

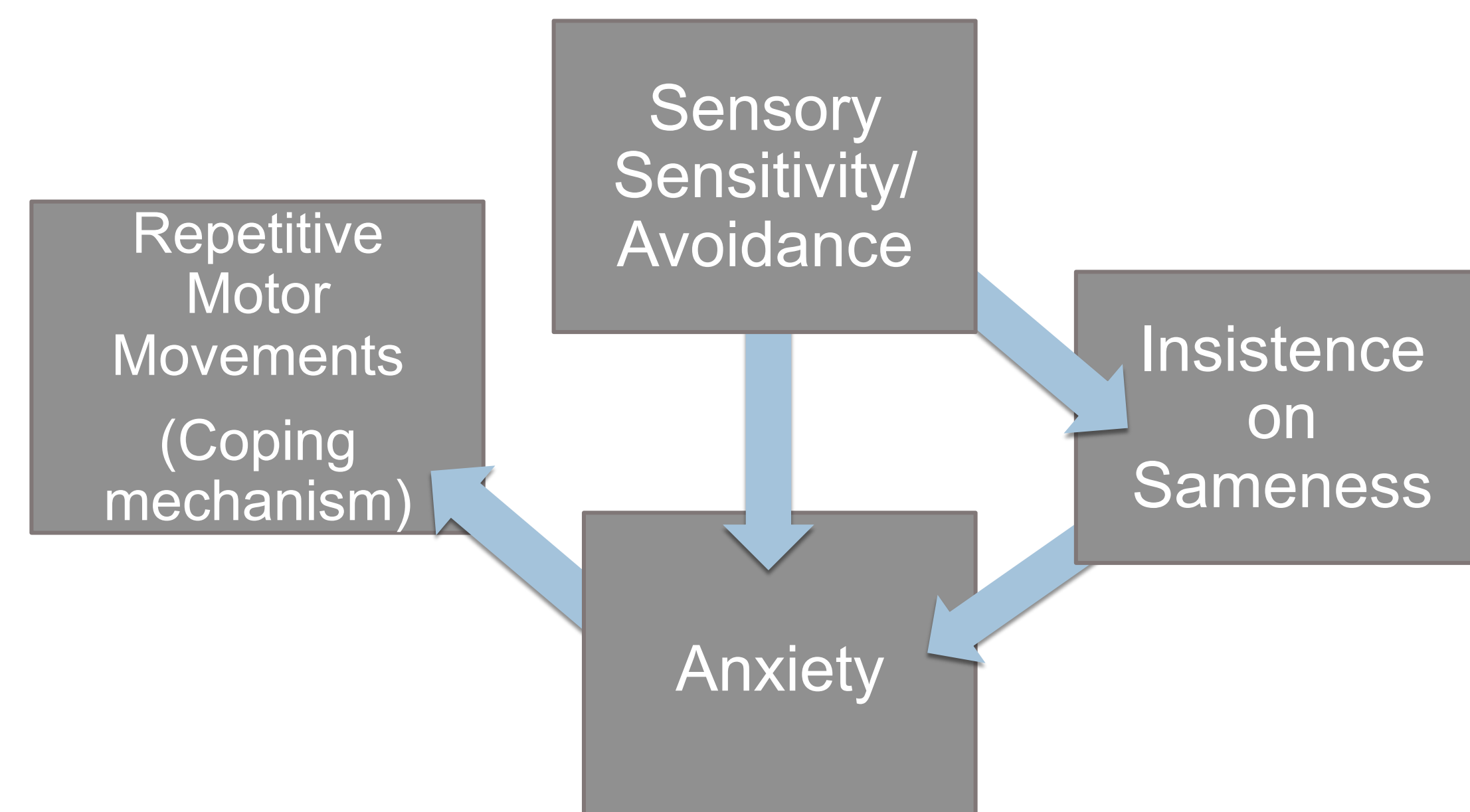
Stable sensory phenotypes in Autism influence ASD symptomology

