Supplementary Methods for Jucker et al: Cultural predictors of facial ethnicity preference.

1. **Creation of stimuli**

As explained in the main paper, stimuli were created in Psychomorph based on the real differences in average face shape and colour in groups of individuals from Jamaica, El Salvador, and the UK.

Average shape and colour is calculated through a process of positioning landmarks on real faces, and averaging the x,y coordinates of each face, and then once original faces are warped into the average shape, by averaging the colour at each pixel.

Although we do not have permission to share our original images, this example by Lisa DeBruine shows how six images can be averaged together using Webmorph which follows the same process as Psychomorph. (see her full guide to this process here: https://debruine.github.io/webmorphR/articles/webmorphR.html)

Figure S1. Example of an average composite image. (image used with permission: *DeBruine, no date, WebmorphR: Getting started*)

Below we demonstrate how the average 'exemplar' faces are used to create the transformed images. We demonstrate using the female Jamaican and Salvadoran faces. The three female composites (including the British composite) are shown here:

Figure S2. Average composite images used in this study for the female stimuli

The Jamaican-Salvadoran transforms were then performed as below, with the same process run for Jamaican-British transforms, and Salvadoran-British transforms. The process was repeated for male faces.
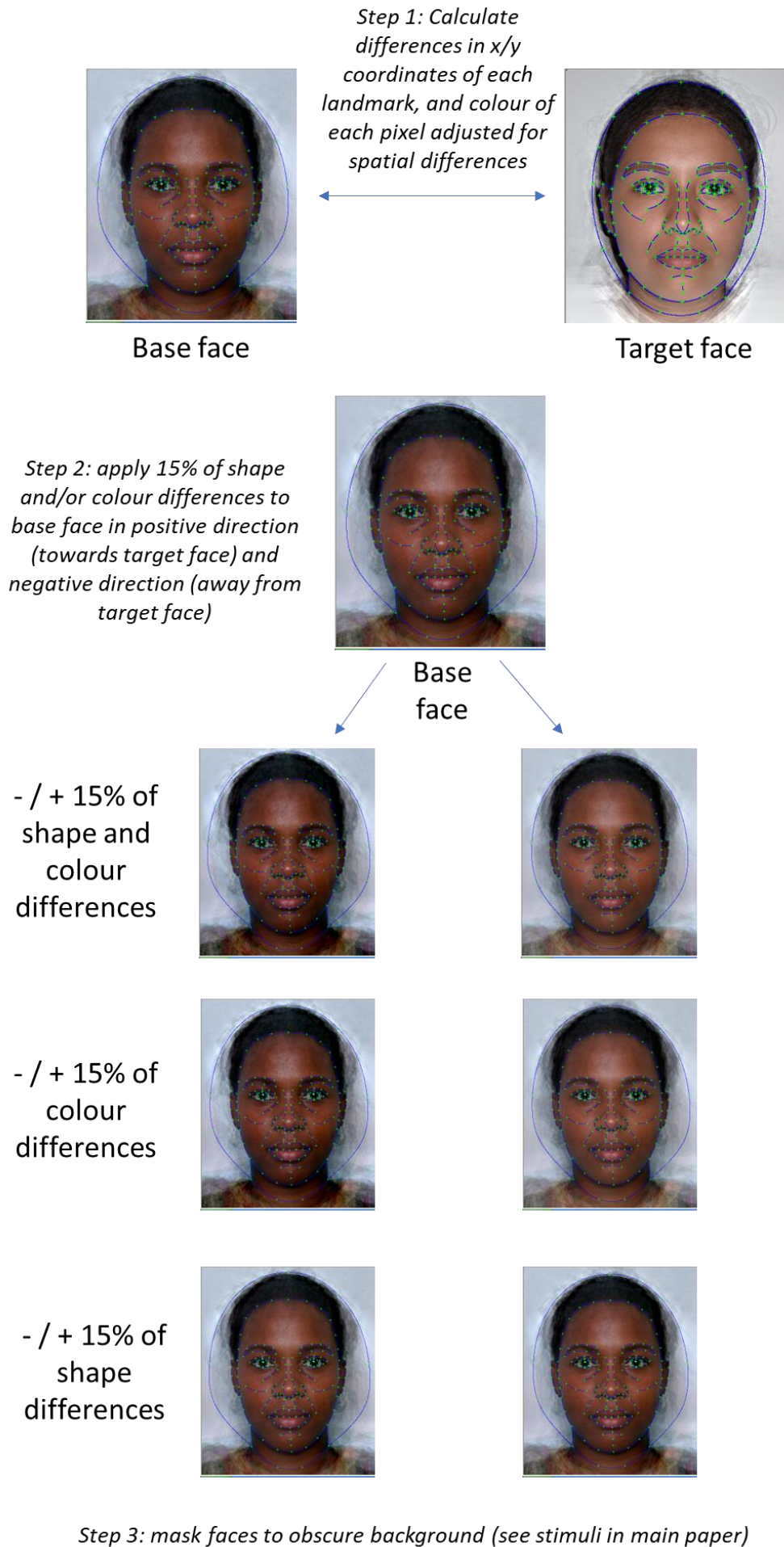
Step 1: Calculate differences in x/y coordinates of each landmark, and colour of each pixel adjusted for spatial differences

