Conditioning effects on two apparatuses¹

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Nineteen 6 and 7 year old boys were conditioned on two apparatuses (marble box and gun). Social reinforcement was given by a 20 year old woman. Significant preference change ($p = .05$) was produced on both tasks; however, the correlation between the Ss' conditioning scores on the task was $-.09$.

Social responsiveness has become a popular concept in the study of personality development. Numerous studies have been carried out using change in preference or rate on a motor task after some type of social reinforcement as an indicator of social responsiveness (Gewirtz & Baer, 1958; Patterson & Anderson, 1964; Horowitz, 1962; Levine & Simmons, 1962). The generalizations made from the data provided by the above studies pre-suppose that measures of change in response strength are equivalent, independent of the type of instrumental conditioning apparatus. If there is such a variable as generalized social responsiveness then there should be a high positive correlation between conditioning scores on different apparatuses.

Method

The Ss were 19 6 and 7 year old boys. The reinforcing agent was a 20 year old woman.

Apparatus I was a marble box, adapted from Gewirtz & Baer (1958), which had two holes at the top and was 8 in. high and 8 by 10 in. wide. The two holes were $\frac{3}{4}$ in. in diameter and placed 1 in. apart. In a tray at the base of the box were 20 blue glass marbles. The box was located on a level platform adjusted so that the base was approximately waist level for S. Apparatus II consisted of a gun which S fired at a target projected on a screen approximately 5 ft. in front of S. The gun was mounted on a stand which also contained the projector that projected the target slide onto the screen. The gun projected a light-ray with which S aimed. When he pulled the trigger, a buzzer sounded and side preference was recorded on an Angus Esterline Tape. A 22 ft. "rehabilitated school bus" served as a laboratory and was taken to the school.

S was brought into the mobile laboratory, and told to sit on the seat behind the gun. He was given the following instructions: "This is a game we want you to play. You are to shoot this gun at the pictures of animals which will appear on the screen. There will be two animals in each picture, but you are to shoot only one and take only one shot per picture. You can shoot either animal. After you have shot, return the light ray to the center of the picture. Take your shot quickly, as soon as the pictures come on the screen. Keep shooting as long as the pictures come on the screen

or until I tell you to stop. Sit back, relax and aim with the light ray. Do you understand? You can start shooting as soon as a picture comes on the screen."

S was given 40 shots for the base operant period. Then the reinforcing agent, who sat on the bench beside him, gave him 20 reinforcements on the least preferred side (determined during the base operant period) and 10 reinforcements on a variable 4:11 schedule. The reinforcing agent was given a signal through a microphone on the appropriate trials. The reinforcements consisted of the following words: Good, Fine, Good Shot, Got Him, and Very Good.

The next task was the marble box. The S was told to stand behind the box and was given these instructions: "This is the other game we told you about. What I want you to do is drop the marbles into these holes. Pick up just one marble at a time and drop it into either one of the holes. You may use either hand but only one hand at a time (demonstrates). Now you do it. (Subject drops a few marbles for practice). That's all there is to it. Remember, either hand, either hole; but just one marble at a time; and keep dropping marbles until I tell you to stop. Okay, begin."

A 100 trial base operant period was given, then 20 1:1 and 10 4:11 reinforcements were given on the non-preferred side. The reinforcements consisted of: Good, Fine, Very Good, Okay, and Great.

The measure of preference change on both the gun and marble box was obtained by computing the proportion of responses on the non-preferred side every 20 sec. and computing the median proportion for the base operant period and the experimental period. The difference score for each individual on both apparatuses was converted to a T Score (Patterson & Hinsey, 1964).

Results

Both apparatuses produced significant change ($p = .05$) in the preference behaviors of S. However, the correlation between the two difference scores was $-.09$. The prediction that the gun and marble box would be highly correlated was disconfirmed.

Discussion

The finding that social responsiveness is not independent of type of apparatus is disappointing. Patterson & Hinsey (1964) found a .75 correlation on test-retest using the marble box, suggesting that the conditioning by social reinforcers can be stable when all parameters are held constant. The effects of apparatus, reinforcing agent, and schedules of reinforcement should be better understood before further theorizing and experimentation are done with social responsiveness (defined by conditioning scores).

References

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Note

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Erratum

Rieber, M. Response alternation in children under different schedules of reinforcement. *Psychon. Sci.*, 1966, 4 (4), 149-150.—On page 149, second column, second paragraph, beginning with the sixth line, the text should read: "The second group (50%A) was rewarded on every other trial. On rewarded trials M & M's were placed under both blocks. The third group (50%R) received . . ."