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INTRODUCTION

- 40% of children with autism spectrum disorder (ASD) suffer from co-morbid anxiety:
-linked to increased aggression and self-injury
- Hypersensitivity to sensory stimulation may underlie these symptoms of distress.
- Distress in children with ASD has also been linked to repetitive behaviour:
 - Repetitive motor movements (RMM) → help soothe anxiety
 - Insistence on sameness (I/S) → linked with increased anxiety
- We investigated whether sensory sensitivity and the tendency to avoid sensory stimulation were related to I/S and anxiety in children with ASD



METHODS & PARTICIPANTS

Parents of children with ASD and without (TD) completed 3 questionnaires about:

- 1) Sensory-related behaviours
- 2) Repetitive behaviours
- 3) Anxious behaviours

We predicted:

- 1) I/S would be positively correlated with sensitivity, avoidance and anxiety (for all subscales)
- 2) I/S-sensory-anxiety correlations would be significantly stronger in the ASD group, relative to the TD group.

Parent-reported characteristics of ASD & TD children

		Age		Sex		FSIQ	
	N	M(SD)	Min/Max	M	F	M(SD)	Min/Max
ASD	39	11.95(3.1)	7/20	29	10	93.41(22.56)	45/135
TD	34	11.56(3.1)	6/18	10	24	102.79(10.32)	86/121

METHODS

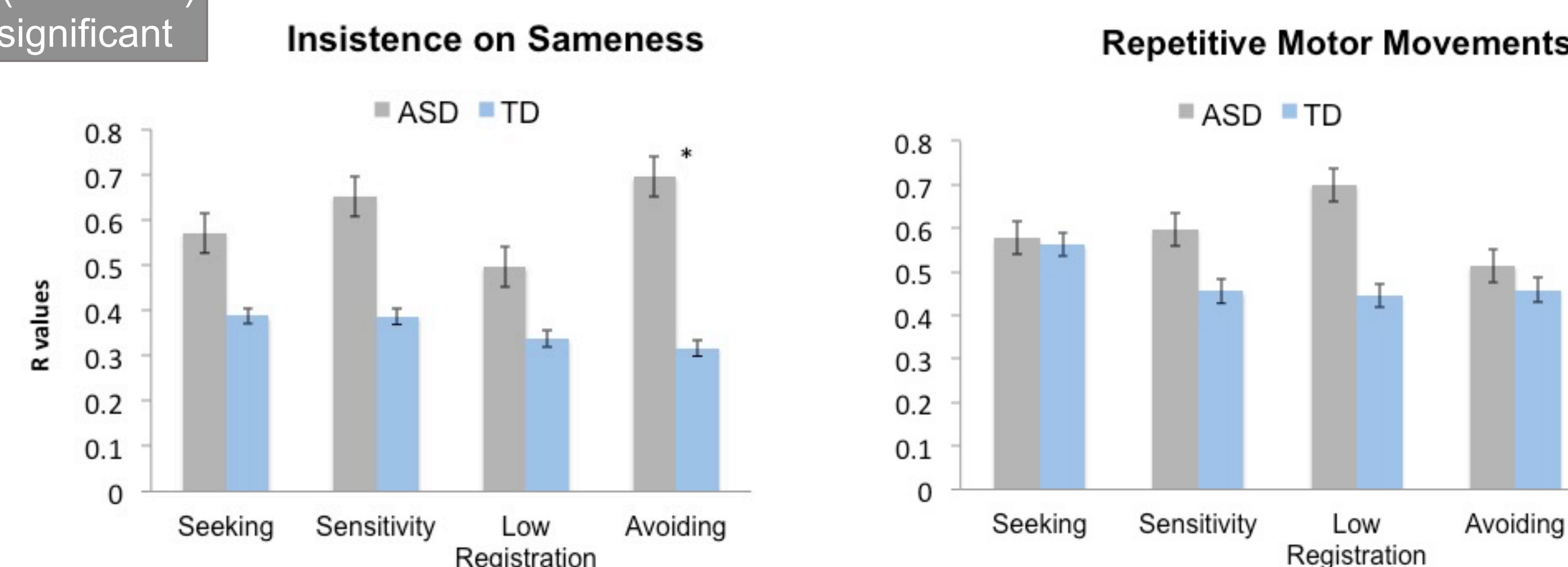
Questionnaires

Sensory Profile 2: Child	Repetitive Behaviour Questionnaire-2	Spence Children's Anxiety Scale
4 quadrants of behavior affected by sensory processing: <i>low registration, seeking, sensitivity, and avoiding</i>	Frequency and severity ratings of repetitive behaviours: <i>RMM, I/S</i>	Assessment of different anxiety symptoms: <i>Panic, separation, physical, social, OCD</i>