Base face

Target face

Step 2: apply 15% of shape and/or colour differences to base face in positive direction (towards target face) and negative direction (away from target face)

Base face

- / + 15% of shape and colour differences

- / + 15% of colour differences

- / + 15% of shape differences

Step 3: mask faces to obscure background (see stimuli in main paper)

Figure S3. Stimulus transformation process

2. Resulting colour differences

The change in colour in the transforms is naturalistic and represents the variations in colour across the face in each exemplar image. Following a request during peer review, we sampled each final stimuli image at four points, as shown below, to show the general changes in CIELab colour resulting from colour transforms. We find that in most image pairs the biggest difference is in luminance, for some it is in the yellow/blue dimension, and some show small differences in the red/green dimension.
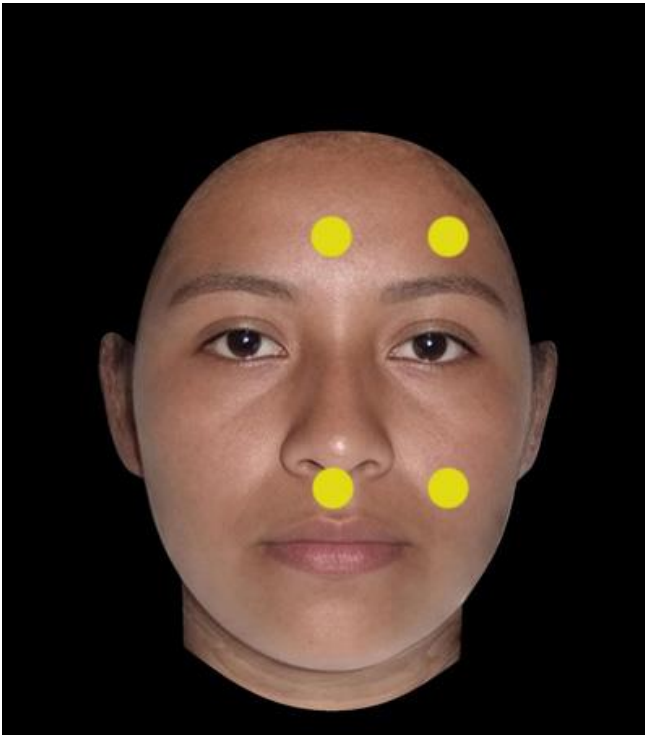

Figure S4. Colour sampling positions when calculating CIELab colour for each image

Table S1. Measured colour for each stimulus

Face sex	Base face	Target face	Transform direction	Measure	L	a	b
Female	Jamaican	Salvadoran	Positive	FP1	42	19	11
				FP2	21	19	19
				FP3	27	21	16
				FP4	19	18	20
				Average	**27.25**	**19.25**	**16.5**
Female	Jamaican	Salvadoran	Negative	FP1	48	19	13
				FP2	29	19	19
				FP3	34	20	15
				FP4	27	17	19
				Average	**30.47222**	**19.02778**	**16.5**
Male	Jamaican	Salvadoran	Positive	FP1	40	21	11
				FP2	24	18	14
				FP3	21	16	9
				FP4	21	15	11
				Average	**29.3373**	**18.59127**	**15**
Male	Jamaican	Salvadoran	Negative	FP1	43	21	13
				FP2	28	17	13
				FP3	29	17	12
				FP4	27	14	12
				Average	**31.75**	**17.25**	**12.5**
Female	Jamaican	British	Positive	FP1	40	19	12
				FP2	19	19	20
				FP3	26	20	16
				FP4	17	17	19
				Average	**25.5**	**18.75**	**16.75**
Female	Jamaican	British	Negative	FP1	47	19	13
				FP2	30	19	19
				FP3	32	21	15
				FP4	27	18	18
				Average	**34**	**19.25**	**16.25**
Male	Jamaican	British	Positive	FP1	38	21	11
				FP2	23	19	13
				FP3	21	15	9
				FP4	23	17	13
				Average	**26.25**	**18**	**11.5**
Male	Jamaican	British	Negative	FP1	45	21	13
				FP2	33	20	15
				FP3	29	18	11
				FP4	28	16	12
				Average	**33.75**	**18.75**	**12.75**
Female	Salvadoran	British	Positive	FP1	63	17	16
				FP2	49	19	20
				FP3	53	19	16
				FP4	53	16	16
				Average	**54.5**	**17.75**	**17**
Female	Salvadoran	British	Negative	FP1	62	18	17
				FP2	52	19	20
				FP3	52	20	16
				FP4	54	17	16
				Average	**55**	**18.5**	**17.25**
Male	Salvadoran	British	Positive	FP1	48	20	20
				FP2	38	21	21
				FP3	48	19	17
				FP4	43	16	15
				Average	**44.25**	**19**	**18.25**
Male	Salvadoran	British	Negative	FP1	50	21	20
				FP2	41	21	20
				FP3	47	21	16
				FP4	45	17	15
				Average	**45.75**	**20**	**17.75**