

Multisensory Integration and Autistic Traits

Background: Sensory processing issues are one of the most common complaints in autism spectrum disorder (ASD). One area of sensory difficulties in ASD that has been the focus of intense research in recent years is multisensory integration (MSI), or the ability to bind auditory and visual information into a single, unified percept. While integration of social or linguistic information is consistently shown to be an area of difficulty in ASD, results are less clear with simple, non-sociolinguistic stimuli. This study aims to address this ambiguity by determining whether MSI of non-sociolinguistic sensory information is related to traits and symptomatology commonly associated with ASD.

Methods: Sixty-five undergraduate students completed a behavioural audiovisual detection task and a battery of questionnaires assessing ASD-related traits and symptomatology. Multisensory enhancement (ME) was measured by comparing accuracy rates during audiovisual trials to the accuracy rate predicted by the unisensory conditions assuming independent processing: $(AVacc - [Aacc + Vacc - (Aacc * Vacc)])$.

Results: Results revealed no relationship between ME of simple, non-sociolinguistic sensory information and autistic traits and symptomatology, with R-squared values ranging between 0.001-0.03.

Discussion & Conclusion: While MSI issues are well established with sociolinguistic stimuli, these data suggest that these issues may be restricted to social or linguistic information. The lack of any relationship between ME and ASD traits spanned a range of symptoms, including repetitive behaviours, social communication, and sensory issues, suggesting MSI may be associated with autism symptomatology only when sociolinguistic information is present.

Interdisciplinary Reflection: This research combines behavioural measures of sensory perception and diagnostic criteria used in clinical settings to assess ASD traits.