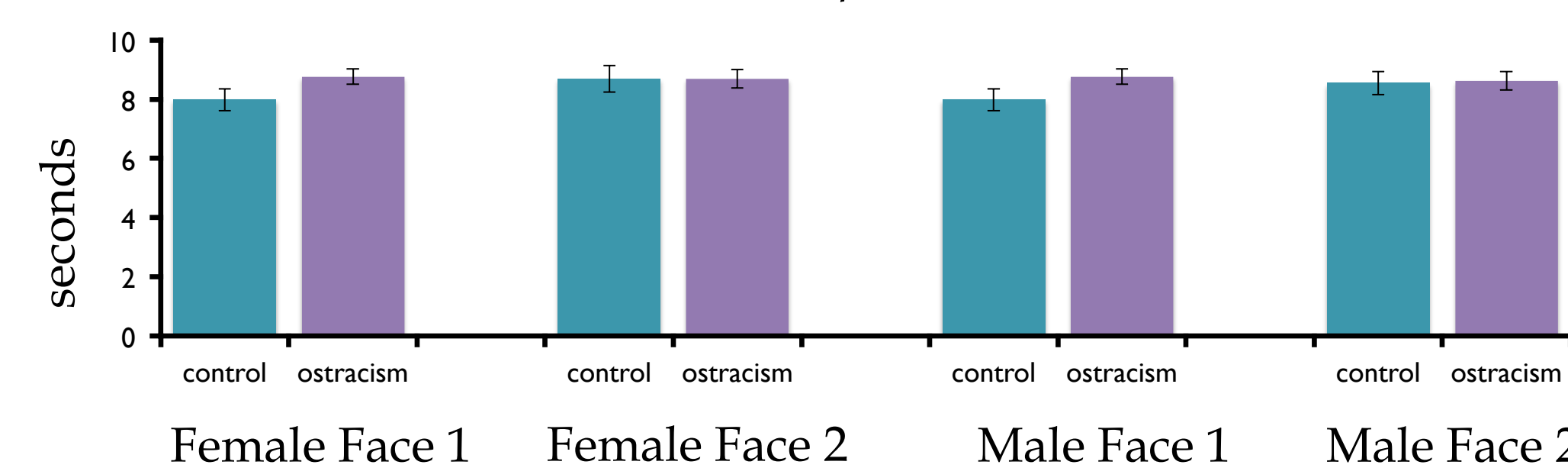
- There were no statistically significant differences across the OSTR and CONT conditions on the reported measures.
- A marginally significant trend occurred in which participants in the OSTR condition looked relatively more to the side of the face in their own right visual field (i.e., the face's left eye) than did participants in the CONT condition.
 - A similar effect was found earlier with adult participants (Beier, Over, & Carpenter, in prep).
 - This side bias is the opposite of the left side bias typically obtained during face-viewing tasks.
 - The question of exactly what cognitive processes the current right side bias reflects remains. Possibly relevant systems known to display neural lateralization include language (left hemisphere; Krashen, 1973) and approach versus avoidance motivations (left versus right hemisphere). (Davidson et al., 1990)
- To explore these issues further, Study 2 (ongoing) replicates and extends findings from Study 1.
 - Study 2 increases statistical power over Study 1 (24 vs. 16 participants per condition). With greater statistical power, researchers can confirm the marginally significant side bias as a potential indicator of lateralized neural processing.
 - Study 2 also introduces two parent-report scales, measuring child temperament and social impairment, that will allow researchers to explore individual differences that may influence children's performance.
- With these changes, we hope that the results of Study 2 will allow us to make better inferences about the effects of ostracism on young children's social information processing.

Study 1 Results

Did viewing depictions of ostracism influence...

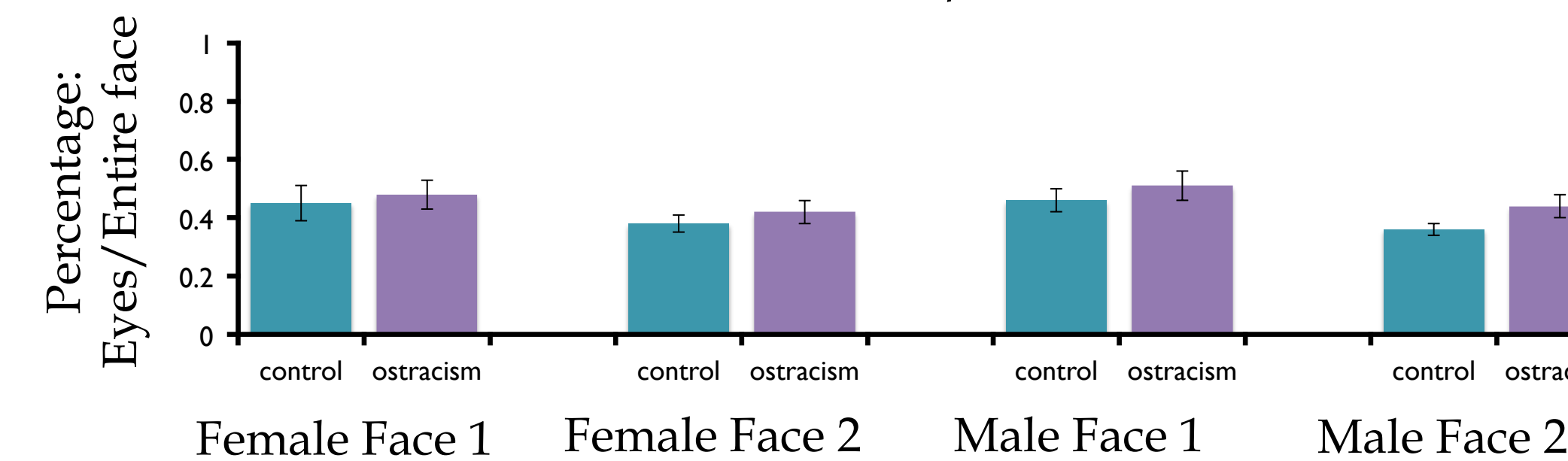
Amount of time spent looking at face?

