The Impact of Exposure Duration and Target Prevalence on the Confidence-Accuracy Relationship in Unfamiliar Face Matching

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This thesis is submitted in partial fulfilment of the Honours degree of Bachelor of Psychological Science

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October 2016

Word Count: 11,912

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Abstract

Unfamiliar face matching is the process of determining whether different faces of individuals belong to the same or different person, and is crucial in a number of contexts including criminal identification, age identification and border security. A wealth of research however, suggests that it is highly error prone. Unfamiliar face matching is found to be reliant on different processes compared to familiar face matching, which contrastingly is performed quite well. As a result, it is important to enhance understanding of the underlying processes involved in order to determine valuable estimates of performance, and explore key factors which influence these. In line with previous research, this study aims to examine the effects of exposure duration and target prevalence which are vital factors in applied face matching settings. Eighty participants completed a one-to-one face matching task manipulating these variables. Results are analysed and discussed in terms of general face matching performance, as well as a confidence-accuracy calibration approach which is applied to overall, match and mismatch decisions. Exploratory signal detection analysis is also conducted to examine the effects further. The results suggest that neither exposure duration nor target prevalence have an impact on the confidence-accuracy relationship. However, a strong positive-negative asymmetry is observed for decision type, suggesting that confidence would not be a reliable indicator of accuracy for mismatch trials. Further research is recommended in regards to both manipulations, with the suggestion that a higher number of mismatch trials should be used. The implications of these findings are discussed.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University, and, to the best of my knowledge, this thesis contains no material previously published except where due reference is made. I give consent to this copy of my thesis, when deposited in the University Library, being available for loan and photocopying.

Sandra Agnieszka Putek

October 2016

Acknowledgements

I would like to thank my supervisor, Dr Carolyn Semmler, for her guidance. I was encouraged by your knowledge and dedication to the field of face matching, and have learnt a great deal over the course of the year.

I would also like to thank my friends and family who were consistently there for me throughout this journey. In particular I would like to thank my Mum, Jola, whose hard work inspires me to do my best, and Nicholas, whose joyful nature keeps me sane through the difficult times. I tremendously appreciate your support.

A special thank you goes to every participant who took the time to be part of this experiment, without you it would not be possible to investigate such fascinating areas of psychology.

Finally, I am grateful to the universe for this wonderful opportunity to learn.