Public Abstract
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Title:Cognitive Processes Contributing to Visual Working Memory Performance in Individuals with Autism Spectrum Disorder

Previous investigations of working memory performance in individuals with Autism Spectrum Disorder (ASD) have yielded mixed findings (e.g., Kenworthy, Yerys, Anthony, & Wallace, 2008; Geurts, de Vris, & van den Bergh, 2014). Research examining visual and spatial working memory abilities in older adolescents and adults with ASD specifically is limited. The current study assessed the contribution of working memory capacity, attention, and visual filtering abilities to visual working memory performance in adolescents and adults with and without ASD. Furthermore, the current study examined task performance related to real world report of working memory and attention abilities. Results revealed comparable estimates of visual working memory capacity overall between groups. However, visual working memory performance for individuals with ASD appeared to be more impacted by increases in attention and visual filtering demands. Individuals with ASD allocated their attention differently than non-ASD individuals, and spent less time looking at relevant information. The ASD group had more difficulty filtering distracting information in more challenging conditions. Difficulties on the task did not significantly relate to reported real world working memory or attention abilities. Findings suggest that visual working memory performance is similar between individuals with and without ASD when cognitive demands are low, but individuals with ASD are detrimentally effected when the cognitive load increases (increased attention and visual filtering demands), consistent with previous literature (Kenworthy et al., 2008). Given the complexity of our environments and need to filter visually distracting information, these findings may shed light on ASD-related difficulties in day-to-day functioning and provide a focus for intervention.