Children combine information from multiple models in a grid search task

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Abstract

Population size has been proposed to promote cumulative culture in humans. Experimental evidence from adult humans suggests that this may be due to the potential for combining beneficial information from multiple models. However, it is possible that such combinatory social learning requires cognitive capacities restricted to adult humans. In our task, children aged 5-10 years watched two models consecutively search a 3x3 grid for rewards. Models revealed different correct and incorrect reward locations. This information could be used by the child to maximise their own score on the same task. We were interested in childrens ability to select rewarded locations, and avoid unrewarded ones, revealed by both models. We also manipulated the spatial and temporal displacement of the information available. Childrens performance on the task improved with age. Most children could outperform the mean score of the two models, but outperforming the combined score occurred in only limited circumstances.