RESULTS

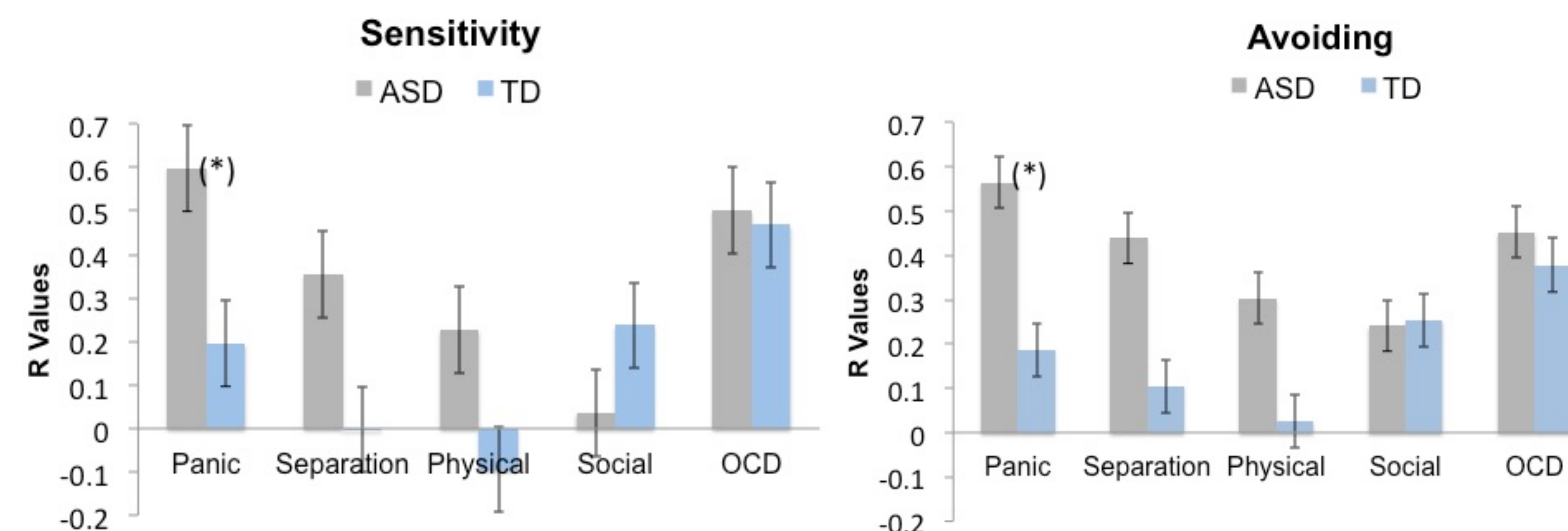
Significant Differences
* = $p < .05$ (two-tailed)
(*) = near significant

Correlations between repetitive behaviour and sensory processing



Sensory processing was positively correlated with I/S across all subscales, with a significantly stronger correlation in the ASD relative to the TD group for sensory avoiding.

