

## What is PMO?

- Visual perception disorder in which faces appear distorted.
- 99/100 cases reported in literature are acquired (via stroke, TBI, migraine, etc.).
- Only one brief case report of developmental PMO (D-PMO) in literature.
  - D-PMO = lifelong symptomatology with no evidence of acquisition

## Participant

- 15-year-old male (Zed), right-handed, lifelong distortions and no known neurological events. Dyslexic, color blind, aphantasic.
- Reports seeing dynamic, complex, and varied distortions (as seen on right) to faces and bodies in everyday life.

## Methods

- Multi-method exploratory case study.
- Completed 20 neuropsychological assessments of face recognition, perception, and detection.
- Created and administered 12 distortion severity assessments.
- Neuroimaging with DWI and fMRI.

# The first comprehensive case study of developmental prosopometamorphopsia (D-PMO)



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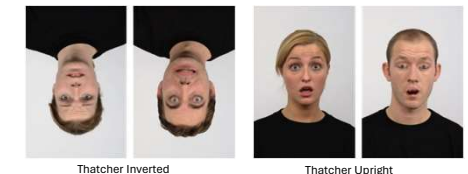
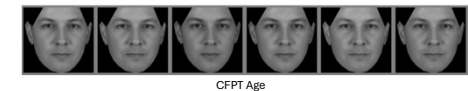
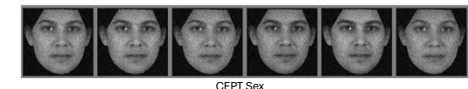
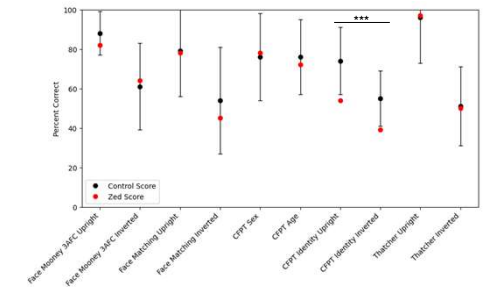
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## Discussion

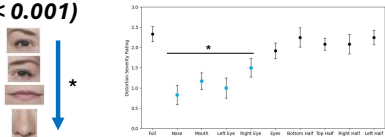
Zed sees distorted faces *BUT* scores normally in tests of face perception → two separate streams of face processing?



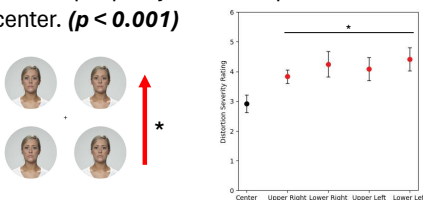
## Questions

Does distortion severity vary over viewing condition?

Significant **reduction** in distortion severity for individual features when compared to full face. ( $p < 0.001$ )



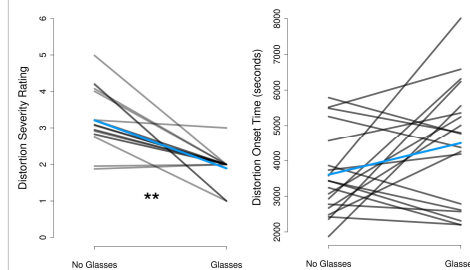
Significant **increase** in distortion severity on faces in periphery when compared to faces in center. ( $p < 0.001$ )



Do eyeglasses impact distortion severity or onset time?

Significant **reduction** in distortion severity when perceiving faces with eyeglasses. ( $p < 0.001$ )

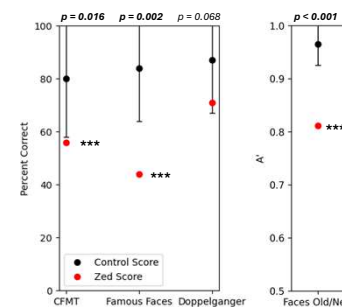
**Increase** in distortion onset time when perceiving faces with eyeglasses. ( $p = 0.059$ )



Are Zed's face recognition, perception, or detection impaired?

Scores **normally** in tests of face perception and face detection (see discussion).

Scores significantly **below** controls in tests of face recognition.



Does Zed possess abnormal white matter tracts or lesions?

Zed's left inferior fronto-occipital fasciculus is **significantly different** from controls. No lesions detected in fMRI.

