

## **The Effects of Positive Reinforcement, Attributions, and Punishment on Model Induced Altruism in Children**

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Abstract. The effects of positive reinforcement and punishment on model induced altruism was assessed on the subsequent generosity of 60 boys aged 8-11 in relation to a no reinforcement control. This study employed an anonymous test of the child's generosity and did so on both an immediate and a delayed test. Positive reinforcement led to increased generosity while punishment led to a decrement. These effects endured over the two week retest but did not generalize to a different task. In the positive reinforcement condition, three different attributions provided to the child for his generous behavior failed to have a differential effect. A small amount of consistency was found for individual differences in generosity. Further, older children were more generous than younger ones.

Two of the most powerful techniques for producing behavior change are reinforcement and modeling (Bandura, 1969). Both of these techniques have been applied to the socialization of altruistic behavior in children. For example, modeling has been clearly shown to effect the amount, the direction, the durability, and the generalizability of altruistic behavior in both laboratory and naturalistic settings (Rushton, 1976). However the data on the effectiveness of reinforcement is considerably more limited. While several studies (e.g., Gelfand, Hartmann, Cromer, Smith, & Page, 1975) have shown that positive reinforcement can increase children's generosity while the child is in the presence of the socializing agent, none have shown that such generosity is maintained when both the reinforcement and the socializing agent are withdrawn. Since it is only in the latter situation that strong inferences of "internalization" are made, this study addressed itself to this situation. Furthermore no previous study had addressed itself to the effects of punishment on pro-social behavior.

An additional question of interest to this study was the potential role of attributions in determining the effectiveness of the contingent reinforcers. Recent theorising, for example by Ross (1976), has suggested that reinforcement contingencies will have different effects depending on what the child attributes his behavior to. Ross (1976) reviewed literature suggesting that rewarding behavior in children can actually lead to a decrease in the behavior if the child reattributes his or her behavior from one that is occurring because it is "fun", to one that is occurring because it receives an external reward. In the study to be reported here, we attempted to vary the causes a child could attribute his generosity to (in the positive reinforcement condition only). We attempted to lead the child to attribute his generosity either to the type of person he was or to the external situation. It was predicted that more internalization would occur when the child attributed his behavior to the type of person he was than when he attributed it to the external situation.

## METHOD

Participants. Sixty 8 to 11 year old middle-class boys drawn from a school servicing both urban and rural homes were divided into six groups equated for age.

Assessment of person variables. Each child went individually to a mobile trailer. The experimenter, an undergraduate in her mid-twenties asked the child questions dealing with his age, number of siblings, pets, etc. The child was then shown a number of prizes and asked whether he would like to win one. He was taken to the "gamesroom" where several games had been set up.

Manipulation of the independent variables. The child was shown a bowling game, described more fully in Rushton (1975), on which the player won tokens later exchangeable for a prize. The game was pre-programmed so that each player won 32 tokens. At one side of the game was a charity poster and a donation bowl containing 20 tokens. The child was told that "poor little Bobby" (the child on the poster), had "no Mommy or Daddy or anyone to look after him" and that if he wanted to he could share some of his tokens with Bobby. The experimenter played the game until she had two winning experiences. On these occasions she gave half her winnings to Bobby saying "Two for Bobby, two for me." The child was then invited to finish the game while the experimenter watched. The experimenter stood near the child and it was intended that her close presence and the fact that she had modeled sharing would induce generosity on the part of the child. This it succeeded in doing. On the six occasions that the child won tokens and shared with Bobby, the experimental manipulations were effected. Positive reinforcement and self-attribution. After the first instance of sharing the experimenter questioned the child as to why he had shared and elicited the information that he had done so because he was being generous. The experimenter then said "So the reason you shared was because you are a generous kid. That is terrific." Positive reinforcement and no attribution. After every instance of sharing, the experimenter expressed strong approval, e.g., "Good for you," "That's really nice of you,". Positive reinforcement and external attribution. After the first instance of sharing the experimenter said "Good for you, you gave to Bobby. I'll tell you what,--if you keep sharing with Bobby, I'll let you have a turn with me on this Basketball game when you've finished." Each subsequent time the child shared, the experimenter expressed pleasure and approval. No reinforcement. The experimenter nodded encouragement at the outset of the child's playing, then turned away and did not acknowledge the sharing behavior. Punishment. At the first instance of sharing, the experimenter said "That's kind of silly for you to give to Bobby. Now you will have less tokens for yourself." If there was a second instance, the experimenter said "I think you're being silly, now you won't have as many tokens." With no child were more than three punishments necessary. For the balance of the game the experimenter maintained a neutral appearance. No model-no reinforcement control. The experimenter did not play a game at all but stood nearby and watched the child play a game.

