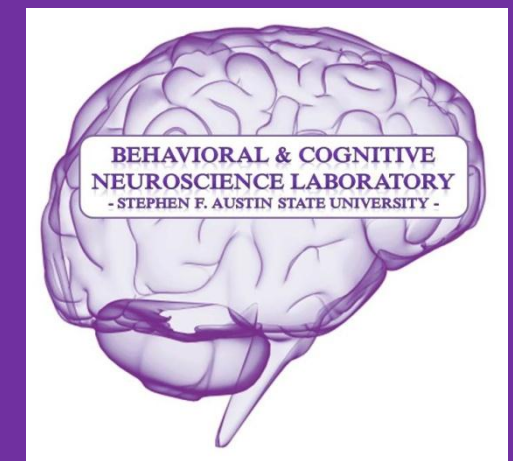




Memory of Emotive Faces

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Introduction

Research has shown that people remember human faces better than animal faces or other objects, but do humans remember Emotional faces better than Neutral faces? While it is known that activity in the fusiform gyrus is linked with our ability to remember people's faces better than other things (Gauthier et al., 2000), it is unknown if there is a link between emotionally valenced faces and an improved memory of that face. It is also unknown whether Emotional faces take longer to process than Neutral face, but since there is more information, not only the face but the emotion that person is feeling as well, it is certainly likely that this is the case.

The link between Emotional faces and better memory of them would be logical since more processing, identifying the emotion, and deciding on an appropriate response to someone displaying said emotion, would go into viewing an Emotional face compared to a Neutral face. Evolutionarily it would also make sense that people would be able to process Emotional faces more efficiently since a person's face is hardly ever static and associating people with certain emotions, particularly fear or disgust, could be quite adaptive.

Methods



(Kanade, Cohn, & Tian, 2000; Lucey et al., 2010; O'Brien, 2013)

Participants ($N=98$) were recruited from Stephen F. Austin State University. Each participant was shown 60 grey-scale images (20 per face type) of animal faces, human faces with a Neutral expression, and human faces showing either fear or disgust for 50 milliseconds. All images were shown twice (120 trials), so that a "New" face was a face that had not previously seen, whereas an "Old" face was a face that had been previously seen. After each image participants were asked if the image was new or old and they chose accordingly by using a computer mouse to click on boxes labeled "New" and "Old." The dependent variables were the percentage correct on the memory task and the latency of their response on the memory task.

