

# Individual differences in autistic traits predict visual binding abilities

Sol Z. Sun<sup>1,2</sup>, Ryan A. Stevenson<sup>1</sup>, Naomi D. Hazlett<sup>1</sup>, Morgan D. Barense<sup>1,3</sup>, Jonathan S. Cant<sup>2</sup>, Susanne Ferber<sup>1,3</sup>  
<sup>1</sup>University of Toronto, <sup>2</sup>University of Toronto Scarborough, & <sup>3</sup>Rotman Research Institute at Baycrest

## Introduction

- A core symptom of Autism Spectrum Disorder (ASD) is a deficit in binding sensory inputs into a unified representation<sup>1,2</sup>.
- ASD is also associated with a default local attentional scope<sup>3,4</sup>.
- A global attentional scope increases the magnitude of the composite face effect (CFE), a measure of holistic face processing<sup>5</sup>.

## Research Question

- Do individual differences in ASD traits predict the degree to which global/local attentional scope influences the composite face effect?

## Methods

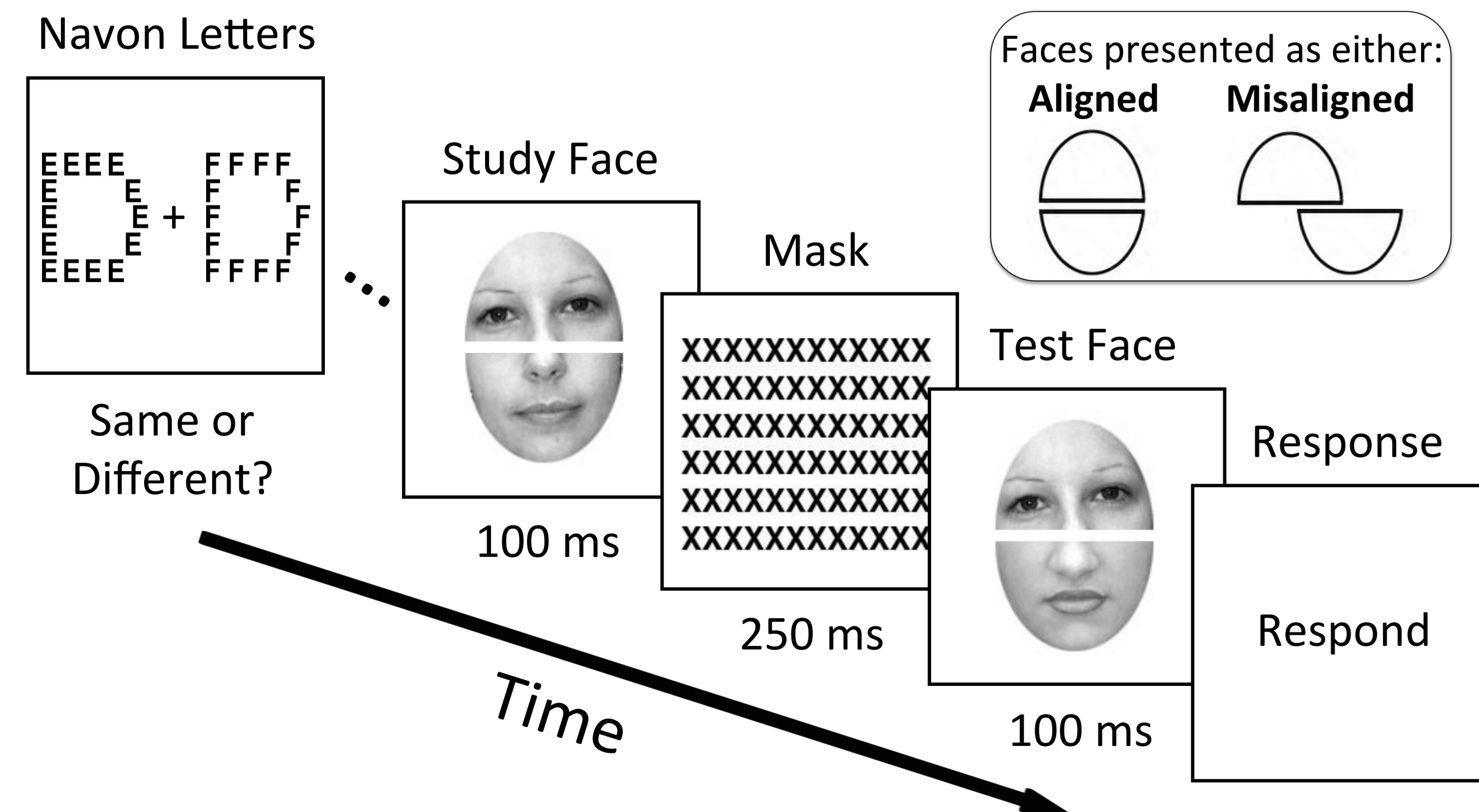
### Participants

- 48 healthy undergraduates (mean age: 20.6 years)

