Do Children Recognize Pareidolic Faces?

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Introduction

- Faces provide important social information about our environments, including emotion and identity of the individual (Omer et al., 2019).
- Pareidolia is a phenomenon in which people perceive facial features in inanimate objects (Takahashi & Watanabe, 2013; Taubert et al. 2017).
- This study is part of a larger study examining children's perception of pareidolia. Our main question is to determine whether or not children recognize pareidolic faces as they do human and animal faces and the extent to which they see faces in pareidolia.
- There is evidence that even children are sensitive to the structures in face-like objects. Infants as young as 8-10 months can experience pareidolia in faces by understanding where the mouth is supposed to be on said face (Kato & Mugitani, 2015), other studies also suggest that 8 months is when perception of pareidolia develop (Zhou et. al, 2020).
- Infants as young as 6-12 weeks old were shown to prefer stimuli that resembled a human face, showing understanding of objects with face like structures (Mondloch et. al, 1999).
- Neurotypical children are more likely than children with autism to look at face-like objects first when presented with face-like objects (pareidolia) and non-face-like objects side by side (Guillon et al., 2016).

Tasks

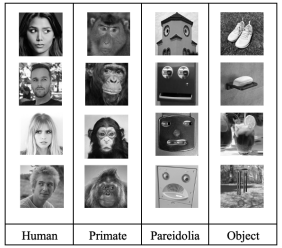

Fig 1. Examples of images.

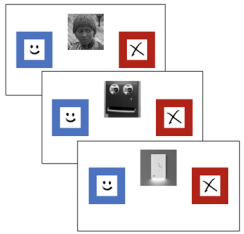

Fig 2. Examples of presentation.

Method

- We tested 4- to 5-year-old children (n=58) on Zoom by presenting a PowerPoint presentation. Both boys (n=30) and girls (n=28) were studied.
- Participants saw human faces, primate faces, pareidolic faces, and objects without faces one at a time (Figure 1).
- Participants were asked to categorize the images by placing them in the blue square (pictures that have a face) or the red square (pictures that do not have a face) and verbally indicating their selection by stating the words "blue" or "red" (Figure 2).

Results

- Children were significantly more likely to correctly identify human and primate faces compared to pareidolia, $F(3, 171) = 14.723$, $p < .001$, $\eta^2_p 0.205$; however, children were at above chance levels in identifying pareidolic objects as having a face, $t(57) = 9.93$, $p < .001$.

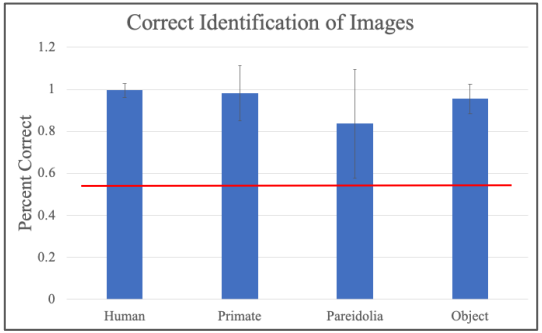

Fig 3. Means represent the correct identification of the images, error bars represent the standard deviation.

Discussion

- Children can recognize faces in objects because faces are extremely important for them developmentally and socially.
- By 4 years of age, children have a plethora of experience with and understand the social nature of human faces and they may recognize that the faces of living objects provide more relevant information than pareidolic faces.
- Based on our findings, we expect that children may follow the eye gaze for humans and animals more so than the eye gaze for pareidolia as we continue our larger study.
- Future studies should explore why children may see faces in objects and the age of development in which they start to see faces in objects. This research can help to determine the difference between neurotypical and neurodivergent children and their facial recognition abilities.

References

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