

WEISSMAN, A. Effect of electroconvulsive shock intensity and seizure pattern on retrograde amnesia in rats. *Journal of Comparative & Physiological Psychology*, 1963, 56, 806-810.

WEISSMAN, A. Retrograde amnesia effect of supramaximal electroconvulsive shock on one-trial acquisition in rats. *Journal of*

Comparative & Physiological Psychology, 1964, 57, 248-250.

NOTE

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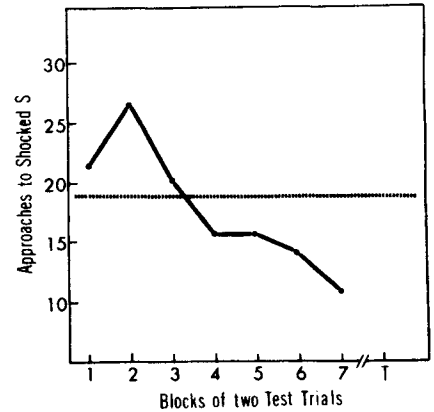


Fig. 1. Total number of "shocked" side choices for the last training day and for all testing days.

Avoidance of a distressed conspecific

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Albino rats previously trained to run to sucrose reinforcers in both arms of a T maze later avoided the arm which would result in shock to another rat.

In a study by Rice & Gainer (1962), albino rats worked to terminate the distress of another rat: bar depression lowered a rat suspended in a harness. This aiding behavior was termed "altruistic" by the authors. Lavery & Foley (1963) suggested that the Rice and Gainer results could be due to an increased activation effect due to arousal rather than to "altruism." In a follow-up study by Rice (1964), rats that were exposed to another rat being shocked did not press a bar to terminate the shock, and instead exhibited signs of fear. Wechkin, Masserman, & Terris (1964), however, found that hungry rhesus monkeys would avoid chain-pulling for food when this meant shocking another monkey. They suggested that aversion to the perceived pain of conspecifics may have ethological survival value.

The present study was concerned with whether or not rats previously trained to run a T maze for sucrose would avoid activating shock to another rat.

SUBJECTS

Twenty male Cheek-Jones albino rats, 150 days old, were assigned randomly to two groups of 10 Ss each. The Ss were caged individually, and were maintained at approximately 85% of their preexperimental body weight. They were allowed unlimited access to water.

APPARATUS

The apparatus consisted of a wooden T maze, painted flat gray. The dimensions of the stem were 35 x 5 x 5½ in.; the arms were 22 x 5 x 5½ in. Attached to the end of each arm was an end-box, 8 x 5 x 5½ in. The floor of the end-box was constructed of 1/8-in. stainless steel grid bars spaced ½ in. center to center. The floor and top of the maze and the arm/end-box partition consisted of ¼-in. hardware cloth. The end-box tops were hinged, clear plastic lids. A goal cup (aluminum teaspoon) was placed at the end of each arm, centered on the arm/end-box partition 1½ in. above the floor. The rats' depression of a 6 x 4-in. wooden panel located on the floor of each arm, midway between the choice point and the goal cup, completed a circuit to the grid floor of each end-box. A SPDT slide switch determined which end-box grid was to be electrified by a fused, variable voltage autotransformer through a 10-K fixed resistor.

PROCEDURE

All Ss were given four training trials on each of 7 days, with 30-min intertrial intervals. The first two trials were free choice, which consisted of a run to either goal cup, which always contained 0.2 cc of a 16% sucrose/distilled-water solution. To equate each rat's experience with the two arms of the maze, the second two daily trials were forced by closing one of the arms with a metal partition at the choice point. Both end-boxes contained a "victim" rat during all trials, and new "victim" rats were substituted every 10 trials.

All Ss were given four testing trials per day for 7 days, following the same procedure as during training, except that for

half of the Ss, a turn to the right activated a 0.5-mA shock to the rat in the right end-box, and for the other half of the Ss, a turn to the left activated shock to the animal in the left end-box.

RESULTS

Free choices were recorded for all 19 Ss (one animal died at the beginning of training), during both the training and the testing trials. Figure 1 presents the number of times the "shocked" side was chosen on the last day of training and on each of the 7 days of testing. Over all Ss, the percentage of choices of the shocked side dropped steadily from 58% at the beginning of testing to 31.5% at the end. A statistical comparison of the number of animals choosing the "shocked" side on the last training trial and on the last testing trial indicated that this decline was significant (chi square = 3.8, $p = .05$).

DISCUSSION

Rats in a T maze tended to avoid running down the arm which would result in shock to another rat. There was a temporary increase in running to the shocked side noted on the second testing day which may have been due to the activation effect suggested by Lavery & Foley (1963). The general trend, however, as in the Wechkin, Masserman, & Terris (1964) study, was to avoid distressing a conspecific. In the Rice (1964) study, the rats were unable to avoid the shock onset and reacted with fear to the sight of another rat being shocked.

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