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Disentangling the study of person cue processing from face and body processing

Justin M. Gaetano
Southern Cross University

Anna Brooks
Southern Cross University

Rick van der Zwan
Southern Cross University

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Disentangling the Study of Person Cue Processing from Face and Body Processing

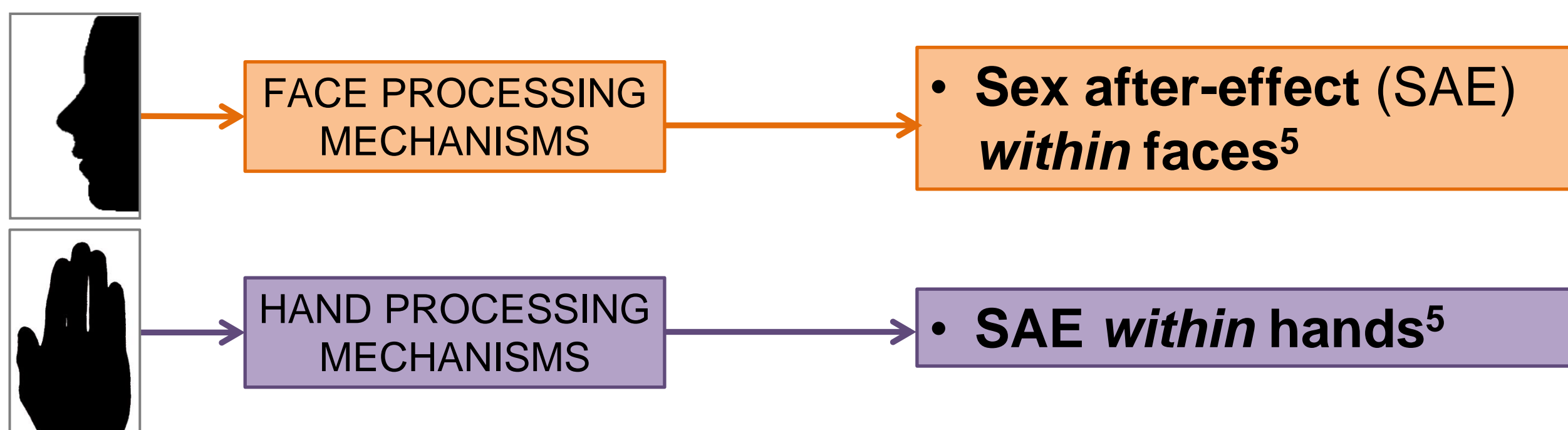
Justin Gaetano, Anna Brooks, and Rick van der Zwan

Cognitive Neuroscience Research Cluster, School of Health and Human Sciences, Southern Cross University, Coffs Harbour, Australia

