Spontaneous alternation in adult rabbits*

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Adult rabbits were seen to alternate spontaneously at a similar rate to rats. A lack of alternation in infant rabbits reported by earlier workers would thus seem to be due to an age rather than species difference.

Baisden, Isaacson, Woodruff, & Van Hartesveldt (1972) state that spontaneous alternation tendencies have not been found in the rabbit. They then showed that, while physostigmine "released" alternation in infant rabbits, control Ss responded only at chance levels. As Kirkby (1967) has found that infant rats do not alternate, it is possible that the results of these control rabbits were merely due to their young ages rather than to a general characteristic of the species. The present paper describes a demonstration of spontaneous alternation in adult rabbits.

METHOD

The Ss were 10 adult gray rabbits (*Oryctolagus cuniculus*), about 6 months old and bred in the Psychology Department of the University of Canterbury. They were tested in a wooden, midgray Y-maze, 10 in. high and 6 in. wide. The lengths of each arm, the stem, and startbox were 26.5, 27, and 14.5 in., respectively. The two arms met at an angle of 90 deg and, as with the startbox, could be separated from the stem by guillotine slides.

Each S was given two successive choices for 8 consecutive days. After the first choice on each day, it was confined to the chosen arm for 30 sec by lowering the slide at the arm entrance. On the second choice, it was noted whether or not the rabbit entered the alternate arm.

RSEULTS AND DISCUSSION

The median alternation rate for the eight daily tests was 7, i.e., 87.5%. According to a sign test, this rate was significantly higher than the chance expectancy of 4 ($p < .002$). Clearly, then, even without the influence of anticholinesterase drugs, adult rabbits alternate at a frequency similar to that described for rats (Douglas, 1966). It, therefore, seems likely that the lack of alternation in nondrugged animals reported by Baisden et al (1972) may have been due to the young ages of their Ss. On Days 1-4, all 10 rabbits in the present study alternated, but on Days 5-8 the numbers alternating were 8, 7, 8 and 5, respectively. Although not significant, this does suggest a decrement in alternation rate with repeated trials similar to that described for rats (Dember, 1961). Contrary to the implication of Baisden et al (1972), the tendency for *Oryctolagus* to alternate choices in a two-arm maze does not seem greatly different from such rodents as rats (Douglas, 1966), mice (Petchkovsky & Kirkby, 1970), hamsters (Hughes & Blackman, 1969), and the carnivorous ferret (Hughes, 1965).

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REFERENCES

Baisden, R. H., Isaacson, R. L., Woodruff, M. L., & Van Hartesveldt, D. The effect of physostigmine on spontaneous alternation in infant rabbits. Psychonomic Science, 1972, 26, 287-288.

Dember, W. M. Alternation behavior. In D. W. Fiske and S. R. Maddi (Eds.), *Functions of varied experience* Homewood, Ill: Dorsey Press, 1961. Pp. 227-252.

Douglas, R. J. Cues for spontaneous alternation. Journal of Comparative & Physiological Psychology, 1966, 62, 171-183.

Hughes, R. N. Spontaneous alternation and response to stimulus change in the ferret. Journal of Comparative & Physiological Psychology, 1965, 60, 149-150.

Hughes, R. N., & Blackman, D. E. Stimulus change effects of forcing on maze arm selection in hamsters. The Quarterly Journal of Experimental Psychology, 1969, 21, 55-57.

Kirkby, R. J. A maturation factor in spontaneous alternation. Nature, 1967, 215, 784.

Petchkovsky, L., & Kirkby, R. J. Individual differences, emotionality, and spontaneous alternation in mice. Australian Journal of Psychology, 1970, 22, 75-78.

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