The Attractiveness of Face Cues does not Modulate the Gaze Cuing Effect

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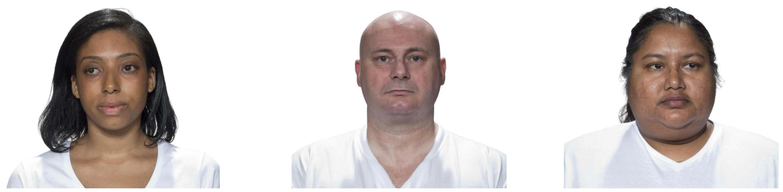
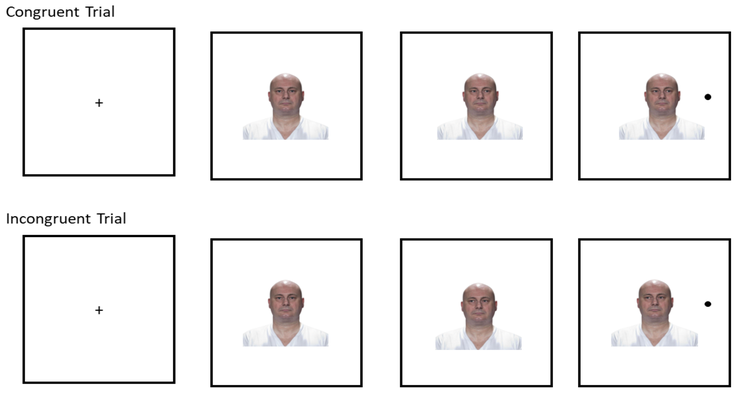
Background

- From the earliest stages of development, humans prioritize processing the faces of others (Reid et al., 2017).
- What a face looks likes carries important information about the identity, and emotions of an individual (Emery, 2000). Where a face is looking (gaze-direction) carries important information about an individuals potential intentions and mental state.



- Attention is drawn towards gazed-at locations. Participants are faster to respond to a target presented at a location previously gazed towards (congruent trial) compared to a locations previously gazed away from (incongruent trial) (Langton & Bruce, 1999).



- This *gaze-cuing effect* is present even when the gaze direction is uninformative of the upcoming location of a target. Therefore, gaze-following has been viewed as a bottom-up (automatic/reflexive) process.
- Recent research suggests that social characteristics of the face such perceived race and trustworthiness modulate this effect (Capozzi & Ristic, 2018). In the current series of experiments, we tested one such characteristics. Specifically, we asked whether the perceived attractiveness of a face would impact the gaze-cuing effect?

Experiment 1: Are attractive faces prioritized?

- 36 participants (Mean age = 31.91, 14 females, 22 males) were drawn from Prolific™ online recruitment platform.
- 16 faces were selected from the Face Research Lab – London Database (DeBruine & Jones, 2017) to be high and low on ratings of attractiveness.
- Prior the start of the experiment, participants rated each of the 16 faces on a scale from 1 ("much less attractive than average) to 7 ("much more attractive than average). Attractive faces were rated higher (M=4.15) than unattractive faces (M= 2.01).

	Attractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	407 (17.7)	416 (18.8)	9*
Accuracy %	99 (0.3)	99 (0.2)	0
	Unattractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	409 (18.5)	416 (18.7)	7*
Accuracy %	99 (0.3)	99 (0.2)	0

*p < 0.05

- Participants were faster on congruent than incongruent trials. However, this gaze cuing effect was not impacted by attractiveness of the face cue.

Experiment 2: Larger sample, more extreme faces

- 64 participants (*M* age = 31.51, 23 females, 38 males, 3 non-binary) were drawn from the Prolific™ online recruitment platform.
- The design was identical to Exp 1, with the exception that stimuli were only the highest rated male face, the highest rated female face, the lowest rated male face, and the lowest rated female face in Exp 1.

	Attractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	568 (18.4)	582 (17.4)	14
Accuracy %	97 (0.5)	98 (0.5)	-1
	Unattractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	562 (18.4)	580 (17.8)	18
Accuracy %	97 (0.6)	98 (0.4)	-1

*p < 0.05

- Again, we found replicated the gaze-cuing effect and found no evidence that the attractiveness of the cue impacted this effect.

Experiment 3: Even larger sample, shorter cue time

- In the final experiment, the time between the face cue and the stimulus varied randomly between 200 msec (short SOA) and 600 msec (long SOA).
- 97 participants (*M* age = 32.21, 40 females, 45 males, 2 non-binary) were drawn from the Prolific™ online recruitment platform.

Short SOA

	Attractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	548 (9.9)	557 (10.1)	9*
Accuracy %	98 (0.4)	98 (0.4)	0
	Unattractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	546 (9.2)	550 (9.7)	4*
Accuracy %	98 (0.4)	98 (0.3)	0

*p < 0.05

Long SOA

	Attractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	527 (9.8)	535 (8.9)	8*
Accuracy %	98 (0.5)	98 (0.4)	0
	Unattractive Face Cue		
	Congruent	Incongruent	Cuing Effect
RTs (in msec)	522 (9.5)	535 (9.4)	13*
Accuracy %	98 (0.3)	99 (0.3)	0

*p < 0.05

- For a third experiment, the attractiveness of the face cues did not impact the gaze cuing effect.

Conclusions

- Elsewhere, social characteristics of faces including social dominance and trustworthiness have been shown to impact gaze-cuing (Capozzi & Ristic, 2018). Across three experiments we find no support that attractiveness is one such characteristic.
- Although information about attractiveness can be extracted with 100 msec of viewing a face, the current experiments suggest that this signal is not a relevant input into spatial attention.
- Future studies in the lab will use a more diverse set of stimuli and examine the extend to which task and motivational factors might change the relevance of facial attractiveness.

References

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