First test of child's generosity. The experimenter offered the child another go on the game and left the room "to finish some work", leaving the child entirely alone.

Two week retest of child's generosity. Fourteen days after the first test, children were given the chance to win another prize. The children were briefly reminded of the playing instructions and the

optional nature of sharing with Bobby, and were again left alone to play.

Generalization test. Following the retest, children were given 24 candies and two bags. On one of these was written their name and on the other the name of their best friend in the school. Children were then left alone to divide their candies. As the child left the trailer, however, he was stopped and it was suggested that he leave both bags in the trailer until the end of the day "in case the teacher doesn't like candies in the class." This provided an opportunity to count how many of the 24 candies the child had shared with his friend.

#### RESULTS

First test. Out of a possible 32, the mean number of tokens donated were: positive reinforcement-self attribution 13.8; positive reinforcement-no attribution 15.6; positive reinforcement-external attribution 14.5; modeling-no reinforcement 8.2; punishment 1.8; no model-no reinforcement control 4.2. There was a highly significant overall effect due to treatments  $F(5,54) = 20.87, p < .001$ . Comparisons of the means showed that all three positive reinforcement conditions combined produced significantly more donating than modeling-plus-no-reinforcement ( $t = 4.28; p < .001$ ), but were not significantly different from each other. The punishment condition in turn resulted in less giving than the modeling-plus-no-reinforcement condition ( $t = 3.55; p < .001$ ). Further the modeling-no reinforcement condition produced more donating than the no-model control ( $t = 2.22; p < .05$ ).

Two-week retest. The mean number of tokens donated, out of the possible 32, were: positive reinforcement-self attribution 9.3; positive reinforcement-no attribution 11.9; positive reinforcement-external attribution 11.1; modeling-no reinforcement 4.9; punishment 1.4; no model-no reinforcement 4.4. Once again these were highly significant overall differences,  $F(5,54) = 5.07, p < .001$ . The comparisons between the means showed the positive reinforcement conditions to be jointly highly significantly different from the modeling plus no reinforcement condition ( $t = 2.68; p < .01$ ) but not significantly different from each other. On this two week retest the punishment condition still resulted in less giving than the modeling plus no reinforcement control, although only at a marginal level of significance ( $t = 1.32, p < .10$ ).

Generalization test. The mean number of candies for the combined positive reinforcement, neutral, and punishment conditions were 6.8, 4.4, and 5.5 respectively. There were no significant differences between these.

Person variables. Older children were slightly more generous than younger children on both the two week retest ( $r = .18; d.f. = 58; p < .10$ ) and the generalization test ( $r = 0.27; d.f. = 58; p < .10$ ). There was also some consistency across the three measures of generosity. Thus, even when residualizing the  $r_s$  (calculating within groups and then averaging in order to get rid of treatment effects) generosity on the immediate test correlated  $r = .50$  with the two week retest and  $r = .28$  with the candy sharing measure which in turn correlated  $r = .48$  with the two-week retest.

#### DISCUSSION

It is clear from this study that the verbal praise or rebukes that a socializing agent delivers to a child following that child's imitation of her, subsequently modifies that child's behavior. Furthermore, the child's behavior remains modified both in the absence of the socializing agent, and over a two week retest period. In this study we were unable to demonstrate an effect to the generalization test although this may

well have been due to providing this after two weeks rather than immediately.

Concerning the effects of the different attributions given to the child the results were non-significant. One possible explanation for this failure may be that because the model lavished praise upon the child in all attribution conditions all the children were led to make the same attribution anyway (i.e., "I must be a nice person for this adult to be standing here praising me like this and, furthermore, I must be nice because I'm giving to Bobby"). Thus if the child had already made a clear attribution about himself and his behavior as a result of the model's lavish praise, then the model's differential verbalizations of attribution would be expected to have little effect. In other words the attribution manipulations didn't work because the child had already formed stable attributions. This explanation gains credence from the results of a study by Grusec, Kuczynski, Rushton and Simutis (in press). In that study experimenter induced attributions did affect children's donations to charity, but only when the subject was perhaps relatively uncertain (as a function of experimental condition) as to why he or she had donated in the first place. Thus attributions are most likely going to work in contexts in which subjects are uncertain as to why they are behaving as they are and perhaps are even seeking out explanations for their behavior.

In regard to person variables, on the basis of much previous research (Rushton, 1976), it was expected that older children would be more generous than younger children. This relationship was confirmed in the present study, as was the fact that individual differences between children showed moderate consistency across different testing situations.

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#### FOOTNOTES

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