

# Individual Differences in Face Matching

Kathy Charles<sup>1</sup>, Allan McNeill<sup>1</sup>, Mike Burton<sup>2</sup>, David White<sup>2</sup>

<sup>1</sup>Glasgow Caledonian University <sup>2</sup>University of Glasgow

## Introduction

There are many forensic situations in which an individual may be required to match two or more images of an unfamiliar person (e.g. witnesses identifying a suspect, police identifying a known offender, or customs officers checking the authenticity of travel documents). Research in face processing has shown that some people find this task difficult even when the images are of good quality and when no memory component is required. This is in direct contrast to matching images of familiar faces. Individual variation in unfamiliar face matching ability is large but little is known about what drives this variation. Megreya and Burton (2006) suggest that the mechanism involved in matching unfamiliar faces is different to that involved in familiar face matching and argue that unfamiliar faces are not processed as faces. The current study explores unfamiliar face matching in greater detail and includes a police sample for comparison.

## Method

**Participants:** Police: 75 (48 male, mean age 35.4, SD=9.6). Undergraduates 53 (13 male, mean age 21.47, SD=7.2).

**Measures:** Forty unfamiliar face matching trials (20 target face absent, 20 target face present) as used in Bruce et. al (1999). A further 40 trials in an inverted configuration (see below). The Matching Familiar Figures Task (MFFT; Kagan, 1965) and a CCTV exercise where participants had to match video footage with a still photograph.

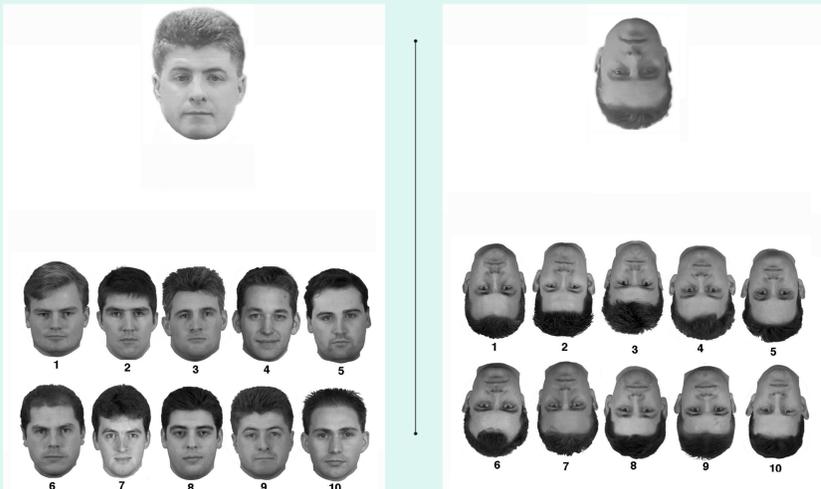
## Results

Analyses revealed no significant differences between police officers and students on upright and inverted unfamiliar face matching or on the CCTV exercise. Police officers were significantly better than students on the MFFT.

	Mean Scores	
	Police	Students
Upright Faces	34.6	33.4
Invert. Faces	23.2	22.6
MFFT	37.8*	35.6*
CCTV	19.2	18.9

\*  $P < 0.01$

The previously observed significant correlation between MFFT and upright face matching was not found



**Procedure:** The first three tasks were presented on paper and the CCTV task was presented on a PC laptop using PowerPoint. The experiment was completed in one session.

**Analyses:** Groups were compared using Pearson's correlation and t-tests.

in the individual samples, but was observed when the participants were grouped together ( $r=0.2$ ,  $p < 0.05$ ,  $N = 128$ ).

## Discussion

Better performance on the MFFT suggests that the police sample employed a more reflexive cognitive style than the student sample. The slightly more impulsive cognitive style of students was not significantly detrimental to their matching accuracy in this study. The results also suggest that students' performance is not adversely affected by their lack of training in facial recognition. Current research in this area aims to develop a more detailed understanding of what drives facial matching ability and to produce strategies to improve matching.

## References

- Bruce, V. et. al (1999). Verification of face identities from images captured on video. *Journal of Experimental Psychology: Applied*, 5, 119-141.
- Kagan, J. (1965). Reflection-impulsivity and reading ability in primary grade children. *Child Development*, 36, 609-628.
- Megreya, A. and Burton, A. M. (2006). Unfamiliar faces are not faces: evidence from a matching task. *Memory & Cognition*, 34, 865-876.

## Acknowledgements

This research was funded by the ESRC (RES-000-23-1548)

