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Enhanced Visual-Linguistic Interaction in Children within the Autism Spectrum: Evidence from the Visual-World Paradigm with Dynamic Scenes

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Abstract

How do children within the autism spectrum (ASD) integrate linguistic and visual information during real-time processing of sentences and dynamic scenes? We employed a visual word paradigm with sentences containing different verb types (causatives such as 'crack'; perception/psychological verbs such as 'examine') and with different scene contexts (agent in the scene moving towards a target object or remaining neutral). Participants were a group of 10-year old ASD and typically developing children (TD). We reasoned that the two dominant theories about ASD cognitive processing style—the weak central coherence theory (WCC) and the enhanced perceptual function (EPF)—make different predictions on how and where information about linguistic and visual information may be integrated. WCC predicts that ASD children would have greater difficulty with sentence and scene semantics while EPF predicts an early, post-perceptual integration via verb-specific and object (but not full scene) representations. The results suggest that ASD children differ from TD children by computing the link between verb and object faster, suggesting an enhanced post-perceptual integration.