# The suitability of EvoFIT for mild learning disabled witnesses

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## Introduction

A detailed verbal description of the perpetrator's face can be regarded as a prerequisite of facial composite construction with featural composite systems, such as E-FIT (Frowd, Bruce & Hancock, 2008). This might be especially problematic for witnesses or victims with limited verbal abilities, such as individuals with a learning disability (LD). Previous research has found that individuals with mild learning disabilities (mLD) created significantly less accurate facial composites with E-FIT than their non-LD peers (Gawrylowicz, Gabbert & Carson, under review). Holistic facial composite systems, such as EvoFIT do not require witnesses to provide a verbal facial description but rely more on face recognition (Frowd et al., 2004). As such they appear to be particularly suitable for witnesses with LD. This hypothesis was explored in the current research.

## Phase I: Morph task

A 'morph task' was developed to assess whether individuals with mLD were able to successfully differentiate between two similar looking faces when choosing the best match to a target face (see example below). This ability is of fundamental importance to composite construction using the EvoFIT system.

### Method

- Participants: 20 individuals with mLD (19 - 66 years; *M* = 44.25 yrs; WASI: FSIQ-4 score: *M* = 59.70, *SD* = 4.74) & 20 controls (20 - 61 years; *M* = 41.80 yrs)
- Design: 2 (group: mLD vs. control) x 2 (task: easy vs. difficult) mixed design

**Easy Morph Task** **Difficult Morph Task**

### Procedure

- Participants were asked to compare the two original faces with the morph and to decide which one of the originals looked more similar to the morph.
- Easy task: morph in the top shares 70% characteristics of the face in the bottom left and 30% characteristics of the face in the bottom right.
- Difficult task: morph in the top shares 60% characteristics of the face in the bottom left and 40% characteristics of the face in the bottom right.

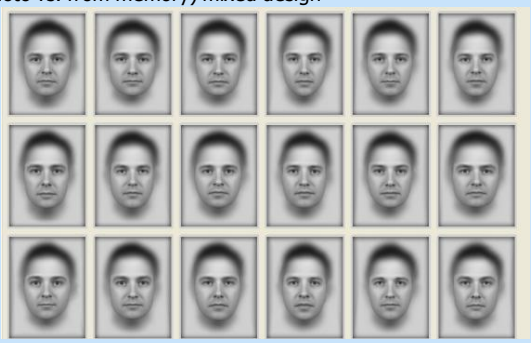
### Results

- Both groups performed significantly poorer during the difficult than the easy task
- mLD participants performed significantly poorer on both tasks than members of the control group (easy task: *M* = 8.30, *SD* = 1.56; *M* = 9.70, *SD* = 0.47; difficult task: *M* = 7.15, *SD* = 1.78; *M* = 8.60, *SD* = 1.19 out of 10).
- However, as a group, mLD individuals performed significantly better than chance.

## Phase II: Composite Construction

### Method

- Participants: 30 mLD individuals (18-55 yrs; *M* = 37 yrs; WASI: FSIQ-4 score: *M* = 58.10, *SD* = 6.24) & 30 controls (19 – 38 yrs; *M* = 24 yrs) created facial composites with EvoFIT.
- Design: 2 (group: mLD vs. controls) x 2 (description mode: from photo vs. from memory) mixed design



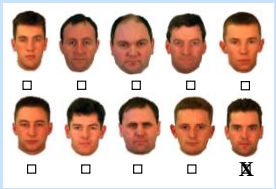
## Phase III: Composite Evaluation

### Method

- Participants: 46 independent participants (21 – 61 yrs; *M* = 39 yrs)
- Design: 2 (group: mLD composites vs. control composites) x 2 (description mode: photo vs. memory) mixed design

### Procedure

- Participants saw all composites accompanied with line-ups, consisting of the target face and 9 distracter faces.
- Participants were asked to indicate which of the faces in the line-up matches the E-FIT most.



### Results

- Significantly more correct matches were made when composites were created from photo than from memory
- Participants made significantly more correct matches when the composites were created by members of the control group (*M* = 6.89, *SD* = 2.02), than when they were created by participants with mLD (*M* = 4.1957, *SD* = 1.81).

## Discussion and conclusions

- The morphing task demonstrated that individuals with mLD have more difficulties distinguishing more and less similar looking faces than individuals without LD. However, as a group, they performed significantly better than would have been expected by chance. On the basis of this finding it seemed reasonable to investigate the suitability of the EvoFIT system with mLD individuals.
- EvoFIT composites constructed by participants with mLD were significantly poorer than those constructed by participants without LD. Nevertheless, some of the composites were good enough to act as reference for accurate target identification.
- Most importantly, people identified considerably more target faces on the basis of EvoFIT composites than they did on the basis of E-FIT composites (Gawrylowicz et al., under review). Thus, it seems as if EvoFIT can be regarded as the more suitable system for witnesses with mLD, compared to more featural systems, such as E-FIT.

## References

Frowd, C. D., Bruce, V., & Hancock, P. J. B. (2008). Helping the police to construct the face of a criminal. *The Psychologist, 21*(8), 670-682.
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