Results

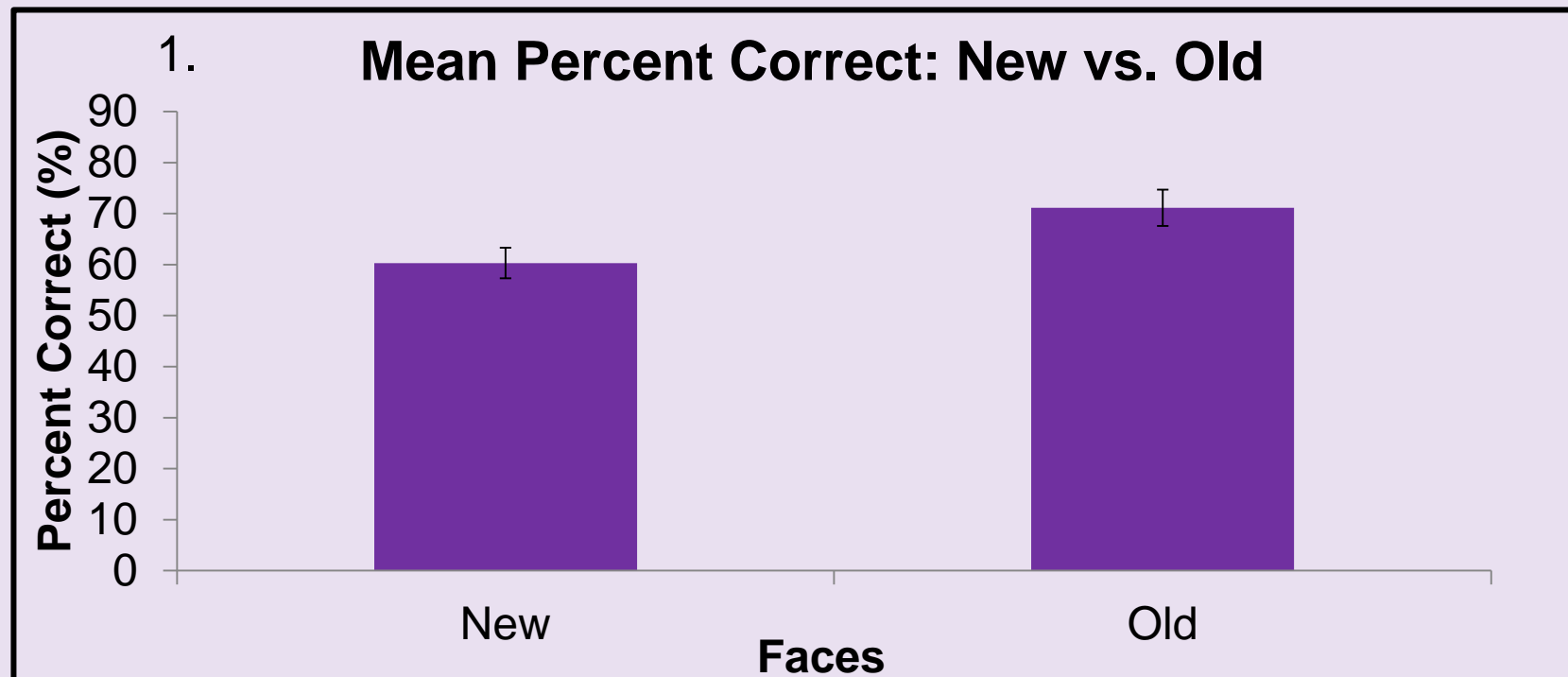


Figure 1: The mean percentage of correct responses was lower on trials in which participants viewed faces the first time (New) compared to when they viewed the face the second time (Old).

