

Investigating the neural basis of cognitive heterogeneity in autism

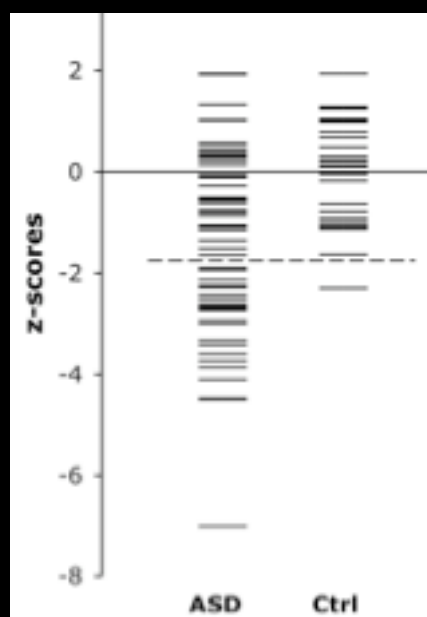
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Autism



Several possible cognitive mechanisms

- mentalising / theory of mind
- heterogeneity - good and poor ToM



Study cognitive subgroups in brain

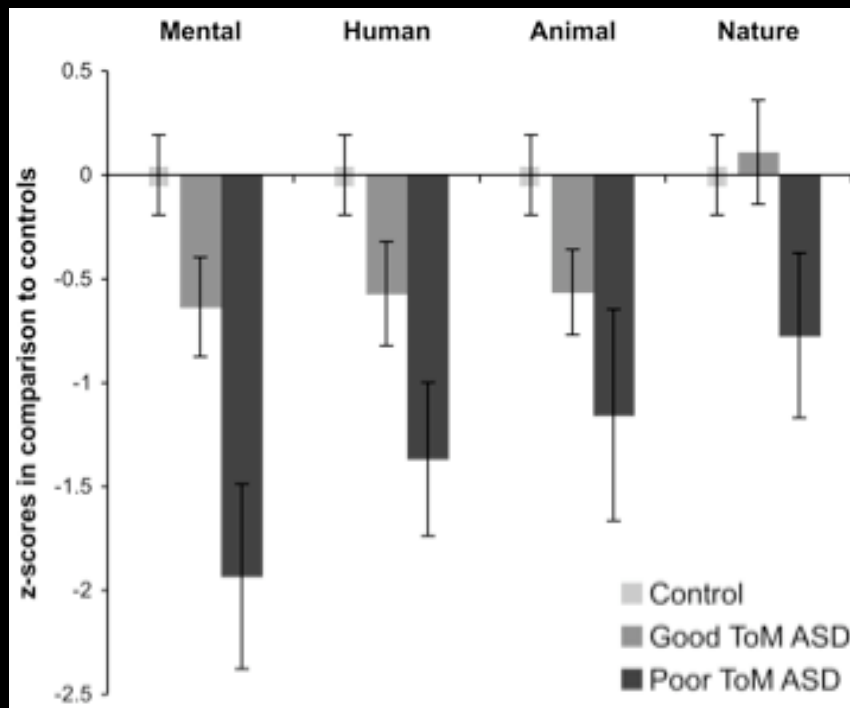
- particularly, children with ASD but good ToM behavioural performance
- intact mentalising or compensation?

Study design



Strange Stories (Happé, 1994; Fletcher et al., 1995)

- mental stories plus physical control set
- extended to include 3 physical sets (human, animal, nature)



3 groups

- control, good ToM ASD, poor ToM ASD
- 2 comparison groups for good ToM ASD group - matched for task performance / diagnosis
- activate mentalising network like controls?

Study proposal



Participants - 3 groups x 10 adolescents (11-16s)

- already identified; high-functioning - matched for IQ

Procedure - 4 story sets / conditions

- 30s duration (audio & text), then question about content (15s)
- 6 stories per set, presented in blocks (~5 min each)
- standard T1-weighted structural scan (6 min); 30 min max total

Brain coverage

- 3.5mm x 3.5mm x 3.5mm voxels, 33 slices oriented to AC-PC line, TR=2.5s

Analysis - random effects analysis in SPM 5

- one-sample t-tests for contrasts within each group
- two-sample t-tests to compare between groups