Appendix B: Unique Composites

100 unique composites were generated using the following methodology:

Facial features were sampled from the internet and two face image databases: The Glasgow Unfamiliar Face Database (Burton et al., 2010) and the Face lab face database. These two databases were available to use for research purposes and contained frontal face images of individuals with lighting from above and plain/neutral backgrounds. Additionally, face images were sourced from the internet. Faces to sample from were chosen based on image quality, relatively even lighting, no obvious piercings or facial modifications, no obvious marks that could not be edited out, no heavy facial hair, no eye-glasses, with a neutral expression, frontal view and in focus. This was to ensure that no non-face related artefacts could be used to facilitate the identification of the stimuli. All images were manipulated and presented in grey-scale.

The six features sampled (Eyes, Eyebrows, Nose, Mouth, Hair and Facial Outline) were chosen from donor images who displayed similar facial contrast and luminance to each other so that the resulting unique composite face appeared natural. For example, sampling very light hair and compositing it with very dark eyes and eyebrows may look unnatural. Adobe Photoshop CC 2014 was utilised to select features from the face images collected and composite them to form a new unknown unique composite face, see Figure 1 and Figure 2.
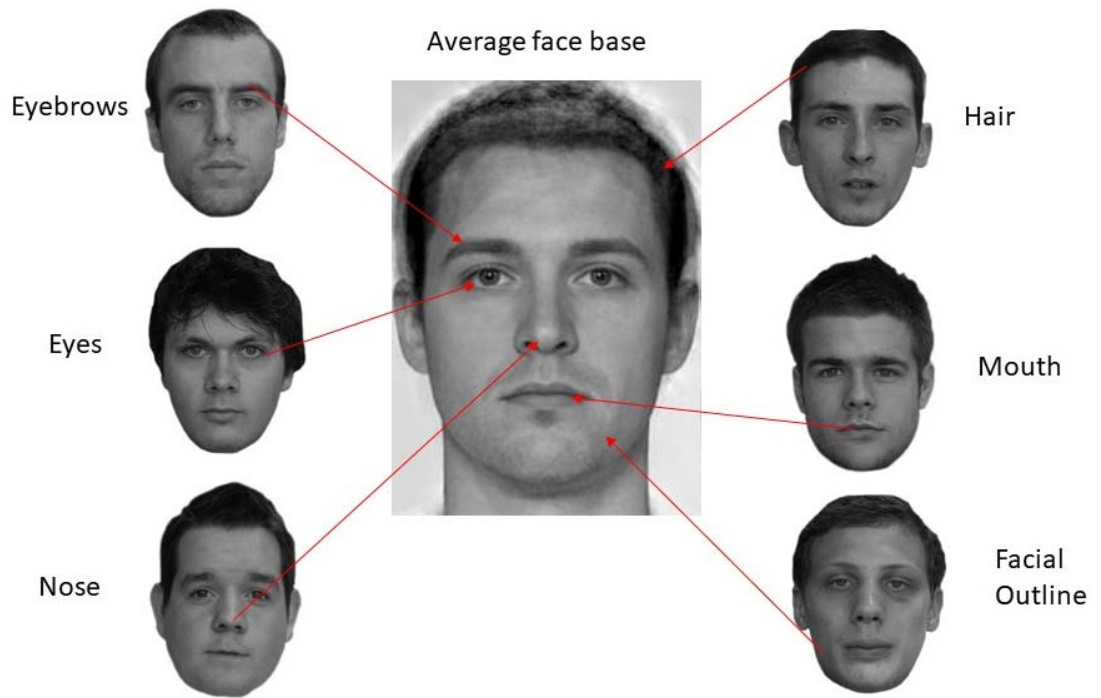
Figure 1: Making the Unique Composite faces
An average face base is used (center), onto which features from six donor faces are
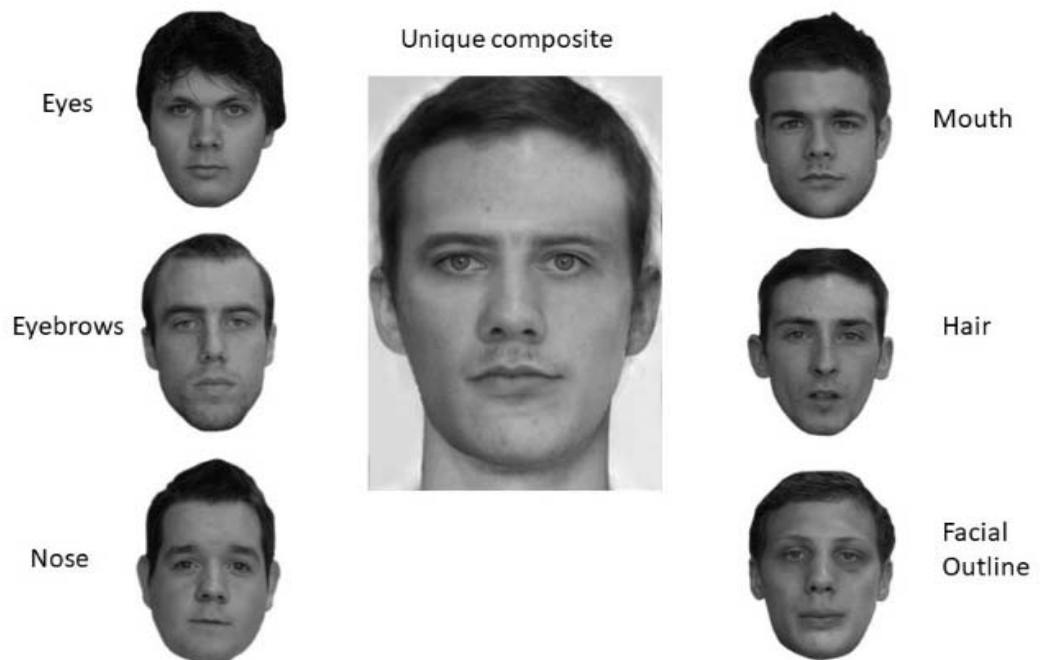
composited

Figure 2: Making the Unique composite faces
The finished blended unique composite face (center) surrounded by its six facial feature donors

Initially, the features were composited onto an average face configuration (average face generated using the online average face tool at www.faceresearch.org). For Phase 1i of the experiment, features from the unique composite were blended onto the celebrity/lecturer target face images maintaining the configuration of the target faces, therefore the configuration of the unique composite was irrelevant. For Phase 2, initially, the unique composite face was to be gradually replaced with the target features, therefore the unique composite face needed an average configuration to try and eliminate configural changes across all stimuli. However, during the process of compositing a change was made to the method of creating stimuli for Phase 2 so that the images were generated by gradually replacing the target face, working backwards, with the unique composite features, therefore maintaining the configuration of the target face. This resulted in the 6th and final condition containing all of the unique composite features, but with the configuration of the target face remaining. Therefore, all unique composite configurations, although generated using an average configuration, were never seen as part of the experimental stimuli.

Similarly to the Target image stimuli, face portions were selected, using the select tool, and pasted onto a neutral grey background so as not to interfere with perception of the face information, at a total image size of 539(W) x 640(H) pixels and a resolution of 144 pixels per inch.

References

BURTON, A. M., WHITE, D. & MCNEILL, A. 2010. The Glasgow Face Matching Test. *Behavior research methods,* 42**,** 286-291.