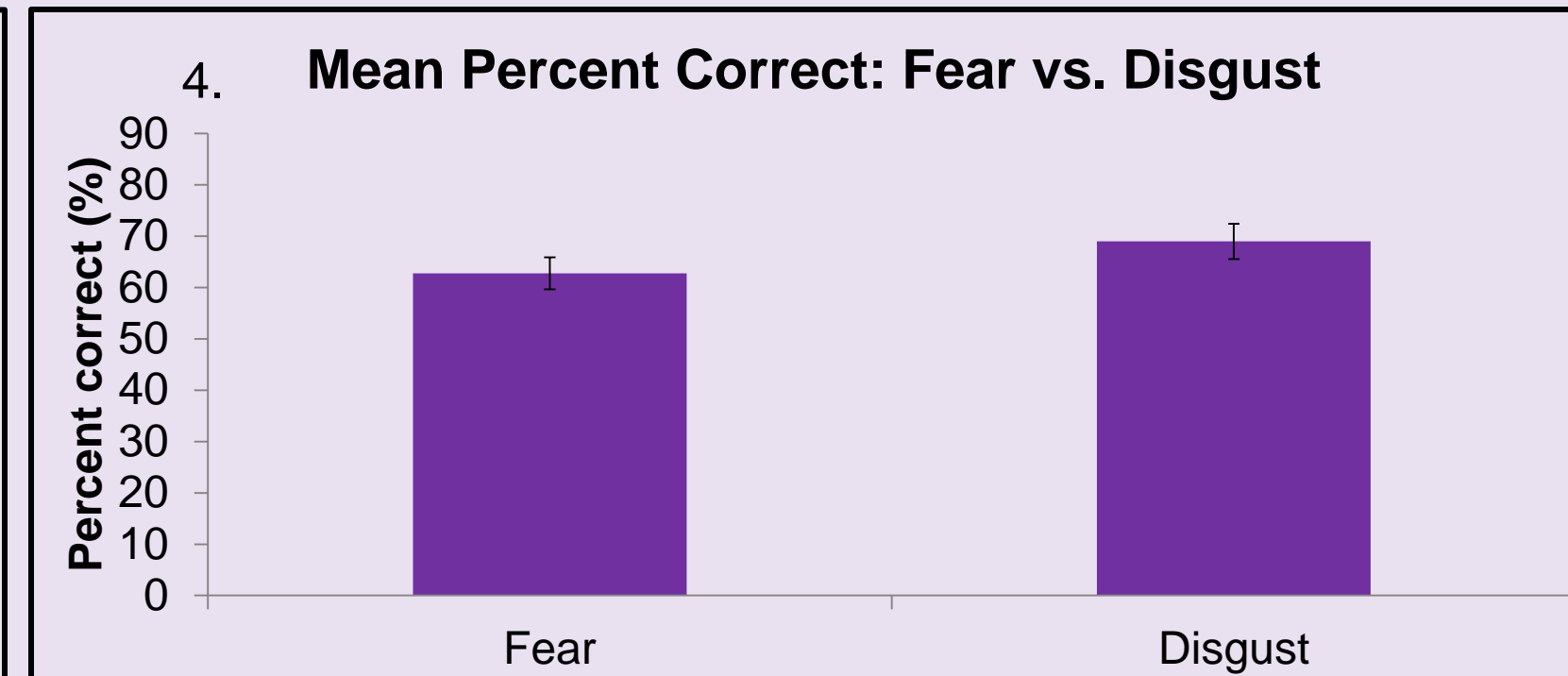


Figure 4: The mean percent of correct responses were greater in the Disgust condition than for the Fear condition.