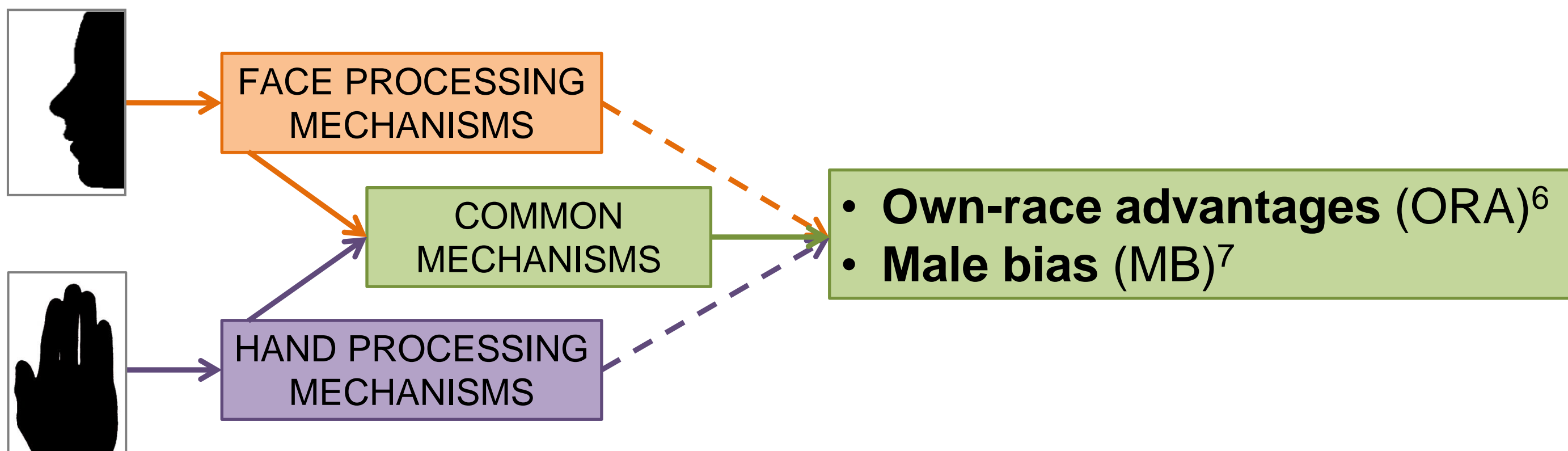
I. Observations and Hypotheses

- Judgements about unknown others (e.g. whether they are female/male) are theoretically informed on the basis of sensory input and higher order factors such as familiarity¹.
- Faces and hands are each associated with specialised neural populations^{2,3}.
- Questions about how sex is cortically processed tend to be couched solely in terms of a particular stimulus set (e.g. face perception⁴).
- Is there a common sex-processing pathway?

