

Individual Differences in Visual Search and Foraging in children

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There is empirical evidence showing a relationship between attentional performance and individual differences such as Working Memory (WM) capacity or emotional problems in children (Blanken et al., 2017). But, how do individual differences mediate selective attention in Visual Search (VS) tasks in children? To answer this question, we tested 88 children using a standard VS task (e.g. Hommel et al., 2004) and a Hybrid Foraging search task, where children had to look for two targets appearing more than once among several distractors, in Feature (blue & green squares, among red and yellow distractors) and Conjunction (green circles & blue squares among blue circles and green squares) conditions. To measure individual differences we ran several questionnaires/tests: BRIEF for Executive Functions, CPT for attentional problems, BASC for behavioral and/or emotional problems (BASC), and Intelligence Quotient (RIST). For the VS, results show differences in WM capacity: Children with clinical WM symptoms have steeper RT x Setsize slopes when the target is absent than children in normal range ($p=.03$), or children with higher WM capacity ($p=.01$). In the Hybrid Foraging task, the differences show up for the Conjunction condition where clinical WM children spend more time looking for each target compared to those with higher WM capacity ($p=.026$). This result is only significant when the target is a switch (change of target, $p=.024$) but not when it is a run (a repetition target found). Other interesting relationships were found for RT in the Foraging Feature with Depression ($r=.287$, $p=.009$), Adaptability ($r=-.302$, $p=.006$), Social Abilities ($r=-.272$, $p=.015$) and Leadership ($r=-.224$, $p=.044$). For the Foraging Conjunction RT correlated with initiative ($r=-.276$, $p=.011$), and Cognitive Regulation too ($r=-.274$, $p=.013$). Hybrid Foraging tasks seem to be a potential tool to explore attentional processes in children sensitive to individual differences.