



# Self-Face Activation Changes how We Perceive Others



Developmental Affective Neuroscience Lab

Tottenham, Nim and Li, Yuan Hang  
Department of Psychology, University of California at Los Angeles

CNS 2010 Poster # A 50  
Contact: yuanli@ucla.edu

## Study 1 Methods

- **Participants:** Seventy six undergraduates (35 female).
- **Emotional Videos:** Participants viewed emotional videos while we recorded his/her facial response.
- **Face Prime:** Participants were randomly assigned to view either a clip of his self-face or the face of a stranger.
- **Emotion Identification Task:** Participants separately identified morphed happy/neutral and angry/neutral facial emotions from the NimStim face stimulus set (Tottenham et al., in press).

## Study 1 Results

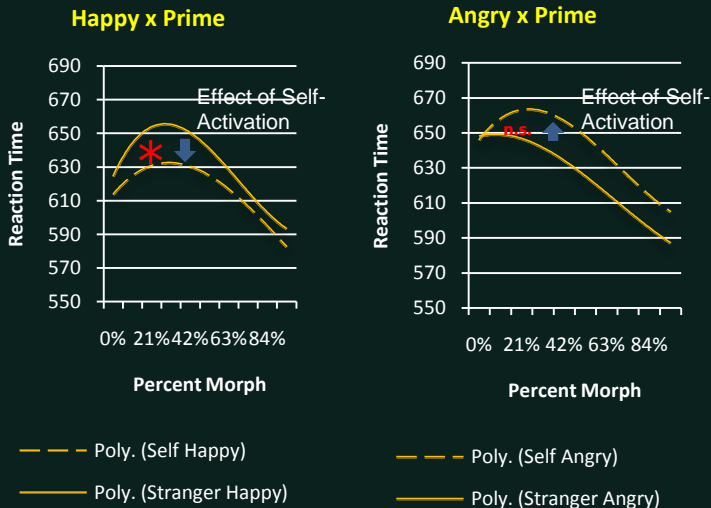
- Significant results: Prime (Self, Stranger) x Emotion Condition (Happy, Angry) for DVs of mean RT, raw Area Under the Curve RT, and modeled Area Under the Curve RT (Figures: Happy x Prime; Angry x Prime).

## Study 1 Discussion

- Study 1 shows that activating the self-face selectively speeds up the participant's ability to distinguish Neutral-Happy morphed faces.

## Study 1

- **Happy Condition:** Is the face shown 'neutral' or 'happy'?
- **Angry Condition:** Is the face shown 'neutral' or 'angry'?



## Participants View Emotional Videos



## Participants Randomly Assigned Face Prime

Self

Stranger



OR



## Introduction

- The self-face is used in understanding the emotions of others.
- Newborns use their own face to mimic others (Meltzoff & Moore, 1977); newborn macaques do so as well (Gross, 2006).
- Adults automatically and unconsciously use their own face to mimic others to understand their emotions as well, as evidenced by electromyography studies (Dimberg & Patterson, 2000).
- Furthermore, response of the self-face predicts individual differences in emotion categorization (Neta et al., 2009).
- Can priming the self-face directly influence the categorization of emotions in others? We address this with two studies.

## References

• Dimberg U. & Petterson, M. (2000). Facial reactions to happy and angry facial expressions Evidence for right hemisphere dominance. *Psychophysiology*, 37: 693-696.

• Gross, L. (2006). Evolution of Neonatal Imitation. *PLoS Biology*, 4(9): 1484-1485.

• Meltzoff, A.N. & Moore, M.K. (1977). Imitation of facial and manual gestures by human neonates. *Science*, 198: 75-78.

• Neta, M., Norris, C. J., & Whalen, P. J. (2009). Corrugator muscle responses are associated with individual differences in positivity-negativity bias. *Emotion* 9(5), 640-648.

• Tottenham, N., Tanaka, J., Leon, A.C., McCarry, T., Nurse, M., Hare, T.A., Marcus, D.J., Westerlund, A., Casey, B.J., Nelson, C.A. (in press). The NimStim set of facial expressions: judgments from untrained research participants. *Psychiatry Research*.

## Study 2 Methods

- **Participants:** Twelve undergraduates (12 male).
- **Spontaneous generation of emotions and Face Prime was identical to Study 1.**
- **Face Rate:** Participants rated the emotionality of happy, neutral, and angry faces (not-morphed) from the NimStim face set.

## Study 2 Results

- Significant results: Prime (Self, Stranger) x Emotion Condition (Happy, Angry) for Neutral Face Ratings (Figure: Prime x Neutral Face Rate).

## Study 2 Discussion

- Study 2 shows that activating the self-face selectively alters the perception of neutral faces to be seen as more negative.
- Self-face activation distinguishes the differences between neutral and happy faces, and facilitates the overall speed of their recognition.
- The studies together show that activating internal self-face processes directly facilitates to the recognition of emotions in other people.

## Study 2

- Rate on a scale of 1-9, 1 being negative, 5 being neutral, and 9 being positive.



## Prime x Neutral Face Rate

