Recently rewarded task-irrelevant stimuli do not distract 2-year-olds during visual search

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Abstract: In adults, stimuli associated with reward capture attention, even when task-irrelevant, resulting in distraction (Awh et al., 2012). Here we examine whether rewarded stimuli capture attention in 2-year-old children. Toddlers (N = 46, mean age: 28;10, range: 19;16 - 36;18) performed a visual search task where the target switched between blocks. Search arrays consisted of the current target, a previous target, and six feature conjunction distractors. On each trial, the current target was cued, and following a fixed search period, rotated as a reward. We used a Tobii T120 eye-tracker to record toddlers' eye-movements. Following a target switch, toddlers fixated the current target before the previous target, despite the previous target's recent reward history $F(1, 44) = 31.183$, $p < 0.001$). Our study is one of the first to investigate the early development of reward-based attentional selection.