

GREAT APES' AND CHILDREN'S REASONING ABOUT SPATIAL RELATIONS IN A MAPPING TASK

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We investigated spatial relational reasoning in four great ape species: chimpanzees (N=6), bonobos (N=5), orangutans (N=5) and children (4- and 5-year-olds, N=48). In a spatial mapping task individuals were required to find a reward in their array of three identical cups after observing the reward being hidden in the experimenter's array of three cups. The arrays were either placed one behind another in two rows or side by side in one line. When in two rows, to be successful, they had to choose a cup in their array that held the same spatial relation as the baited cup in the experimenter's array. They had to map Left-Left, Middle-Middle and Right-Right cups together (aligned mapping). When arrays were in one line, apes and half of the children were rewarded for aligned mapping, whereas the other half of the children needed to map together mirror positioned cups: the outer (L-R), the middle (M-M) and the inner cups (R-L) of the arrays (mirrored mapping). Results showed that apes' and children's performance was constellation dependent - performance was higher when the arrays were placed one behind another in two rows than when placed side by side in one line. Furthermore, when the two arrays were positioned side by side, 4-year-olds and apes showed a preference for mirrored over aligned mapping, whereas 5-year-olds had no preference. This study shows intriguing parallels in apes' and children's reasoning about spatial relational similarity.

Keywords: relational similarity, relational mapping, spatial cognition, cognitive development