

Collaborative decision making and experience in forensic facial comparison

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Introduction

Comparing unfamiliar faces is an error-prone task. In forensic contexts expert facial examiners provide opinion-based evidence on facial comparison decisions. Research has shown that, on average, facial examiners are more accurate at facial comparison than lay persons, but there are large individual differences between examiners (Phillips et al., 2018). When working in teams of multiple examiners, performance is improved (Towler et al., 2021), however the mechanism underpinning this improvement is not understood.

Aim

The aim of the current study was to evaluate the performance of forensic facial examiners working in collaborative and non-collaborative pairs on challenging facial comparison tasks, and provide recommendations for team working practices in forensic facial comparison.

Method

The experiment consisted of two difficult face matching tasks from the Façade image set, each containing 10 trials (5 matching face pairs and 5 non-matching face pairs). Trials included intentional disguise for both impersonation and evasion.

12 forensic facial examiners and 79 controls took part. Controls completed the tasks online using Qualtrics. Examiners used their standard tools and operating procedures.

Responses were made using a 7-point Likert scale ranging from 'Strong support for different people (-3)' to 'Strong support for same person (+3)' with a 'No support (0)' option.

In Task A examiners completed the trials individually. Non-collaborative pairs were created as either the average response of two examiners or the most conservative response (closest to 0).

In Task B non-collaborative average pairs were created and examiners also worked together to give a single collaborative response.

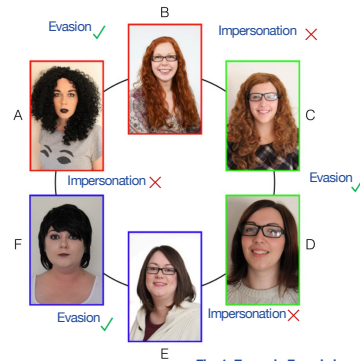


Fig. 1: Example Façade images

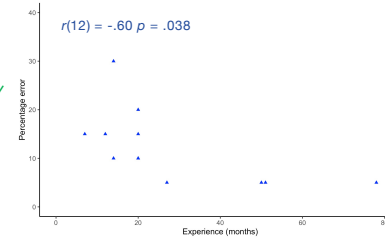


Fig. 2: Examiner experience

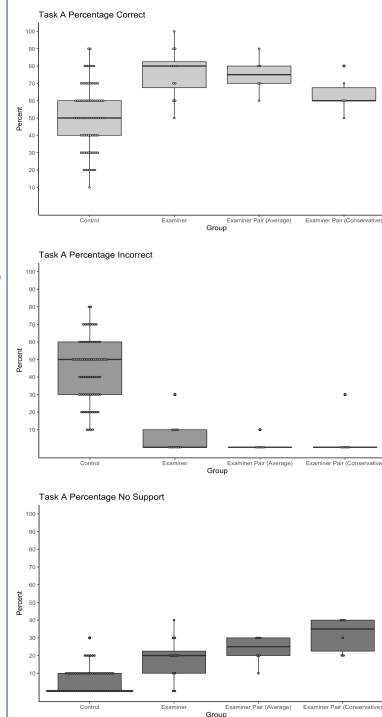


Fig. 3: Task A results

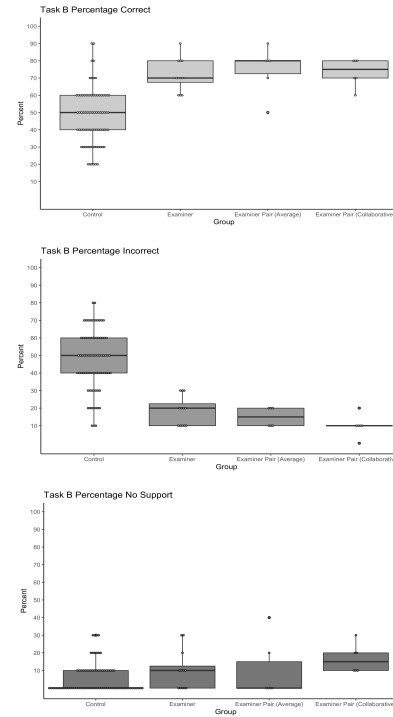


Fig. 4: Task B results

Results

Individual examiners were significantly more accurate than controls and made significantly fewer errors as a group (all $p < .000$).

In Task A both types of non-collaborative pairs made fewer errors than individual examiners, with the exception of one pair in the conservative condition. Conservative pairs resulted in a larger decrease in correct responses than average pairs and a markedly higher number of no support decisions. For Task B, collaborative and non-collaborative averaged pairs achieved similar numbers of correct responses, with less variance in the collaborative condition. Collaborative pairs made the least amount of errors.

Discussion

Facial examiners outperformed controls and were less likely to be misled by intentional disguise, but individual examiners, with different levels of experience, varied in correct responses and numbers of errors. In all conditions of non-collaborative and collaborative working examiner pairs made fewer errors, with collaborative pairs making the least amount of errors overall on the most challenging task (Task B), without major reductions in the number of correct responses.

Results indicated that working collaboratively on facial comparison decisions provided the most effective trade-off for reducing errors and maintaining accuracy.

Analysis also showed more experienced examiners made fewer errors and that collaborative decision making was most beneficial for less-experienced examiners. This highlights a possible training benefit for facial examiners from collaborative working, replicating previous research for lay participants (Ritchie et al., *in press*).

References

- Phillips, P. J., et al. 2018. Face recognition accuracy of forensic face examiners, superrecognizers, and face recognition algorithms, *Proceedings of the National Academy of Sciences*, 201721355
- Ritchie, K. L., et al. *in press*. The pairs training effect in unfamiliar face matching, *Perception*
- Towler, A., et al. 2021. Diverse routes to expertise in facial recognition. <https://doi.org/10.31234/osf.io/fmzjh>