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Measuring Selective Sustained Attention in Children with TrackIt and Eyetracking

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Abstract

Measuring selective sustained attention (SSA) development in preschool-aged children has been difficult due to challenges in designing age-appropriate measurement paradigms. The TrackIt task, together with eye-tracking and a recently proposed Bayesian-model based eye-tracking analysis method, creates opportunity for fine-grained measurement of SSA in young children. The current study 1) provides the first rigorous validation of this method by comparing model judgments with human video-coding of the data, and 2) further explores potential uses of this method for providing nuanced measures of SSA. More specifically, we use the analysis method to explore different ways of characterizing SSA based on eye-gaze data obtained during TrackIt with 3- to 6-year old children. We look at patterns of in-trial eye-gazing across age and across time.