

# Associations between fiction reading, face recognition and facial expression identification

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## Introduction

- Face recognition is vital for social interaction. Prior research suggests a link between face recognition and extraversion (Li et al., 2010), a personality that results in more social life and exposure to faces.
- There is also evidence that the ability to recognise the emotional states from the eyes is associated with fiction reading (Mar et al., 2006), an activity known to engage the theory of mind (ToM). A low fiction reading habit is associated with alexithymia (Samur et al., 2017), who are also poor at recognising facial expressions (Prkachin et al., 2009).
- However, the relationship between face recognition and fiction reading remains largely unknown. The purpose of the present study was to investigate this relationship. Participants were given a face recognition test, a facial expression test, and an author recognition test.

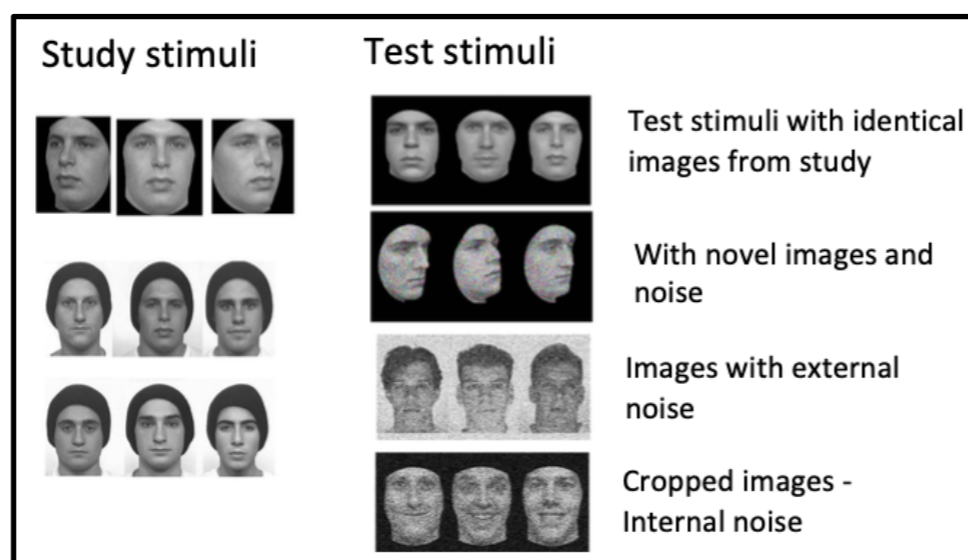
## Method

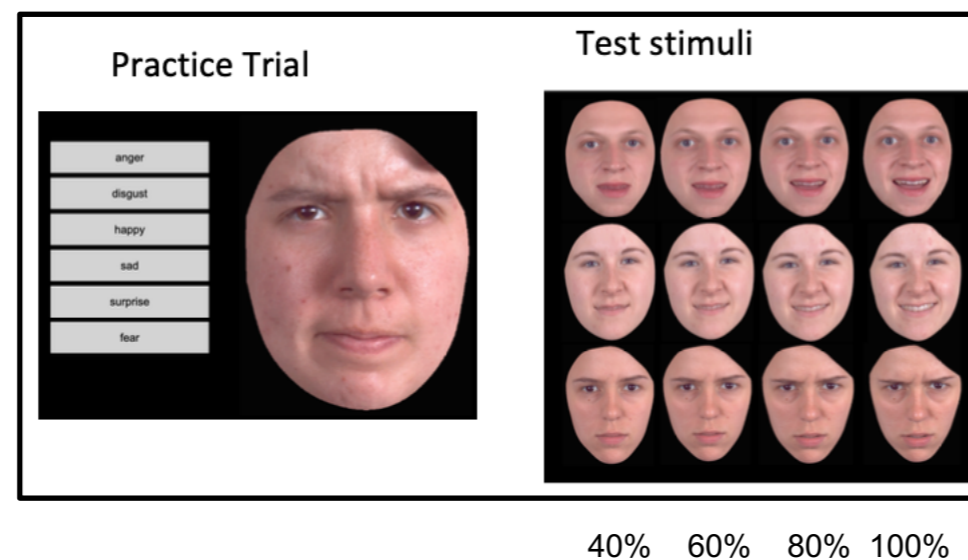
### Participants

100 psychology undergraduate students from Bournemouth University (94 females, 6 males,  $M = 19.4$ ,  $SD = 4.0$ )

