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**Age-related differences in children's strategy repetition: a study in arithmetic.**

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Summary: Third and fifth graders (Experiment 1) and fifth and seventh graders (Experiment 2) accomplished computational estimation tasks in which they provided estimates to two-digit arithmetic problems (e.g.,  $34 + 68$ ). Participants saw trials, each including three consecutive problems. Each trial was separated by a letter judgment task (i.e., participants needed to say whether a series of four letters included only vowels, only consonants, or both types of letters). On each problem, children were asked to select the better of the following strategies: rounding down (i.e., rounding both operands down to the nearest decades; e.g.,  $30 + 60 = 90$ ) or rounding up (rounding both operands up to the nearest decades; e.g.,  $40 + 70 = 110$ ). Half of the trials were repeated strategy trials (i.e., the better strategy was the same for the first two prime problems and the last target problem) and half were unrepeated strategy trials (i.e., the better strategy was different for prime and target problems). We found that (a) children repeated the same strategy over successive problems, even when they should change strategies to obtain better performance, (b) strategy repetitions decreased with age, (c) repeating the same strategy gave children performance benefits, and (d) these strategy repetition benefits were similar across grades. These effects of strategy repetition during strategy selection and strategy execution have important empirical and theoretical implications regarding how children choose among strategies, how children execute selected strategies on each problem, and how strategic variations change with age.

*Classification:* F32 F33 N22 N23 C32 C33

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