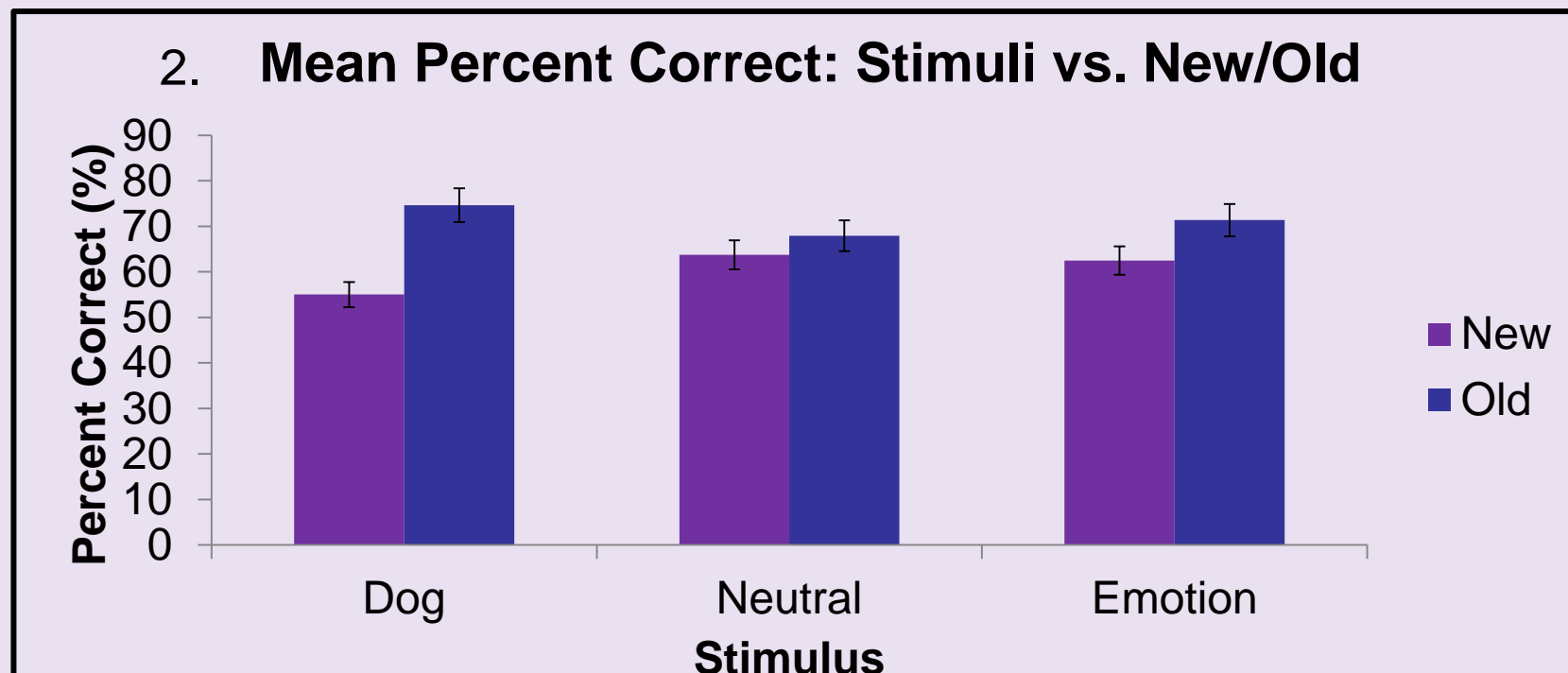


Figure 2: The mean percent correct for dog faces showed greater difference between New and Old faces than did Emotional faces which had a greater discrepancy than Neutral faces.

