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Modeling, Direct Instruction, and Attributions: Effects on Altruism

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Children were induced to donate winnings from a game to charity either by having seen a model donate, by being instructed to donate, or by a combination of the two. They were subsequently either told they had donated because they must enjoy helping others, told they had donated because they thought they were expected to, or not given any reason for their behavior. There was more donation both immediately and 2 weeks later in the modeling group given a self-oriented attribution than in the modeling group given an externally oriented attribution. Attributions had no effect in the two influence procedures involving direct instruction. On a generalization test, children in the self-attribution group shared more pencils with another child than either those in the no-attribution or external-attribution group, regardless of training condition.

Socialization techniques that minimize the salience of the discipline agent have generally been favored by those concerned with parental childrearing practices (e.g., Aronfreed, 1961; Hoffman, 1970). It is believed that children who engage in a particular behavior because they fear punishment if they do not will be less likely to adopt that behavior as their own than will children who are less conscious of external pressure. In this way, it has been assumed that a procedure such as reasoning, because it minimizes the perception of external pressure, is more likely to lead to the internalization of parental standards than is the use of physical punishment or the withdrawal of material rewards or privileges.

Attribution theory provides a mechanism that handles the problems of internalization nicely, and theorists increasingly appear to be trying to understand moral behavior in its terms. Recently, Dienstbier, Hillman, Lehnhoff, Hillman, and Valkenaar (1975) have suggested that although the negative emotional states associated with punishment remain much the same over an individual's life span, the causal attributions made about these states can change; and they feel that it is these attributions that determine subsequent behavior. Thus, if children attribute anxiety after deviation to fear of being found out and punished, they should be less likely to suppress deviation when there is no chance of detection than if the anxiety is attributed to the knowledge that personal standards of behavior have been violated. Walters and Grusec (1977) suggest that individuals who perceive they have behaved in a certain way independent of external coercion, and who therefore attribute the behavior to their own morality rather than external pressure, will be more inclined to continue behaving in the same way than those who attribute their conformity to external pressure. Obviously, any technique of discipline that minimizes the perception of external pressure and coercion, such as reasoning, would therefore be more likely to lead to adoption of a given moral standard.

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It is not only reasoning, however, that minimizes impressions of coercion. According to an attribution analysis, any means of producing conformity that makes it difficult for individuals to find external reasons for their behavior should be successful in producing internalization. One obvious candidate for this is modeling. There is ample documentation in the research literature of the fact that children imitate. Yet, just as researchers appear to be undecided on why the matching of another's behavior occurs, it seems plausible that those who imitate may also be confused about the reasons for their matching behavior. While children who are told to do something can easily recognize that they conformed because of fear of disapproval if they did not, it may well be that those who imitate another person's behavior are less sure about why they did so.

If our reasoning is correct, then, modeling should be a more effective technique for producing internalized behavior change than instructions on how to act. This is so because modeling should be less likely to lead children to attribute their behavior to external pressure than would direct instruction. We would particularly expect modeling to be superior to direct instructions on delayed and generalization tests, that is, on tests that are removed from the direct external pressure conveyed by instructions. For that reason, such tests were incorporated within this study.

As well as predicting that modeling should be more effective than direct instruction (if not immediately, then after a period of time has elapsed), our position also leads to the prediction that behavior induced by modeling should be more amenable to the manipulation of causal attributions than behavior induced by direct instruction. Indeed, this was the major hypothesis of the present study. Children were induced to donate some winnings from a game to poor children, either through the provision of an altruistic model or by being instructed to donate. It was then suggested to them that they had donated for one of two possible reasons. The first reason attributed their donating to their own altruistic motives (self-attribution). The second attributed it to the fact that they were with someone who expected them to (external attribution). In addition, some children were not provided with any reason for their behavior. We predicted that (a) since only the modeling condition could produce uncertainty in the child as to why he or she had given, it was only this condition that would be affected by the attributions; and that (b) within the modeling condition, greater donation would occur among children in the self-attribution than in the external-attribution group. Further, although we made no specific predictions, we felt it possible that predicted effects might not occur until a later time because of a strong effect of direct instruction that might still affect immediate behavior.

A third group, one in which modeling and direct instruction were combined, was included in the design. Recently, Lepper, Sagotsky, and Mailer (1975) have reported that a combination of modeling and direct instruction is as effective in inducing children to adopt high standards of self-reward as is modeling alone. Possibly, the inclusion of a model who shared might make the reasons for sharing slightly more ambiguous even in the presence of direct instruction. Thus, we felt that an attribution for sharing that referred to the child's own altruistic motives might have a greater chance of acceptance in this condition than in a direct-instruction-only condition; the prediction was made that the direct-instruction-plus-modeling condition might be more affected by causal attributions than a direct-instruction-only condition and, overall, be somewhat more effective in producing sharing.