MODEL A

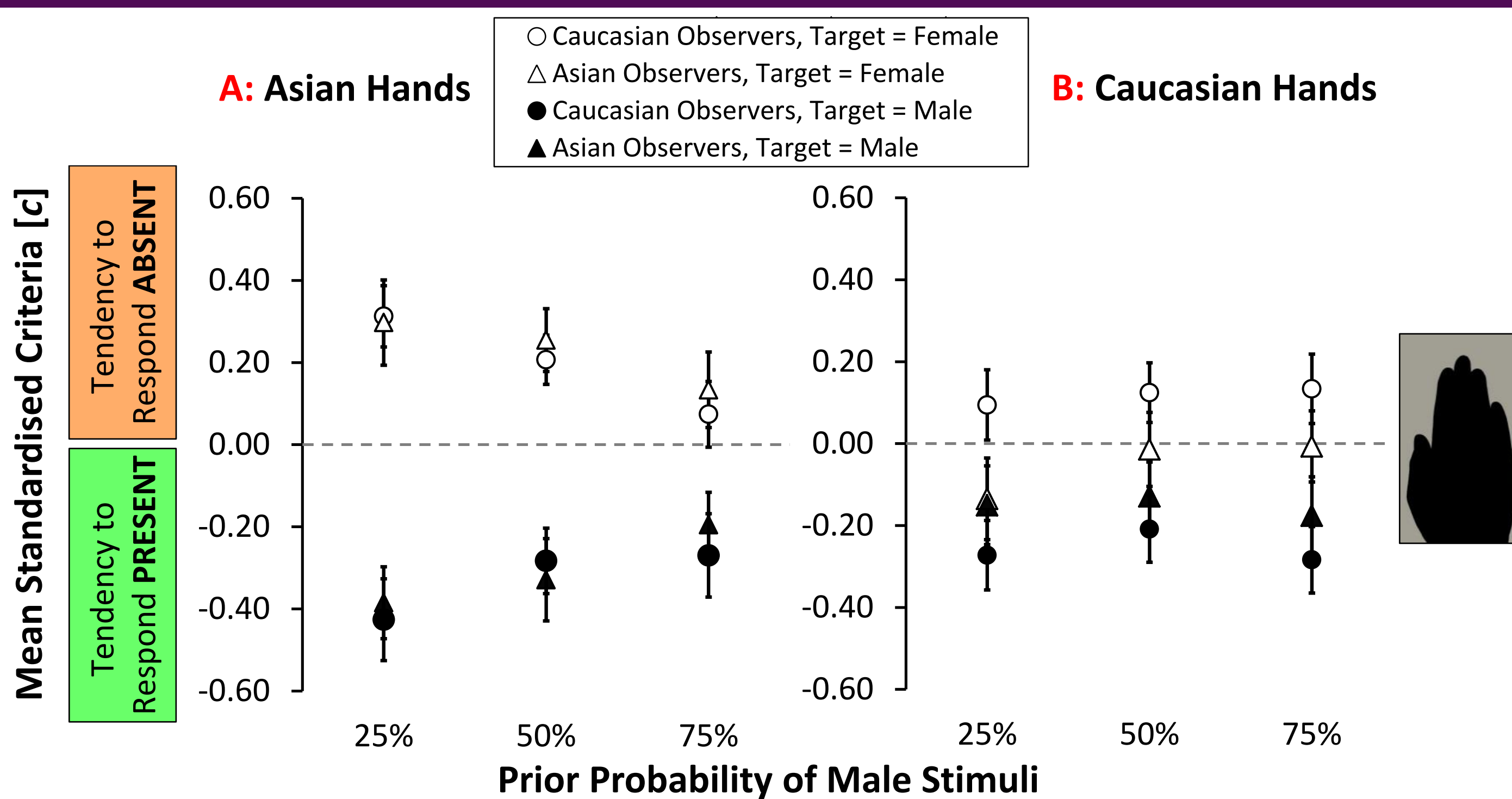


MODEL B



- If there are common sex processing mechanisms, we can expect similar outcomes to arise from tests of face- and hand-based sex discrimination. Specifically we predicted that:
 - Caucasian and Asian observers will be more sensitive discriminating sex from own-race hands;
 - Both races will adopt male-biased response criteria when hand- and face-based sex cues are degraded.
- 2AFC, Y/N tasks: "Is it male?" (Male Target), "Is it female?" (Female Target).