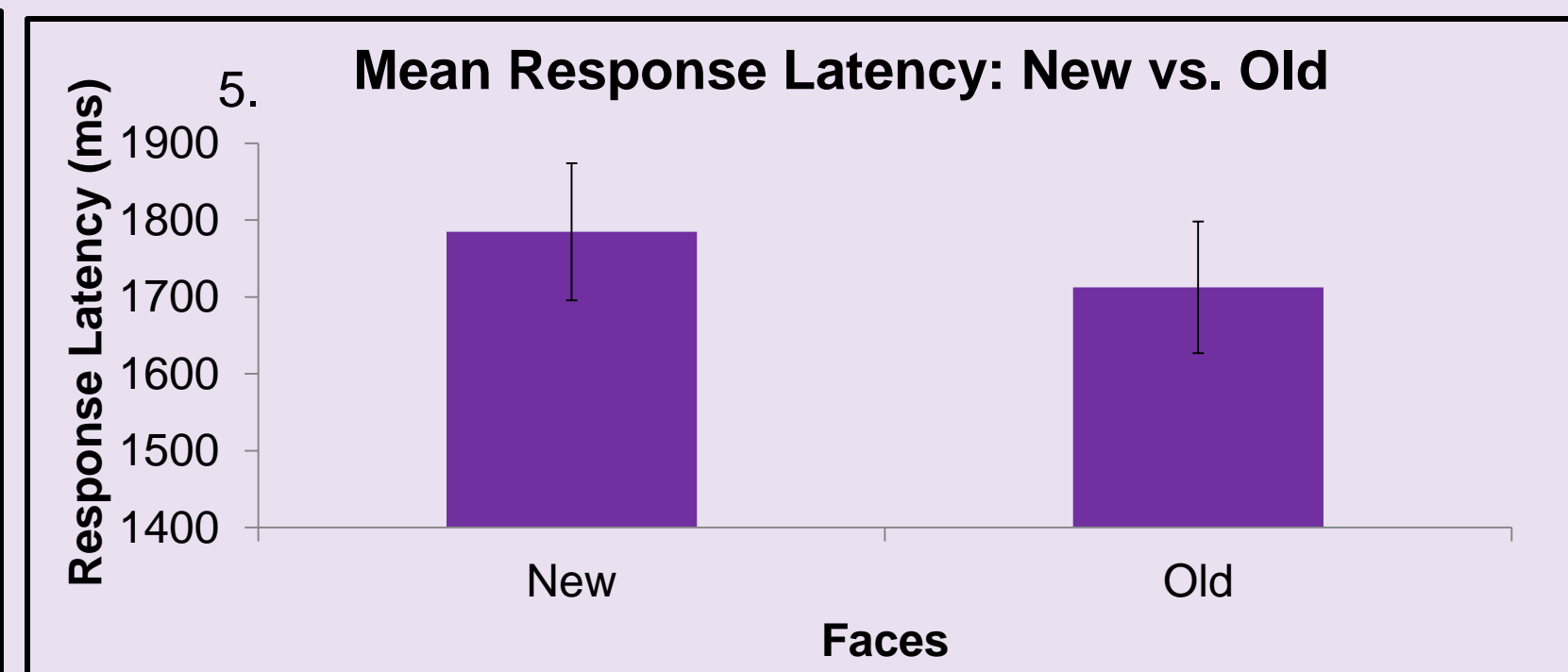


Figure 5: The mean response latency was longer on trials in which participants viewed faces the first time (New) compared to when they viewed the face the second time (Old).

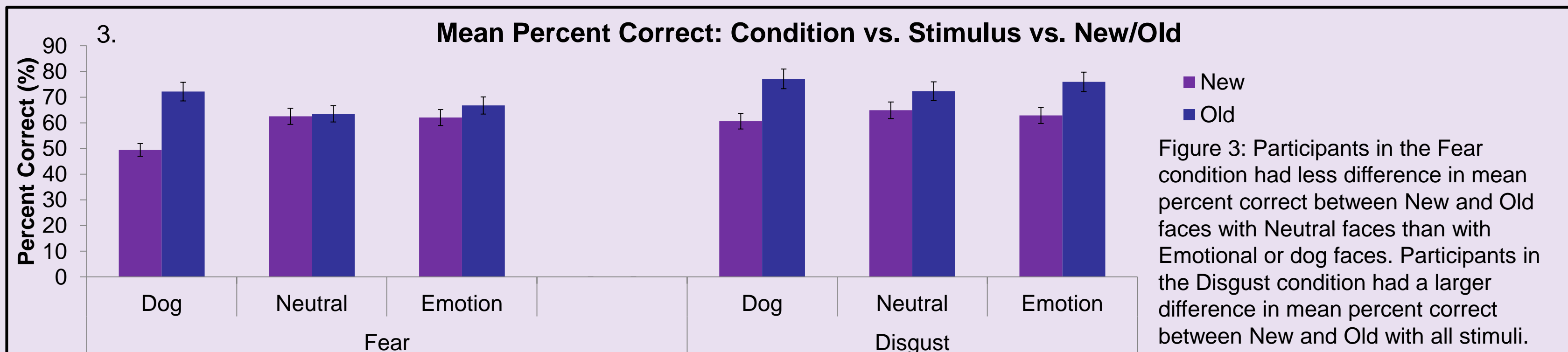


Figure 3: Participants in the Fear condition had less difference in mean percent correct between New and Old faces with Neutral faces than with Emotional or dog faces. Participants in the Disgust condition had a larger difference in mean percent correct between New and Old with all stimuli.

Conclusion

Participants were more accurate at identifying faces the second time they saw the face compared to the first time.

A two-way interaction suggests that participants correctly identified a higher percentage of Old dog faces than New ones. However for the human faces this difference wasn't not as pronounced with Emotional faces having the second largest difference between New and Old faces and Neutral faces having the smallest difference.

Participants identified a higher percentage of faces in the Disgust condition than in the Fear condition when the stimuli were summated.

Participants in the Disgust condition correctly identified a higher percentage of Old faces compared to New ones. Participants in the Fear condition were similar at identifying Old and New human faces. By contrast participants had a higher percentage correct identifying Old dog faces when compared to New dog faces.

Participants were faster at identifying a face having seen it before, suggesting that they were processing unseen (New) faces longer.

References

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