To test the generalizability of effects from the donation training situation, children were also given the opportunity to share some pencils they had won with other children in their own school. Because the reasons for any sharing that occurred in this situation would be unclear—it was divorced from the donation situation, the training agent was not involved in it, and no instructions to share had been given—we believed that an effect of attribution would be obtained here that would hold regardless of the original training situation.

Method

Subjects

Subjects were 63 boys and 63 girls, ranging in age from 7 to 10 years. They attended a school in the suburbs of a large city that served a mixed-income area. Two males, each in their early twenties, served as experimenter and model. The follow-up was conducted by a female experimenter in her middle twenties.

Design

A 2 × 3 × 3 × 2 factorial design was employed with sex, training technique (modeling, instruction, modeling plus instruction), and attribution (self, external, none) as between-subjects factors and session (immediate and 2-week follow-up) as a within-subjects factor. Seven children were randomly assigned to each group, except that the same age range of subjects was used in each group.

Procedure

Phase 1: Experimental manipulations. Children were sent individually from their classrooms to a research trailer parked in the school yard. The experimenter introduced himself, and at this point, the model entered the room. He was introduced as an employee of the Treadway Toy Company who was using the room to test some new toys. The experimenter then excused himself to return to his own work and left the room. The model showed the child a miniature bowling game that was .91 m long, with an upright panel at one end containing lights numbered from 10 to 80. The child was told to roll a ball down the length of the game, and when he or she received a score of 70 or 80, two marbles would appear from the game. Although the game was described as one of skill, scores were, in fact, preset from a control panel located in the next room. Children were instructed to collect the marbles they won in a bowl and exchange them at the end of the game for a prize, with better prizes available for greater numbers of marbles. Thus, they were urged to win as many marbles as they could. The children were also shown a variety of attractive toys in order to increase even further the meaningfulness of the marbles. Beside the bowling game was a picture of a poor child with the caption "They need help," and a bowl containing a large number of marbles. The model stated that prizes were being collected for poor children and that subjects could give some of their marbles to these children if they wished.

In the low-certainty modeling condition, the model said he and the subject would take turns playing the game, and that he would go first. He bowled 20 trials, winning on 8 of them. After the first winning trial, he stated he was going to give one marble to the poor children so they could win prizes too and put one of his marbles in the poor children's bowl. Subsequently, on each winning trial, he gave one marble to the poor children and kept one marble for himself.

When it was the child's turn to bowl, the model stood beside him or her without saying anything. The child bowled 20 trials, winning on 8. If a subject did not share, he or she was told the first time, "If you want to, you can give one of your marbles to the poor children" (this was necessary for three children). The second failure to share was followed by, "Would you like to give one of your marbles to the poor children again?" (this was necessary for one child).

In the high-certainty instruction condition, the model did not bowl. He said to the child, "Now I want you to share one of your marbles with the poor children each time you win. Start to play." After the first, third, and seventh winning trials, the child was again instructed to share. Since all children did share, no other prompts were given.

In the high-certainty instruction–modeling condition, the model bowled as in the low-certainty condition, donating half his marbles to the poor children, and then instructed subjects just as he did in the instruction condition to donate half their winnings to the poor children.

One third of the children in each of these conditions were given one of three attributions after they had finished bowling and had donated half of their 16 marbles to the poor children. In the self-attribution condition, the model said, "You shared quite a bit. I guess you shared because you're the kind of person who likes to help other people. You must really like to help others. Yes, for sure you're the kind of person who really enjoys helping other people out." In the external-attribution condition, the model said, "You shared quite a bit. I guess you shared because you thought I expected you to. Yes, you're right. When I'm here with people playing the game, I expect them to give while I'm watching." And in the no-attribution condition, the model said, "You shared quite a bit."

Phase 2: Internalization test. For all subjects, the experimenter came into the room and told the model he was needed to go to another school to repair a game. The experimenter's offer to test the toys was accepted, and the model exited. The experimenter suggested that the child play another game and, when he or she was finished, to knock on the door at which time it would be possible to trade the marbles in the child's bowl for a prize. He appeared to notice the poor children's bowl and told children they could share their marbles if they wished to but that they did not have to. The experimenter then went into the next room and firmly closed the door. Subjects bowled another 20 trials, winning on 8 of them. The number of marbles they donated to the poor children was observed through a one-way mirror.