### Questionnaire

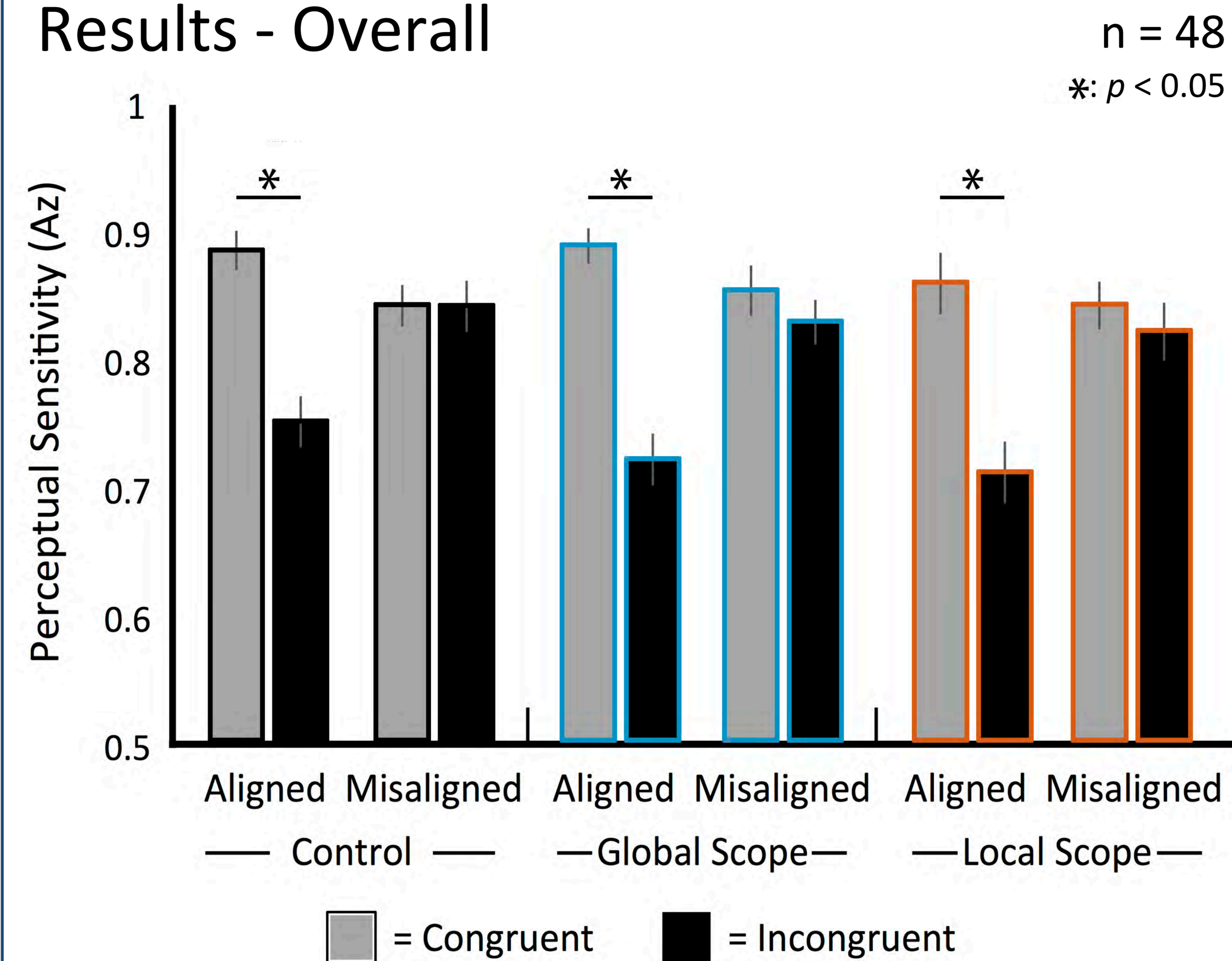
- Autism Quotient<sup>6</sup> (AQ): 50 items.  
 Factors: Social Skills, Communication, **Attention to Detail**, Attention Switching, Imagination.

