INTRODUCTION

Accurately encoding emotion serves an adaptive purpose for it can alert members of a group to a potential threat. Misinterpreting emotional cues can result in 1) misidentification and 2) inappropriate action effecting social perception and group integration. Many studies highlight that people with high social anxiety (HSA), experience attention biases to threatening stimuli and prolonged attention to angry faces (Mogg & Bradley, 2002). However, little is understand about how the effects of positive emotions (e.g., happy faces) are possibly encoded and perceived differently in individuals with HSA compared to low social anxiety (LSA).

We use adaptation to understand how happy faces are processed by individuals with HSA. Adaptation to a repeated stimulus decreases neuronal responses for that stimulus, thereby biasing behavioral and neuronal responses to subsequent stimuli. For example, repeated exposure to happy faces, biases an emotionally neutral face to appear more negative (or angry). (Rutherford et al., 2008).

In this study, (1) we investigated baseline biases in emotional processing across participants with HSA and LSA by measuring reaction time to 80% happy and 80% angry faces and (2) we quantified changes in reaction time to 80% angry and 80% happy faces after adaptation to happy faces in participants with HSA vs. LSA.

METHODS: FACE ADAPTATION

Participants viewed a series of morphed faces along an emotional continuum (happy to neutral to angry), and rated faces as happy or angry using a two alternative forced choice button-press paradigm. Based on these responses, we established each participant’s baseline point of subjective equality (PSE), where they perceive the face as equally happy and angry. Then participants were adapted to a series of 100% happy faces. Following adaptation, participants viewed and rated the same morphed faces and we quantified the change in PSE. Reaction time was measured from the onset of the question mark to a response button press.

RESULTS

Reaction Time at Baseline

![Graph showing reaction time at baseline for 80% angry and 80% happy faces for LSA and HSA participants.](Image)

Reaction Time After Adaptation to Happy

![Graph showing reaction time after adaptation to happy faces for LSA and HSA participants.](Image)

CONCLUSIONS

Summary of findings:
1) Baseline: participants with HSA tended to show greater initial reaction times to angry faces compared to individuals with LSA, supporting an attention bias to threatening stimuli.
2) Post-adaptation: participants with HSA tended to show a larger decrease in reaction time to 80% angry faces compared to LSA, who showed a minimal decrease which may be because of positive social priming reducing the salience of angry probes. Interestingly, participants with HSA tended to show a considerable increase in reaction time to 80% happy faces post-adaptation to happy faces, compared to a small decrease in LSA.

Limitations:
- Analyzing probes at the maximal emotional valence may miss larger changes occurring in more ambiguous probes.

Future Directions:
- Future research should examine whether treatment reduces the biased ratings in individuals with high social anxiety.

Similarly, future research should explore possible differences in adaptation effects across additional emotions (sad, disgust, fear).

REFERENCES


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