No $F(1,30) = 1.39, p = .25$ (n.s.)



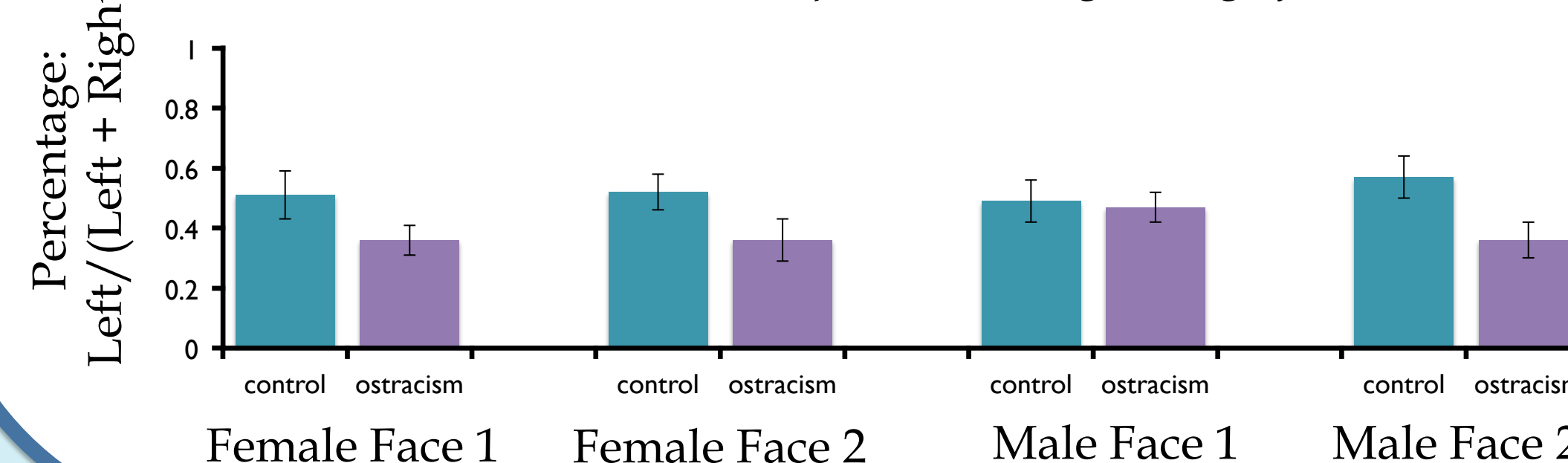
Percentage of time spent looking at eyes?

No $F(1,30) = 1.45, p = .24$ (n.s.)



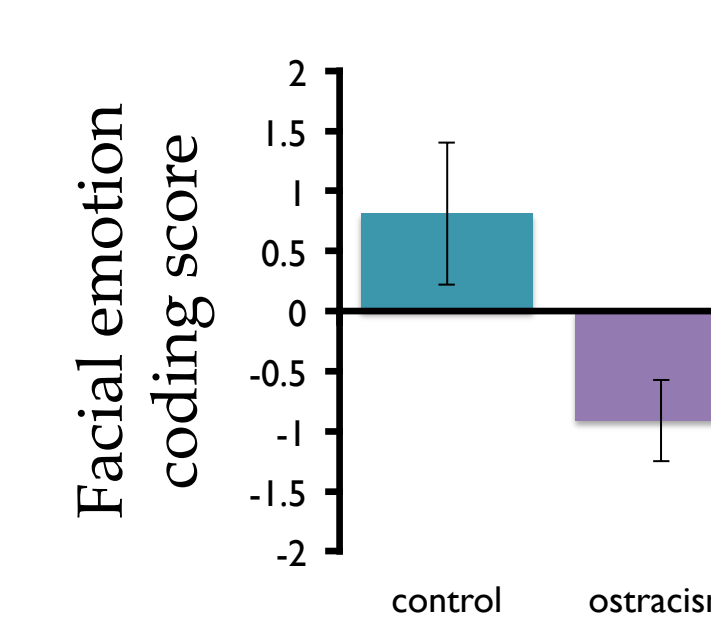
Percentage of time spent looking at left vs. right eye?

No $F(1,30) = 3.45, p = .073$ (marginal significance)



Facial emotions expressed while viewing movies?

No $t(30) = 1.47, p = .15$ (n.s.)



Acknowledgements

I would like to express my extreme gratitude to: my mentor, **Dr. Jonathan Beier**; the entire Lab for Early Social Cognition; **Julie Klaber** for providing secondary coding to the dataset; the University of Maryland - College Park, **Dr. Kim Nickerson**, and **Amanda Allen** for the opportunity to participate in the Summer Research Initiative.