### Global/Local Composite Face Task



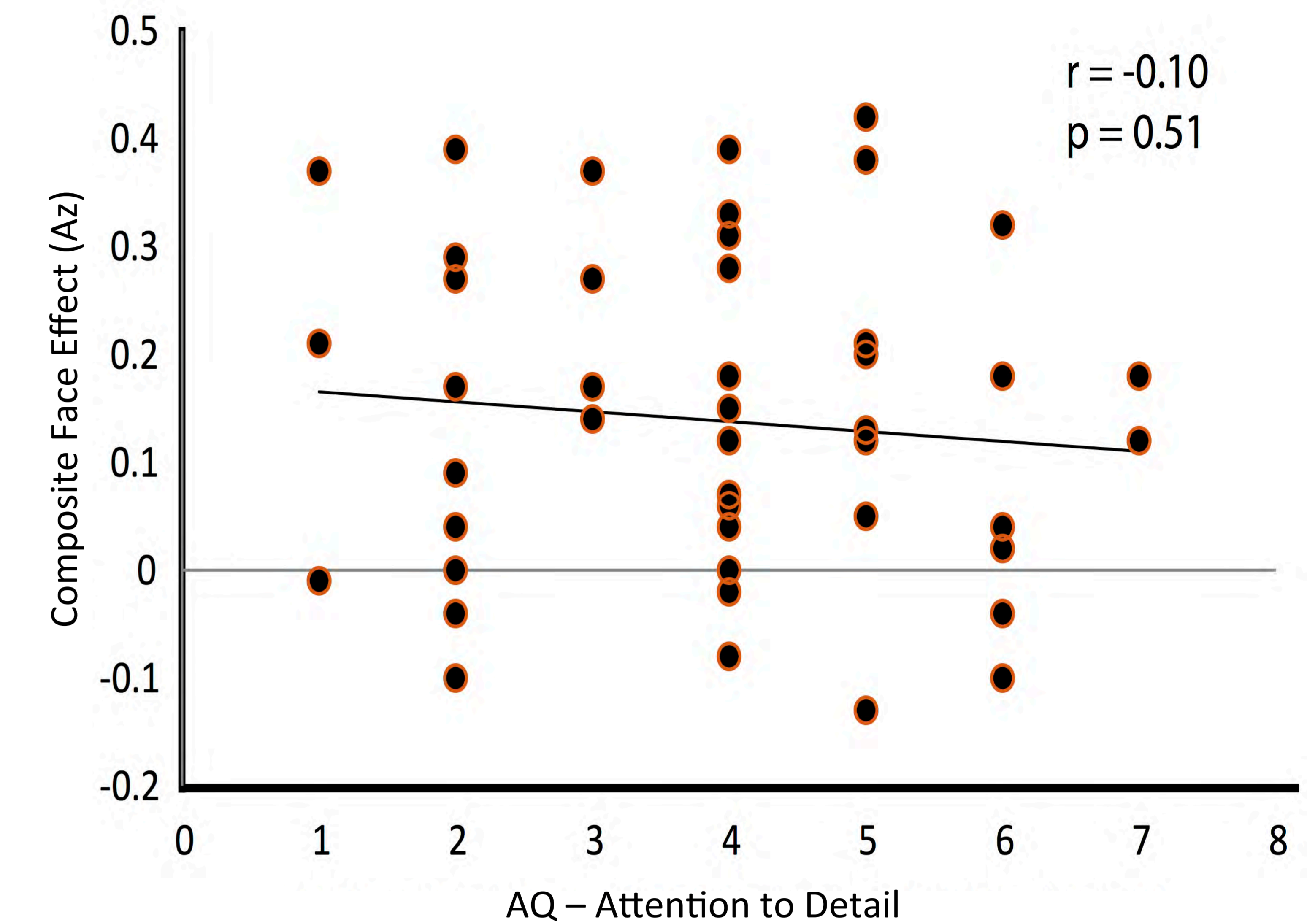
- **Navon Letters:** Attend to either the global or local letter. Are the letters 'same' or 'different'? In the control condition, single letters are shown instead of Navon Letters.
- **Composite Faces:** Are the top-halves of faces 'same' or 'different'? Bottom-halves are either congruent or incongruent with the correct response.

