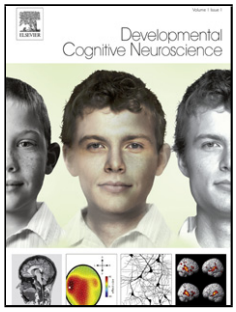

Title: Adaptation of social and non-social cues to direction in adults with autism spectrum disorder and neurotypical adults with autistic traits

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Adaptation of social and non-social cues to direction in adults with autism spectrum disorder and neurotypical adults with autistic traits.

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Highlights

- Autistic traits negatively predict adaptation magnitude for social and non-social cues
- Only adaptation magnitude for social eye-gaze is diminished in adults with ASD
- High ADOS scores predict smaller aftereffects for head and eye-gaze direction
- Diminished adaptation in autistic adults may only affect impaired perceptual domains

Abstract:

Perceptual constancy strongly relies on adaptive gain control mechanisms, which shift perception as a function of recent sensory history. Here we examined the extent to which individual differences in magnitude of adaptation aftereffects for social and non-social directional cues are related to autistic traits and sensory sensitivity in healthy participants (Experiment 1); and also whether adaptation for social and non-social directional cues is differentially impacted in adults with Autism Spectrum Disorder (ASD) relative to neurotypical (NT) controls (Experiment 2). In Experiment 1, individuals with lower susceptibility to adaptation aftereffects, i.e. more 'veridical' perception, showed higher levels of autistic traits across social and non-social stimuli. Furthermore, adaptation aftereffects were predictive of sensory sensitivity. In Experiment 2, only adaptation to eye-gaze was diminished in adults with ASD, and this was related to difficulties categorizing eye-gaze direction at baseline. Autism Diagnostic Observation Schedule (ADOS) scores negatively predicted lower adaptation for social (head and eye-gaze direction) but not non-social (chair) stimuli. These results suggest that the relationship between adaptation and the broad socio-cognitive processing style captured by 'autistic traits' may be relatively domain-general, but in adults with ASD diminished adaptation is only apparent where processing is most severely impacted, such as the perception of social attention cues.