

BASIC COMPOSITE EXPERIMENT

There are 180 trials, 30 per condition, with an approximate testing time of 10-15 minutes total.

Annotation note: A/B = top face part identity A with bottom face part identity B

EXPERIMENTAL DESIGN

CONDITIONS: 6 (3 identity conditions X 2 alignment conditions)

Identity:	Same	- target A/A -> probe A/A
	Composite	- target A/A -> probe A/B
	Different	- target A/A -> probe C/D
Alignment:	Aligned	- top and bottom face parts are aligned
	Misaligned	- the top face part is centered in the middle of the screen, and the bottom face part is horizontally misaligned to the right by 25% the width of the top face part

NUMBER OF TRIALS: 180 trials

- 30 same aligned
- 30 composite aligned
- 30 different aligned
- 30 same misaligned
- 30 composite misaligned
- 30 different misaligned

STIMULUS PRESENTATION TIMING:

- 200ms fixation
- 150ms blank
- 200ms TARGET face display
- 600ms blank
- 500ms PROBE face display
- until response blank
- 1700ms fixation (ITI)

NOTES:

- *alignment and sex are always the same in a target/probe trial pair, e.g., an aligned female target will always be paired with an aligned female probe
- *the exact target/probe identities used in the each aligned identity condition are the same in the corresponding misaligned condition
- *stimuli: 10 different top identities, each combined with 4 different bottom identities, for a total of 40 different identities
- *the probe image is always displayed at a 5% size increase to reduce low-level bias
- *each stimulus identity was represented equally as a target or probe (4-6 repetitions each)
- *the trials are sorted randomly into 3 blocks of 60 trials each, so that the participants have time to rest in between blocks
- *the order of trials within each block is re-randomized by participant
- *the experiment begins with 6 practice trials, 1 of each condition

MEASURING THE EFFECT

Accuracy is reported in the output "ImageDisplay2.ACC"

0 = incorrect (top parts incorrectly identified as same or different)

1 = correct (top parts correctly identified as same or different)

*for aligned composite trials, incorrect answers suggest the presence of a composite effect (identical top parts appear different)

Response time is reported in "ImageDisplay2.RT"

This is the reaction time in ms.

Measuring the composite effect:

Accuracy

- Basic measure:

$\text{Accuracy}(\text{composite misaligned}) - \text{Accuracy}(\text{composite aligned})$

- Using same condition trials as a baseline:

$[\text{Accuracy}(\text{composite misaligned}) - \text{Accuracy}(\text{composite aligned})] - [\text{Accuracy}(\text{same misaligned}) -$

$\text{Accuracy}(\text{same aligned})]$

Reaction Time (RT)

- Basic measure:

$[\text{RT}(\text{composite aligned}) - \text{RT}(\text{composite misaligned})]$

- Using same trials as a baseline:

$[\text{RT}(\text{composite aligned}) - \text{RT}(\text{composite misaligned})] - [\text{RT}(\text{same aligned}) - \text{RT}(\text{same misaligned})]$

*RT difference between composite aligned and misaligned trials can also be calculated as a percentage of effect

*RTs may be used from only those trials with correct accuracy