Development of Metacognition in Multi-Choice Decision Making

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Abstract

Metacognitive confidence is typically investigated using two-alternative decision-making tasks, with prevailing theories suggesting that confidence reflects the overall probability that the decision is optimal. However, recent findings from three-alternative tasks instead suggest that adults' confidence reflects the difference between the probabilities of the best and next-best options only, with other options disregarded altogether (Li & Ma, 2020). Using a uniquely sensitive confidence measure and a novel probability task—in which participants had to predict the colour of a ball selected from arrays of varying colour distributions—we investigated the development of children's confidence in multi-choice decisions (N = 100, aged 6-9-years). Findings indicate that children's confidence varies as a function of the probability of the best option, decision accuracy, and response latency. With increasing age, children's confidence also reflects the probability difference between the best and next-best options (just like adults), despite this factor being irrelevant to accuracy.

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