

Memory for Spatial Locations: An Eye-tracking Study

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Abstract Details

Working memory is the ability to store information while also using it to process cognitive tasks. Working memory has very limited capacity. Ropeter and Pauen (2013) found that that infants who had higher working memory also had higher habituation and dishabituation responses compared to infants who had lower scores on working memory. Visuo-spatial tasks are very different from one another; some give greater spatial cues while others might be more complex and may require different spatial working memory capacities. Studies have found sex differences in performance on spatial tasks in subjects as young as four months old (Moore & Johnson, 2008; Quinn & Liben 2008). The present study involved familiarizing infants between 10 months and 24-months with a target object based on Tzuriel and Egozi's (2010). Stimuli consisted of a house oriented at one of three possible angles, with rattles in 1, 2, or 3 of the windows. In the test trial, infants were shown the same target object during the familiarization phase along with the mirror image of the target object. Our study examines a set of variables thought to affect 13- and 20- month-olds' ability to represent and remember spatial locations of objects, including the number of objects and degree of rotation of the target object. Our results revealed no significant sex difference in preference between familiar and novel images after familiarization, even when controlling for age. In addition, there were no significant moderating effects of angle of rotation or number of objects presented. Our results suggest that the sex differences observed in mental rotation are not present in infants as early as 20 months. This supports the argument that boys and girls have differential spatial experiences, which may explain sex differences in mental rotation in later years.

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