# The reliability of Other-Ethnicity Effect is lower than individual performances on face recognition tests.

**Michael Jeanne Childs***, Dr Alex Jones, Professor Jeremy Tree
Swansea University

**BACKGROUND:** Generally, individuals are better at recognising faces from their own-ethnicity compared to those from other-ethnicities. This is known as the ***other-ethnicity effect*** (OEE) and is calculated as the difference between one's performance on own-ethnicity and other-ethnicity facial recognition tests. Individual face recognition tests have been shown to have high internal reliabilities, but the reliability of the OEE, has not yet been explored.

**METHODS AND MATERIALS:** 824 participants (Whites = 400, Asians = 424) completed three versions of the Cambridge Face Memory Test (CFMT; Duchaine & Nakayama, 2006): Boston, Australia (McKone et al., 2011), and Asia (McKone et al., 2012). The difference between Australia and Asia CFMTs were used for this analysis.

**TEST PROCEDURES:** CFMT has six target individuals and recognition is tested using a forced choice paradigm in three phases:

1. ***Learn*** (18 items) – target faces were shown in left, right, and front views, along with two distractor faces;
2. ***Novel*** (30 items) – faces were presented in different angles and lighting;
3. **Noise** (24 items) – Gaussian noise was added to the images for increased difficulty.

**RESULTS:** Individual CFMT internal reliabilities ranged between $a$ = .82 - .87 for Australia and Asia versions. To determine the reliability of OEE, we followed the process described in Fig. 1. We then calculated the mean split-half coefficients for the whole sample, a = .64, Whites = .65, and Asians a = .63. See Fig. 2 for the distributions.

**DISCUSSION AND IMPLICATIONS:** Our data shows that although the individual face recognition measures have high internal reliability, the difference between them (OEE) was lower, although still within acceptable values. It is therefore vital that studies investigating OEE in the future use measures with high internal reliabilities, and to report the reliability scores of their observed OEE.

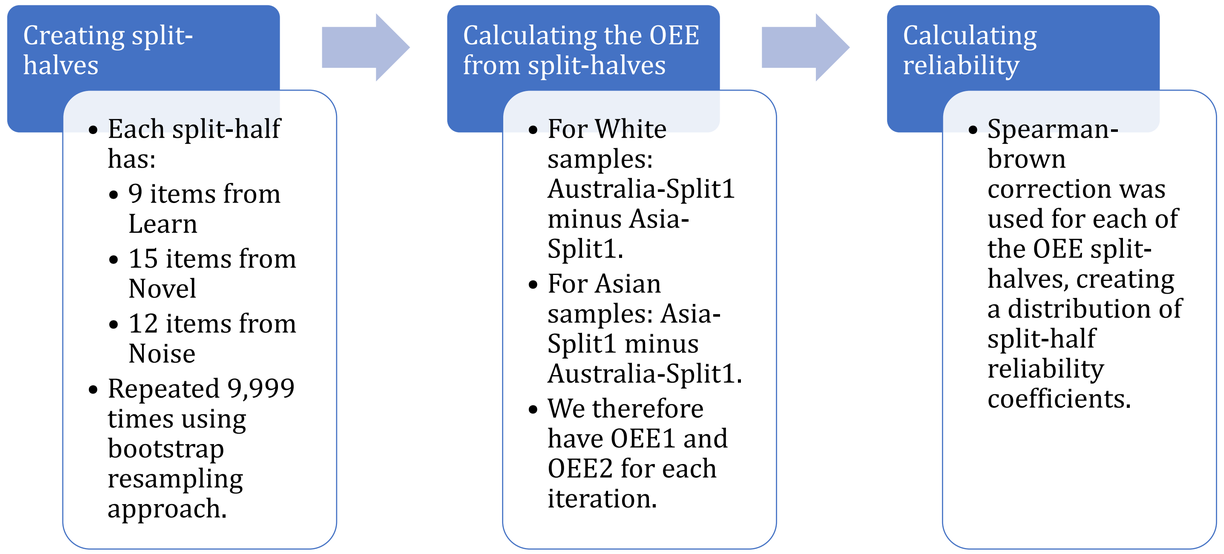


Fig.1. Steps followed to calculate the reliability of OEE. We thank our article reviewers for their suggestions on how to calculate the reliability of OEE.

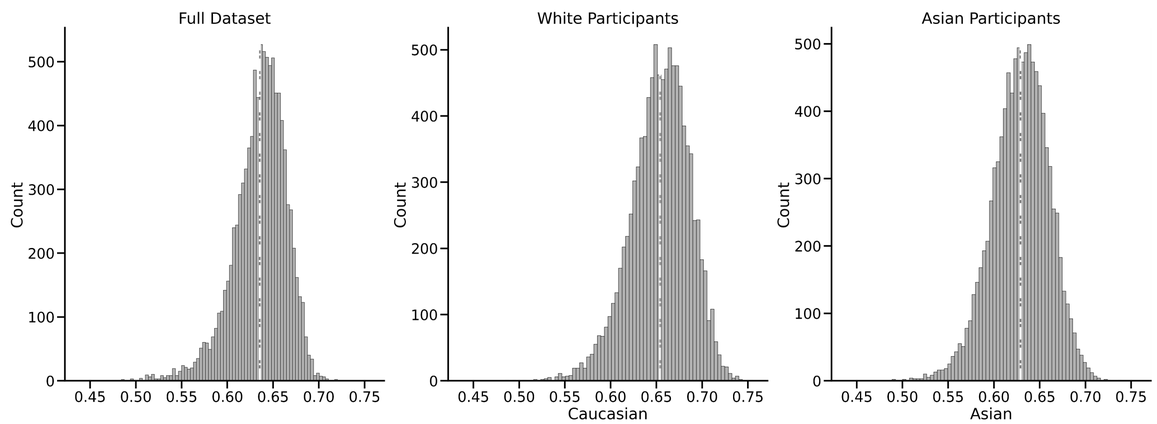


Fig. 2. Distributions of the OEE split-half coefficients for the full sample, only White participants, and only Asian participants.

Disclaimer: This data is part of our analysis for an article which is currently in preparation for publishing with the JEP:HPP. For transparency, our full analysis and other supplementary data can be found in https://osf.io/bwhtg/