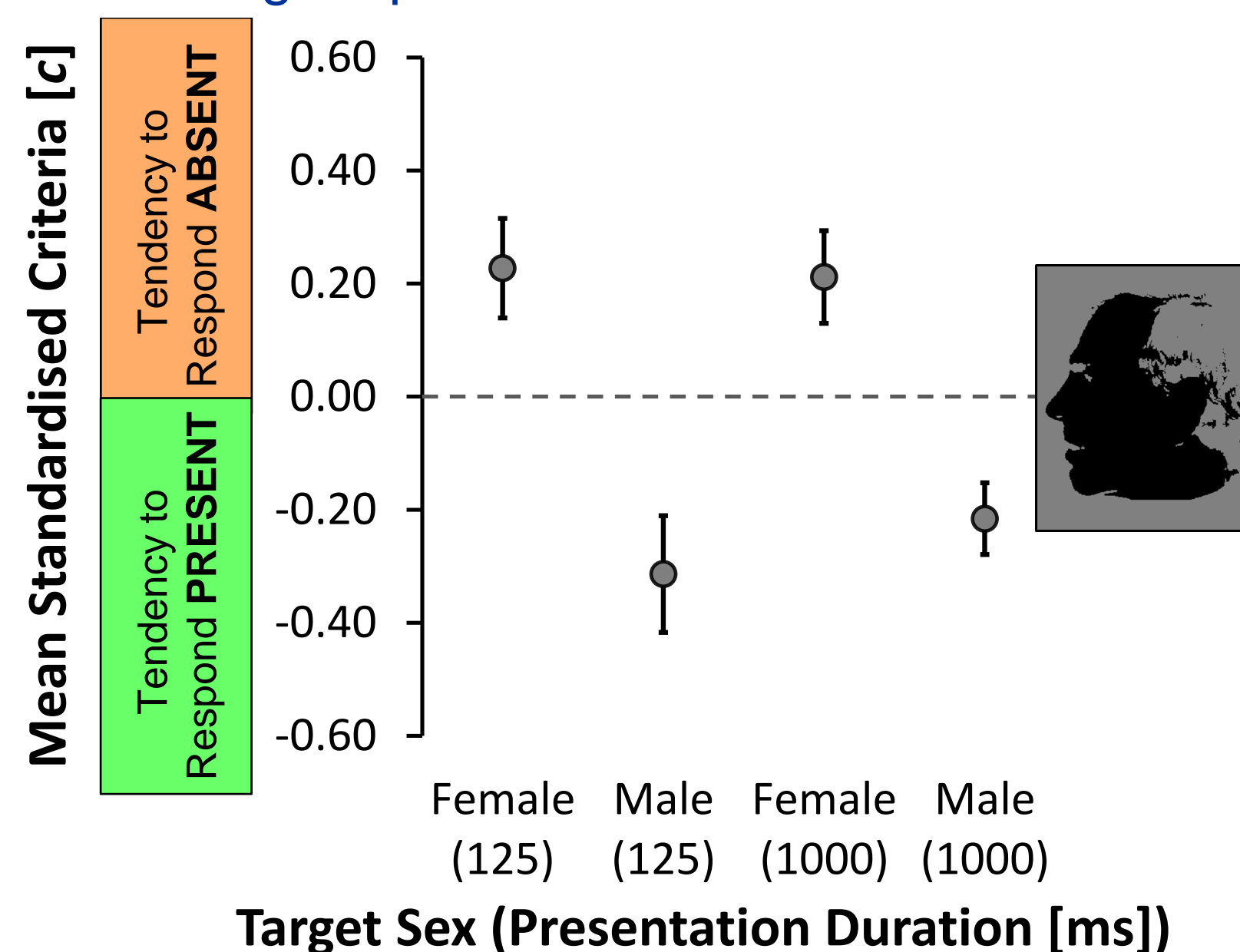
II. Bias Effects



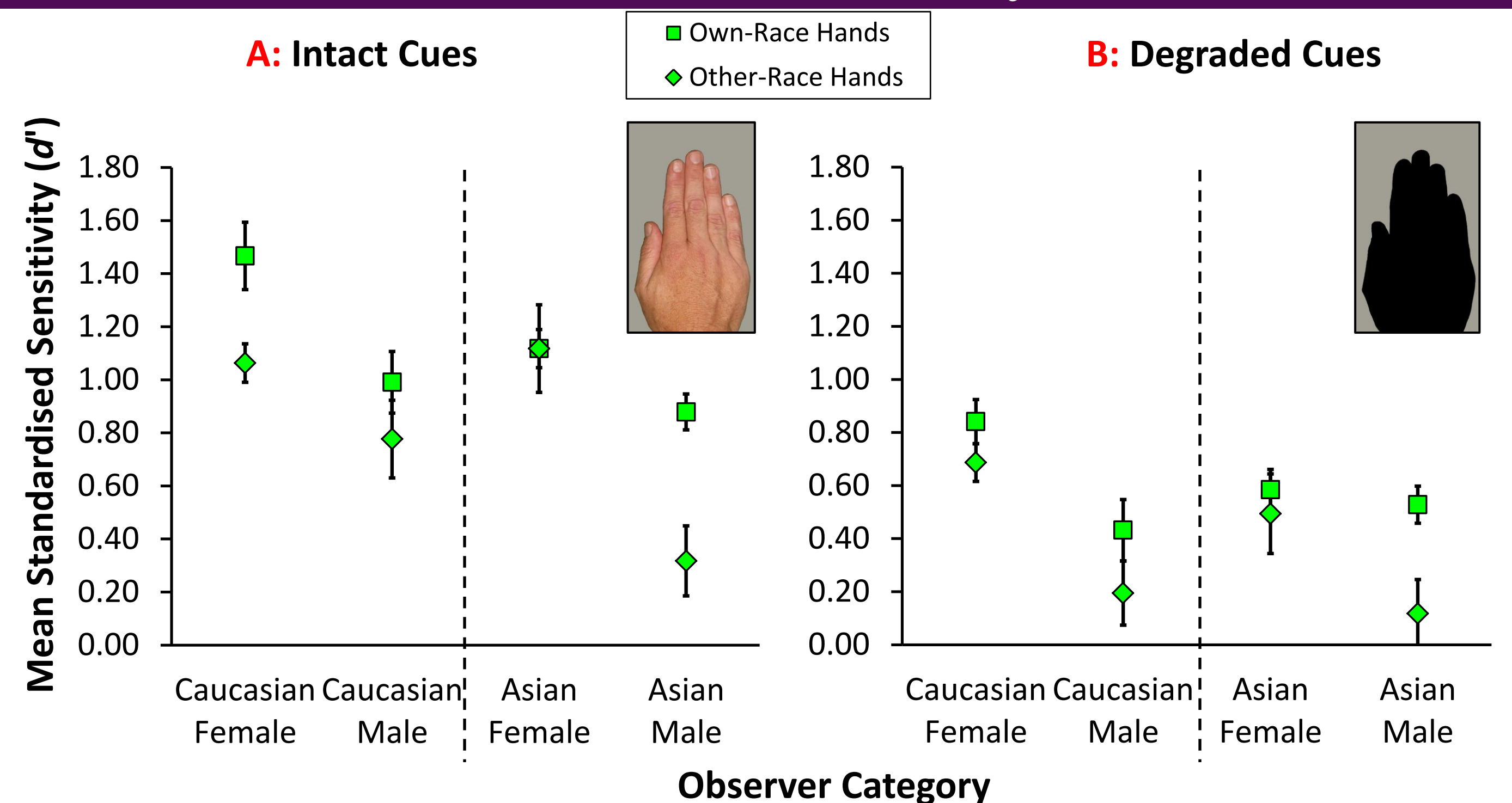
- A: Caucasian and Asian observers of Asian hands showed symmetrical criteria shifts consistent with MB, which diminished as male targets became common.
- B: Caucasian own-race observers showed target-specific MB.

Right:

- A follow-up, within-group experiment using silhouette face profiles showed that the dual-criterion MB is not specific to hands.
- In contrast to a previous hand-based study⁷, presentation duration did not mediate the effect.