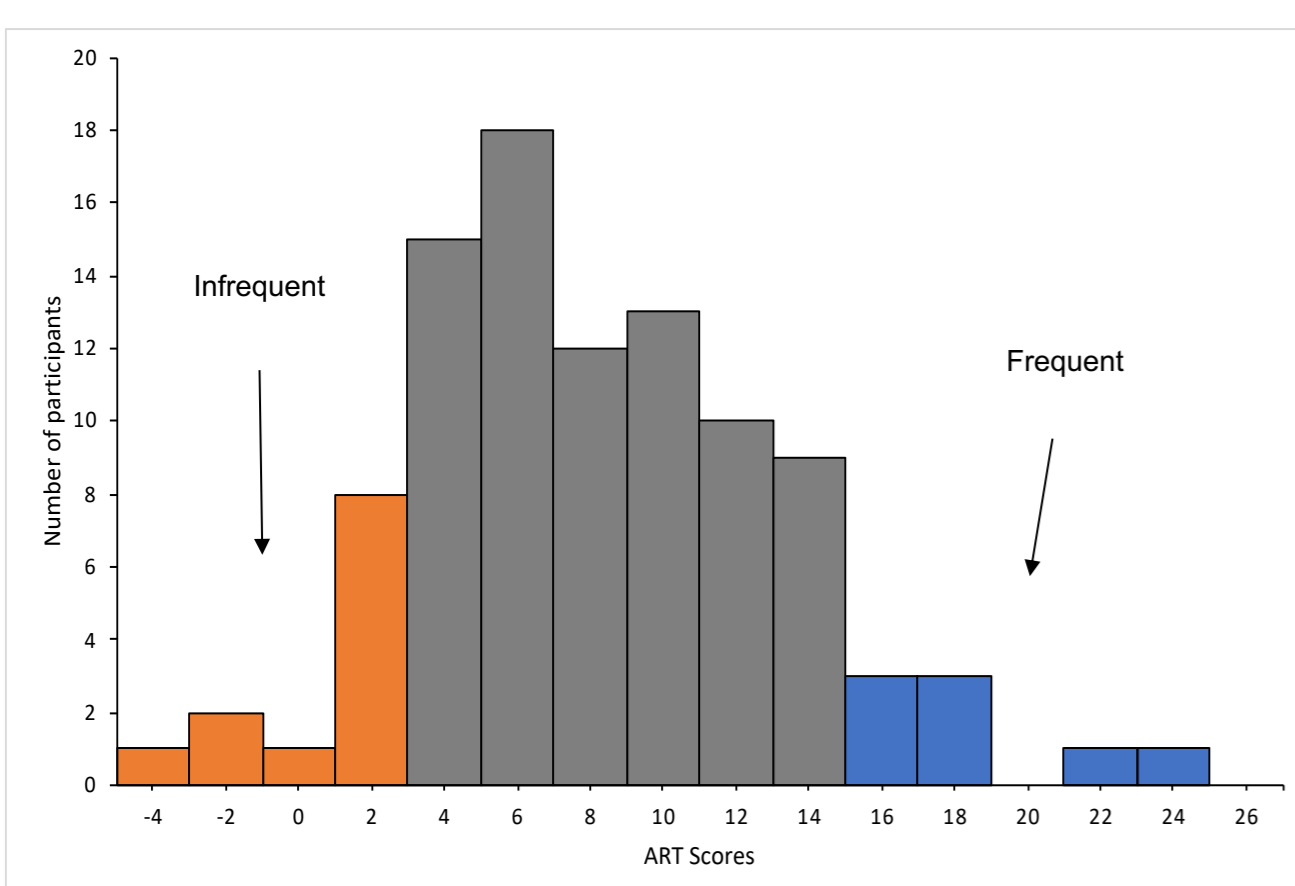
### Materials

1. *Cambridge Face Memory test (CFMT+, Russell et al., 2009)*. Participants learned 6 faces. They later recognised the faces in the same learned or novel images. Some images also had added noise hence were more difficult to identify.
 