## Results - Overall



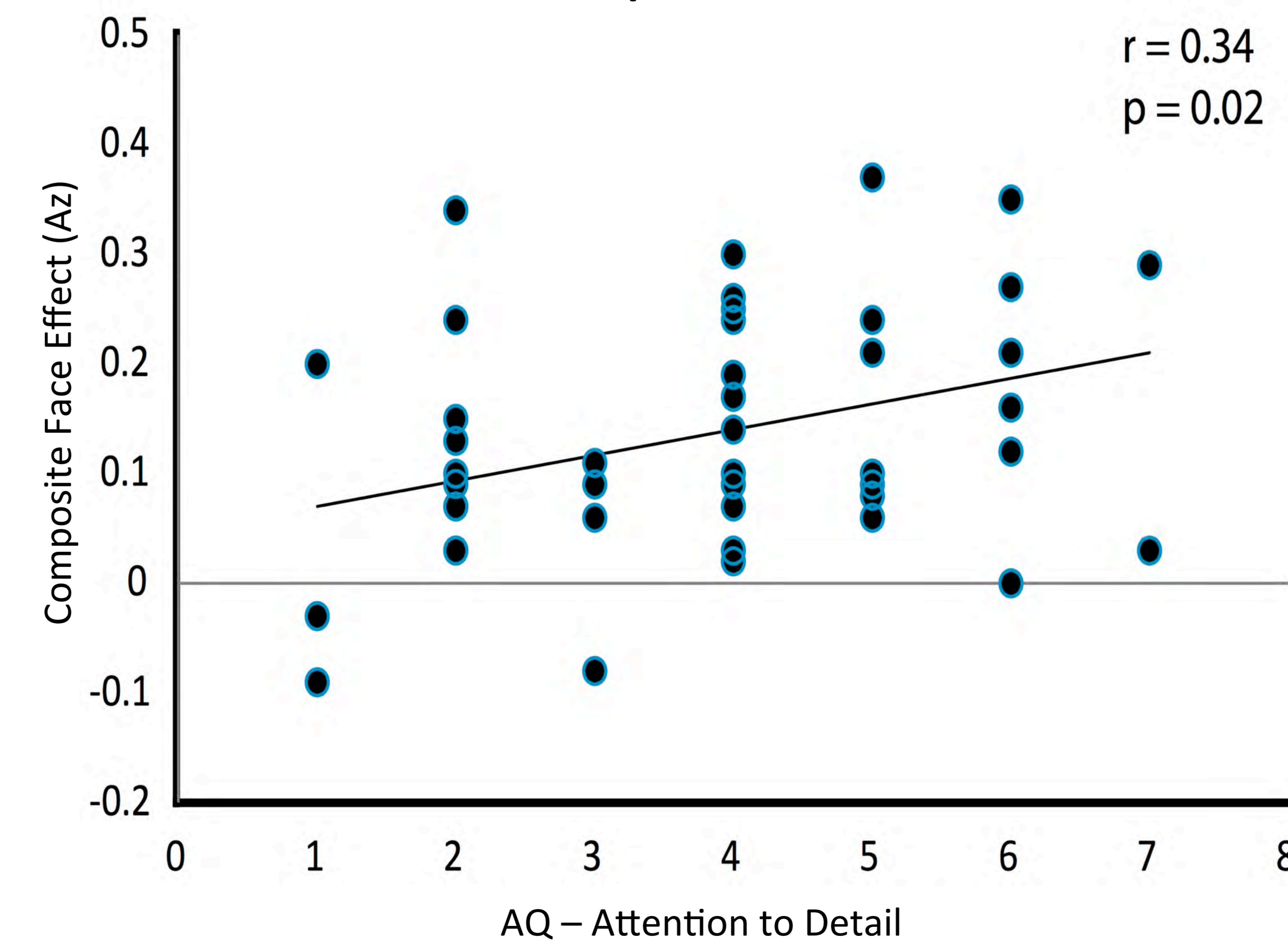
- While a robust CFE is observed, the global/local attentional scope manipulation did not affect CFE magnitude at the group level.

## Results - Local Scope



- The Attention to Detail subscale of the AQ does not predict the magnitude of the CFE in the Local Scope condition.
- Together, these data suggest that individuals high in Attention to Detail are more likely to shift from a local to a global scope following the Navon Task, thus increasing susceptibility to the CFE.

## Results - Global Scope



- At the level of individual differences, the Attention to Detail subscale of the AQ predicts the magnitude of the CFE in the Global Scope condition.

## Conclusions

- Attention to Detail, a subscale of the AQ, predicted the CFE after attention was directed globally, but not locally.
- Individuals high in Attention to Detail may be more susceptible to global attentional scope manipulations, thus showing a greater increase in the CFE.
- This suggests that individuals high in autistic traits are fully capable of global processing when attention is directed to global elements.

## Selected References

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- 4) Plaisted, Swettenham, & Rees. (1999). *Journal of Child Psychology and Psychiatry*.
- 5) Gao, Flevaris, Robertson, & Bentin. (2011). *Attention, Perception, & Psychophysics*.
- 6) Baron-Cohen et al. (2001). *Journal of Autism and Developmental Disorders*.