III. Hand-Based Sensitivity Effects



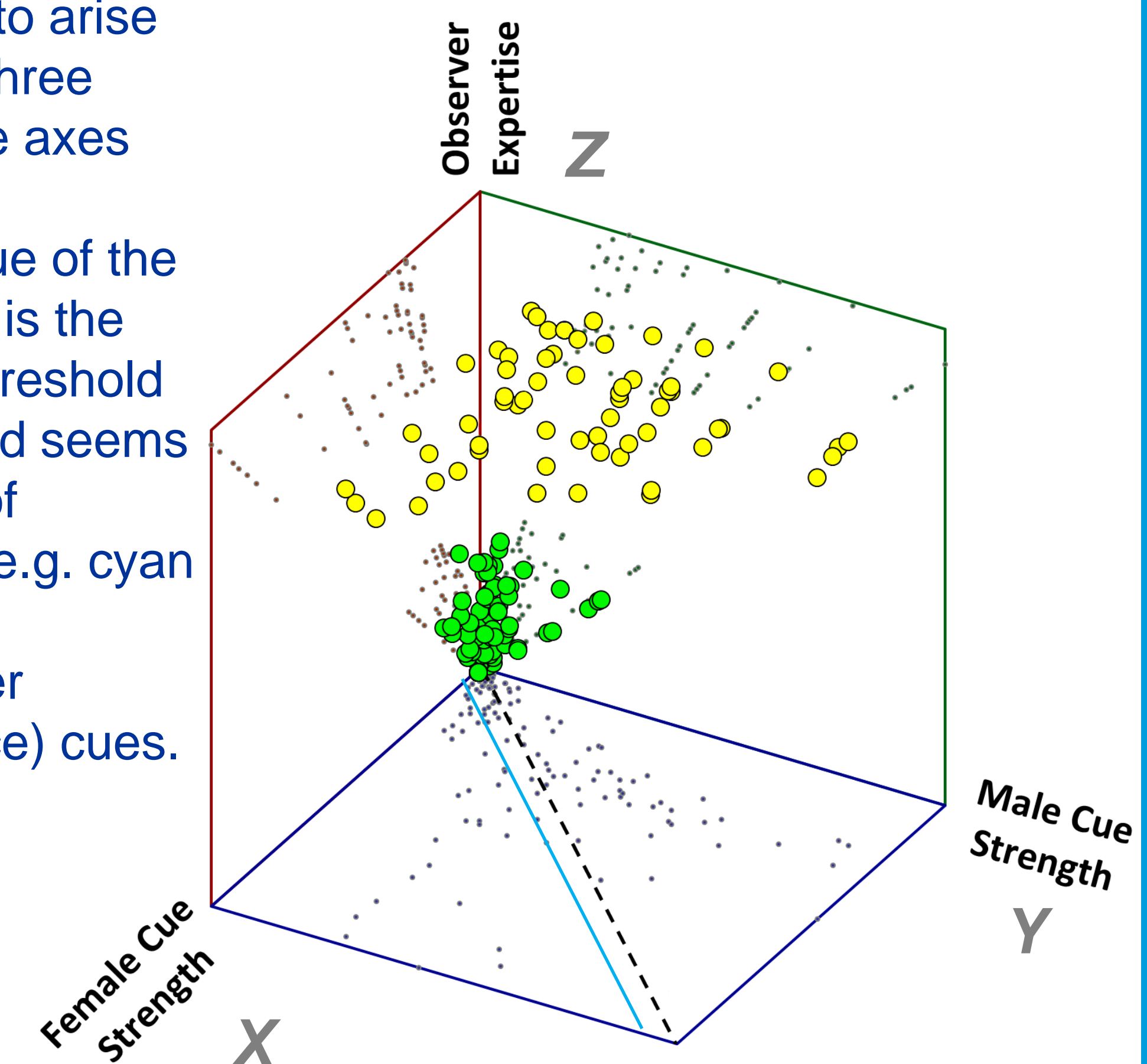
Strong evidence for ORA was found (A & B). Interestingly, female observers had higher sensitivity rates than did male observers, particularly if they were Caucasian. These effects apply for hand cues shown each at 1000ms. Neither ORA, Caucasian advantage, nor female advantage arose if cues were shown for 125ms.

IV. Summary and Future Predictions

- MB is a pan-stimulus, pan-cultural phenomenon, subserved via a dual-criterion shift.
- ORA is not specific to faces, but extends to another socially important body part.
- If a common sex processing mechanism does exist, then SAE should occur across (as well as within⁵) categories of faces and hands.

Observed behavioural convergence suggests the mechanisms processing sex cues might operate in such a way as to give rise to a n-dimensional, sex perception-space, akin to the space already proposed for face perception⁸:

- Sex perceptions seem to arise from a combination of three objective states (i.e. the axes as labelled).
- In this space, the oblique of the XY plane (dashed line) is the objective sex-neutral threshold.
- The subjective threshold seems to be biased in favour of objectively male cues (e.g. cyan line).
- Yellow bubbles: Higher familiarity (e.g. own-race) cues.
- Green bubbles: Lower familiarity (e.g. other-race) cues.



V. References and Acknowledgement

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