

**SPATIAL ROTATION ABILITIES IN RHESUS MACAQUES: A ROTATIONAL DISPLACEMENT TASK**

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Relocating unobservable objects is a requirement for animals that revisit resources in their habitat. To solve this problem, one tactic is to recognize locations from multiple perspectives. Rotational displacement tasks assess this capacity. In such tasks, subjects attempt to find an object after it is first hidden in an array of containers and subsequently the entire array is rotated. The task is difficult even for older children, but when the array is structured with landmarks 5-year-old children and apes easily solve the task. To continue to investigate the issue from a comparative perspective, we asked whether monkeys could solve this task or would falter as 3-year old children do. Sixty-nine free-ranging rhesus macaques from Cayo Santiago were tested. First, in an array of two differently colored boxes, food was hidden in one box. Next, the array was rotated 180° and the boxes reopened to either reveal the food in the expected or unexpected location. Looking time toward the display was our dependent variable. Log transformed data gave a significant result for longer looks in the unexpected condition ( $P = 0.05$ ), indicating the macaques successfully tracked and anticipated the correct location of the hidden food. Further investigation revealed a developmental pattern; macaques 4 years and older ( $N = 50$ ,  $P < 0.05$ ) successfully completed the task, while macaques 3 years and younger ( $N = 19$ ,  $P > 0.05$ ) did not. Adult monkeys, like apes and 5-year-old children, can complete a visible rotational displacement task with landmarks.

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