Phase 3: Generalization test and termination of first session. After the children knocked on the experimenter's door, their marbles were counted and they were allowed to choose one of a variety of prizes. They were also given 12 colored pencils for coming to the trailer and told that if they wished, they could place some of these pencils in a covered cardboard box for children in the school who would not have the chance to come. The experimenter turned his back in order to fill out a paper and told subjects to put their pencils in a bag that had been provided and, if they wanted, to place some in the collection box. Children were then asked not to discuss

any of the activities in the trailer with other children in order not to spoil the toy-testing research. Reports from teachers indicated that the children maintained silence about the study. Prizes were given out after all the children in a given classroom had been to the trailer.

Phase 4: Follow-up. Approximately 2 weeks after they had been to the trailer (and several days after they had received their prizes), children were sent individually to the trailer where they were met by a female experimenter whom they had not seen before. She told them they would have a chance to play the bowling game again and to win another prize. Children were then left alone and allowed to bowl 20 trials, winning on 8 of them. The room was identical to the room in the first part of the study, except for the absence of the pencil collection box. The number of marbles the children shared was again observed through a one-way mirror. At the end of the game, they were allowed to trade in their marbles for another prize. They promised once again not to discuss the study with others, and prizes were not given out until all children in the class had been to the trailer again.

Results

Donation

The mean number of marbles donated by children in each training and attribution condition on both the immediate and delayed tests is presented in Table 1. Analysis of variance of these donation data, with training, attribution, session, and sex as factors, yielded no main effects. There was a statistically significant interaction between attribution, kind of training, and session, $F(4, 108) = 2.53, p < .05$, so tests of the simple effects involved in the interaction were undertaken. If we look first at the low-certainty modeling condition, it appears that in the immediate test, children in the self-attribution group donated more than those in the external-attribution group, $t(108) = 2.84, p < .01$. The difference between the self-attribution and no-attribution groups approached significance, $t(108) = 1.63, p < .12$, while that between the external-attribution and no-attribution groups was not significant ($t = 1.21$). Comparison of the three attribution groups on the immediate test under conditions of high certainty revealed that attribution had no effect on donation behavior in either the instruction or the instruction-plus-modeling condition ($t < 1$ in each case).

In the delayed test, there was no difference between the various attribution groups under the modeling condition because children in the self-attribution group declined from the immediate test in the mean number of marbles they donated, $t(108) = 2.82, p < .01$. If we look just at whether children donated, however, attributions still interact with training condition in the follow-up. The number of children who donated is presented in Table 1 in parentheses. There were significantly more of these in the self-attribution modeling condition than in the external-attribution modeling condition, both in the immediate test (Fisher $P = .049$) and in the delayed test (Fisher $P = .016$). The number of children who donated in the various attribution conditions did not differ within the high-certainty condition.

Numerically, the greatest amount of donation occurred in the immediate test in the self-attribution modeling group, although this group did not differ at a statistically significant level from any other group except, of course, from the external-attribution modeling group. The least amount of donation occurred in the

Table 1: Mean Number of Marbles Donated in Each Condition

	Immediate test			Delayed test		
Condition	Modeling	Instruction	Modeling plus instruction	Modeling	Instruction	Modeling plus instruction
Self-attribution	6.07 (14)	5.64 (12)	4.36 (13)	4.43 (13)	5.21 (11)	4.64 (12)
No attribution	4.14 (11)	4.36 (11)	4.86 (11)	5.14 (12)	4.50 (10)	4.36 (12)
External attribution	2.72 (10)	4.78 (13)	5.14 (14)	2.92 (7)	4.22 (10)	5.72 (13)

Note. Numbers in parentheses represent number of children donating.

external-attribution modeling group, both on the immediate and the delayed tests, although the only group from which it differed significantly was the self-attribution modeling group. The only group to decline significantly between the immediate and delayed test in number of marbles donated was the self-attribution modeling group.

The only other statistically significant interaction was that between sex, attribution, and session, $F(2, 108) = 3.10, p < .05$. Since this interaction had not been predicted, comparisons between means involved in the interaction were made using the Tukey method. The only comparison that reached statistical significance was that between the self-attribution condition and no-attribution condition for males on the immediate test, $t(108) = 2.88, p < .05$, with more donating in the self-attribution than the no-attribution condition. The number of marbles boys donated in the external-attribution condition fell between these two conditions.

Sharing

The number of pencils subjects shared with other children in their school is presented in Table 2. Analysis of variance of these data revealed a significant main effect of attribution, $F(2, 108) = 3.14, p < .05$. The self-attribution group gave away more pencils than the external-attribution group, $t(108) = 2.00, p < .05$, and more pencils than the no-attribution group, $t(108) = 2.30, p < .05$. There was no difference between the external-attribution and no-attribution groups. None of the interactions between sex, attribution, and/or training was significant.

