How the Brain Resolves Ambiguity in Emotion Perception

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BACKGROUND
- Interpreting emotional information from the faces of others guides social behavior.
- This information is often ambiguous, requiring reliance on internal brain states1.
- Intrinsic brain processes involved in resolving emotional ambiguity have important implications for everyday interactions, especially in the context of conditions like depression2 and autism3.
- Prior work has examined neural correlates of discrete emotions(e.g., 1-4), but much remains unknown about emotionally ambiguous face valence judgments (e.g., 4).
- It is unknown how evoked responses differ for different perceptual outcomes to an identical emotionally ambiguous stimulus.

OBJECTIVE: Investigate what brain systems are important for different percepts (sad, neutral) occurring on identical trials of emotionally ambiguous stimulus presentation.

METHODS
Participants (N = 30, 21 Female, Mage = 21.71)
- Emotion Face Judgement Task:
  - Repeated exposure to emotionally ambiguous face
  - Judged as ‘sad’ or ‘neutral’
  - Image individually chosen for each subject prior to experiment using threshold detection procedure on eleven different levels of sad-to-neutral morphing
- Visual-spatial working memory task (for main effect of task comparison)
- General linear models constructed using spm12

MAIN EFFECT OF TASK
- As expected, face judgments activated ventral stream compared to visual-spatial WM task relying on dorsal stream

CONCLUSIONS
- Repeating analyses in a larger sample will clarify whether a larger effect size is needed given subtle differences between perceptual outcomes.
- Absence of task-evoked differences at the group-level could reflect different decision-making strategies that e.g., give weight to different types of stimuli features across individuals.
- Future work will investigate how pre-stimulus brain states and transdiagnostic factors may be related to the tendency to perceive the stimulus as sad compared to neutral.

REFERENCES

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