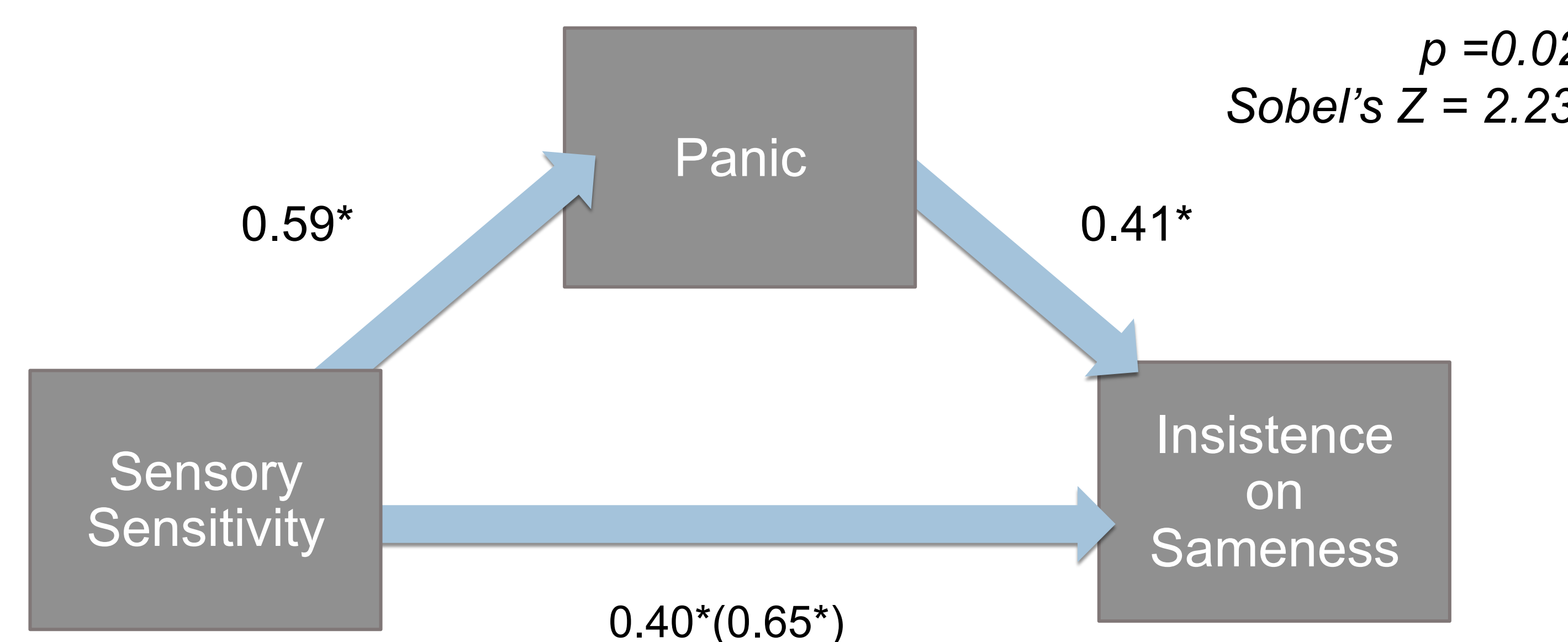
Correlations between sensory processing and anxiety



Both sensitivity and avoiding correlated with panic, but only for the ASD group. The difference in correlation strength trended towards significance.

Mediation analysis between sensitivity, panic & I/S for children with ASD

Parents of children with higher sensory sensitivity reported greater frequency of panic symptoms, which resulted in higher scores of I/S behaviours



CONCLUSION

- Findings indicated significant differences between the ASD and TD groups:
 1. Subscales of sensitivity and avoiding correlated with I/S but not RMM.
 2. Scores on the panic subscale mediated the relationship between SS and I/S.
- Our results suggest that for children with ASD, the relationship between sensory sensitivity and I/S is driven by panic – that is, *hypersensitivity to sensory stimulation may lead to anxiety (panic), which is then dealt with through I/S behaviours.*

Improving our understanding of the role sensory sensitivity plays within the anxiety-RB axis of ASD will enable development of interventions which treat the underlying sources of distress rather the symptom.

FUTURE DIRECTIONS

- Based on recommendations for improving anxiety-related research for children with ASD, future testing will include:
 - A semi-structured interview with a clinical cut-off (ADIS-IV-C)
 - Teacher reports of the Sensory Profile-2: Child
- Structural equation modeling will also be used to further investigate directional relationships.

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