Table 2. Mean Number of Pencils Shared in Each Condition

Condition	Modeling	Instruction	Modeling plus instruction
Self-attribution	4.22	5.79	5.64
No attribution	4.13	3.99	3.77
External attribution	4.21	4.36	4.21

Relationships Between Measures of Altruism and Altruism and Age

The residualized correlation (calculated within conditions and then averaged) between age and donation in the immediate test was .21 ($p < .10$), between age and donation in the delayed test was .16 ($p < .10$), and between age and sharing pencils was .22 ($p < .10$). Residualized correlation coefficients were also calculated between the number of marbles children donated in the immediate and delayed tests and the number of pencils they shared. These were .71 ($p < .01$) for marbles donated in the two test situations, .09 for the immediate donation test and sharing of pencils, and .04 for the delayed donation test and pencils shared. Thus, there was a tendency for sharing to increase with age, as has been shown in a number of studies (see Rushton, 1976). However, there was not—contrary to Rushton's (1976) observations—even a minimal correlation between donation and sharing in this study.

Discussion

It is clear from these data that the kinds of explanations children were given for why they had shared had an effect on whether they continued to engage in that behavior. Moreover, the effects of these explanations, or attributions, endured over time as measured, at least, in terms of whether children continued to share at all; as well, these effects generalized to another altruistic behavior. Attributions, of course, were effective in the donation situation only when children had observed a model donating. When children were instructed to donate, the number of marbles they gave to the poor children was not influenced by the reasons they had been given for their behavior. We suggest that in the modeling condition, children were unable to provide their own reasons for why they had shared their marbles, and so could be influenced by the reasons they were given. In the direct-instruction condition, they knew perfectly well why they had donated: They had been instructed to do so, and any explanations provided for them

were superfluous. These explanations appeared to be superfluous as well in the condition that combined modeling and direct instruction. Apparently, the presence of a donating model did not contribute any ambiguity to the situation.

Attributions, however, were effective regardless of training condition in a situation different from the one in which training took place. Children shared more pencils under the self-attribution condition than under either the no-attribution or external-attribution condition, no matter what kind of training they had originally been given in donation. It would appear, then, that the existence of an attribution that explains behavior in terms of some inner reason generalizes to a new but similar situation—not only when it was effective in changing behavior in the original situation but even when it was not. Thus, while children were unaffected by self-attributions for donation when they had been instructed to donate, the potential effectiveness of this attribution was not destroyed: It did modify behavior in a setting where coercion no longer existed.

The usefulness of an attributional approach in understanding the internalization of moral standards is becoming increasingly evident. Lepper (1973) found that children who complied with a prohibition under mild threat and who presumably justified their obedience by inferring they must be the kind of people who typically engage in good behavior cheated less 3 weeks later than did children who complied with a prohibition under severe threat of punishment. Miller, Brickman, and Bolen (1975) report that children littered less when their teacher employed an attribution strategy that stressed that they were the kind of people who were neat and clean rather than a persuasion strategy that stressed that they ought not to litter. And in the present study, we found that children could be induced to behave more altruistically if they were able to attribute their good behavior to the fact that they were the kind of people who cared for others. This convergence of evidence relevant to the role of attribution processes in three kinds of moral behavior—cheating, concern for the environment, and altruism—is compelling and indicates that any theory of how moral standards come to govern behavior independent of external surveillance and pressure must take attributional phenomena into account.

One surprising feature of the data reported in this article was the substantial amount of donation that occurred in the direct-instruction conditions, even in the delayed tests. We expected that modeling would be better, on the whole, than direct instruction, but it was not. White's (1972) finding that direct instruction was better than modeling in an immediate test and no worse than modeling in a delayed test, as well as the Lepper et al. (1975) report of no difference between modeling and modeling-plus-direct instruction, would indicate that ours is not an isolated outcome. This failure to find less donation in direct instruction than in modeling conditions is puzzling; it attests, if nothing else, to the desire to comply that apparently exists in the experimental paradigm we have used here. Were one to employ a situation in which children felt freer to deviate, the expected superiority of a modeling condition in all but an external-attribution condition might well have emerged.

The one finding that we have not yet discussed is the significant interaction between sex, attribution, and session. This finding, however, is somewhat difficult to understand, and barring its replication, it would seem wise to disregard it.

In conclusion, much has been made of the possibility that models do little more in donation studies than provide information to children about how they should behave in a strange situation (e.g., Kuhn, 1973). Thus, it has been maintained that telling children to do something should have exactly the same effect on their behavior as having them watch someone actually engage in the behavior. The results of this study would seem to indicate that this is not the case. Quite clearly, observation of a model is a rather more ambiguous event than is being told what to do, in the sense that children's perceptions of why they acted as they did can be more easily manipulated. In this way, modeling appears to be an excellent candidate for a successful socialization technique, that is, one which minimizes the salience of the

external agent and feelings of external pressure.

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