

**ZMATH 06676041**

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**Competing features influence children’s attention to number.**

J. Exp. Child Psychol. 156, 62-81 (2017).

Summary: Spontaneous focus on numerosity (SFON), an attentional process that some consider distinct from number knowledge, predicts later mathematical skills. Here we assessed the “spontaneity” and malleability of SFON using a picture-matching task. We asked children to view a target picture and to choose which of four other pictures matched the target. We tested whether attention to number (defined as number-based matches) was affected by (a) age, (b) the presence of very noticeable (or salient) features among alternative match choices, and (c) the examiner’s use of motor actions to emphasize numerosity. Although adults attended to number more frequently than did preschoolers, the salience of competing features affected responses to number in both age groups. Specifically, number-based matches were more likely when alternative choices matched the target on features of low versus high salience (e.g., the relative location within a picture frame vs. color). In addition, adults’ attention to number was more frequent if their first exposure to number-based matches occurred with alternative choices that matched the target on low salience features. This order by salience interaction was not observed among children. Simply observing motor actions that emphasized number (i.e., tapping stimuli) did not enhance children’s attention to number. The results extend previous findings on SFON and provide evidence for the contextual influences on, and malleability of, attention to number.

*Classification:* C30 F20 C40

*Keywords:* SFON; SAN; number; numerosity; context; salience

doi:10.1016/j.jecp.2016.11.008