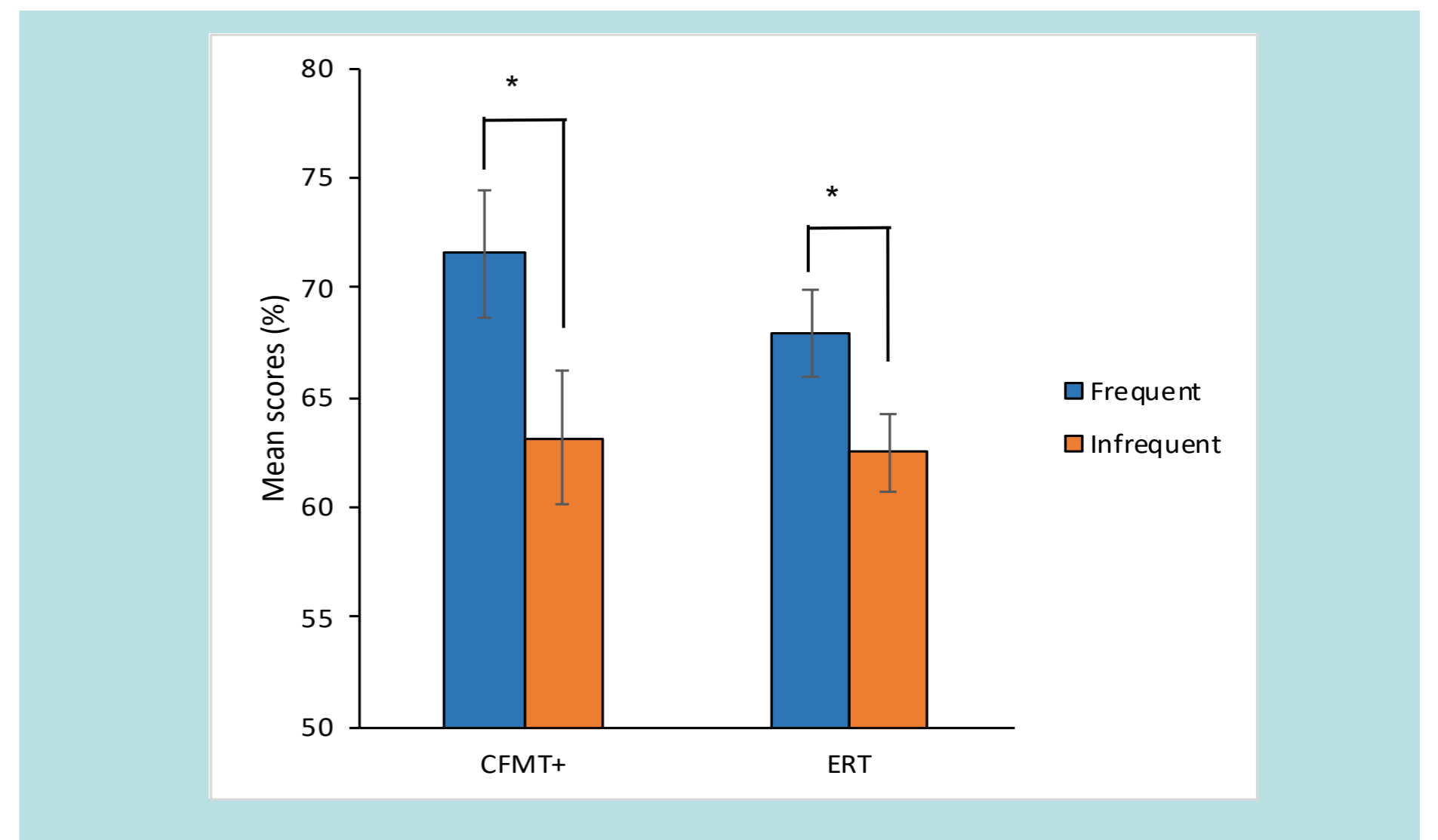

2. *Emotion Recognition Task (ERT, Kessels et al., 2014)*. Face stimuli morphed with a neutral expression to have four levels of intensity for each expression (40%, 60%, 80%, 100%). In each trial, Participants were presented the choice of six different facial expression labels.
 


3. *Author Recognition Task (ART, Gilbert et al., 2018)*. 130 author names containing 65 real authors and 65 foils were presented in a random order. Participants indicated a 'Y' next to any authors they recognised and told there was a penalty for marking a wrong choice.

## Results



Following the method in Li et al (2010), we first compared face perception performance made by participants with top and bottom ART scores, which may correspond to frequent and infrequent fiction readers. The two groups were defined by 1SD above or below the mean ART score. See results of the grouping on the left figure.



- ❖ **Face recognition.** Recognition accuracy of the frequent readers ( $M = 71.6\%$ ,  $SD = 8.2$ ) were better than the infrequent readers ( $M = 63.2$ ,  $SD = 10.6$ );  $t(18) = 1.89$ ,  $p = 0.038$ .
- ❖ **Facial expression recognition.** Scores of frequent readers ( $M = 68.0\%$ ,  $SD = 5.6$ ) were higher than the infrequent readers ( $M = 62.5\%$ ,  $SD = 6.1$ );  $t(18) = -2.03$ ,  $p = 0.028$ .
- ❖ **Correlation analysis.** However, when all participants' data are included rather than only the top and bottom groups of ART scores, no significant correlation was found between ART and CFMT+ or ERT scores, although ERT and CFMT+ scores were positively correlated.

## Discussion

- This study demonstrated that knowledge of fiction writers may be positively associated with the ability to recognise faces and facial expression.
- This could be explained by social motivation factor from better social skills as previous studies found individuals with better face recognition were associated with better social abilities (e.g Li et al., 2010). It is consistent with the finding that fiction readers have better social abilities such as socio-cognitive abilities with ToM (Dodell-Ferrer & Tamir, 2017).
- Future work is needed to replicate the study a larger sample size.

### References:

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