

Socialization and the Altruistic Behavior of Children

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The recent research into altruistic behavior by children is reviewed under four main headings. The first concerns the generality of children's social altruism, and an average correlation of .3 appeared to be representative across behavioral situations. The second section concerns person variables with particular emphasis on age and the cognitive-developmental variables of moral judgment and role taking. The third heading concerns environmental variables and involves more or less direct attempts to demonstrate socializing processes at work. The items dealt with are reinforcement, the role of models, training in role taking, and verbal socialization procedures such as preaching and induction. Finally, theory is considered with particular emphasis on the theories of social learning and cognitive development.

Since Bryan and London's (1970) review, research has proceeded apace into the determinants of altruistic behavior by children. One reason for this continuing interest is, no doubt, that altruism, defined generally as behavior carried out for the benefit of another, seems particularly important for understanding socialization processes. It will be a scientific theory of very real consequence that will account for how it comes about that a being, brought into the world with apparently no other thought than its own gratification, eventually becomes capable of living its life with concern for others. If it were possible to specify some of the necessary and sufficient conditions that produce altruistic children (and adults), it would be an excellent indication that we were well on our way to a general theory of the socialization process. The present review attempts to gauge how far we have progressed in the last few years toward providing such a theoretical account.

Prior to attempting to review this progress, it might be beneficial to consider what has been meant by "altruism" in the literature. Most researchers would probably accept Macaulay and Berkowitz's (1970) conceptual definition of altruism as "behavior carried out

to benefit another without anticipation of rewards from external sources" (p. 3). On the other hand, most researchers have generally avoided the question of establishing the intentions behind the act by employing relatively narrow operational definitions within a context that allows for a reasonable inference of behavioral altruism (e.g., donating to a charity in an anonymous situation; sharing candies with an absent friend). Researchers do not directly investigate what the intention was behind the child's actions. As Krebs (1970) has discussed, this omission could be a serious problem because it is usually the intention behind an action, rather than the action itself, that determines its moral value. This would be particularly critical if one's definition of altruism were to rest upon a particular motivational basis, as Aronfreed's (1970) and Hoffman's (1976) do on the concept of empathy. Other possible categories of altruism might include (a) normative, as when a child shares a toy because he or she feels it is expected by another; (b) reciprocal, as when a child shares a toy in the hope of later borrowing the friend's toy; (c) principled, as when a child shares a toy in order to live up to a principle within himself or herself that prescribes a generalized "ought"; and (d) fairness or justice, as when a child shares a toy in order to restore a specific equitable situation within himself or herself. Very rarely, however, have these various possible motivations been

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taken into account in choosing the dependent variable.

For example, in one study (Emler & Rushton, 1974), 7- to 13-year-old children were given an opportunity to donate tokens they had won to a charity under conditions of high or low sympathy eliciting instructions. Such instructions might be thought to presume an empathy-sympathy motivational basis. On the other hand, the dependent measure of donating to a child on a charity poster might be considered to be tapping more of a normative or principled motivation than a sympathetic one, a conclusion supported by some of the data in the Emler and Rushton (1974) study. If consideration of the motivational base does not occur, it could make the comparability of dependent measures (based on different motives) somewhat problematic. Thus, donation to a charity for a 7-year-old might not be motivated by the same reasons as 11-year-olds. Similarly, donations to a friend, for all ages, might be quite different from donating to a charity.

Perhaps such postulated motivational differences in producing altruism only become important, however, when antecedent conditions (independent variables) cease to have the same effect across alternative measures of altruism (dependent variables). There is thus a case to be made for the operational equality of behavioral measures with the argument that needless proliferation of "types" of altruism will only confuse the issue. According to this latter point of view, types of altruism need be distinguished only when irregularities in the empirical relationships, hopefully being discovered between independent and dependent variables, require it. There is some truth to both points of view. If truly systematic exploration of relations between independent and dependent measures was being undertaken across several measures of altruism, one could sympathize with the strict operationalists. However, to the degree that research is being carried out in relative innocence of the wider issues involved, a change is perhaps necessitated.

The measures of altruism that have been used include the following: (a) donating possessions to a charity or to another child, (b) experimental measures of helping and

rescue behavior, (c) consideration for others in competitive game situations, (d) teacher and peer sociometric techniques, and (e) naturalistic observation of helping and sharing behavior. We turn now to an examination of the relationships that have been found among these measures.

THE GENERALITY OF CHILDREN'S ALTRUISTIC BEHAVIOR

To test the hypothesis that generosity was part of a pattern of prosocial moral characteristics including kindness and cooperation, Rutherford and Mussen (1968) initially sampled 63 middle-class 4-year-old boys. A generosity score was found for each child based on the number of candies given away to a friend. On this basis the initial sample of 63 was divided into 14 nongenerous children who gave no candies away at all and 17 highly generous children who gave away a large proportion of their candies. These extreme groups were then found to differ in a variety of ways. Specifically, teachers rated the generous children as more generous, more gregarious, less competitive, less quarrelsome, more kind, and less aggressive than the nongenerous children. In addition, a behavioral measure of competitiveness based on a car-racing game showed the generous group to be less competitive than the nongenerous group.

In a subsequent study, these same authors and their colleagues (Mussen, Rutherford, Harris, & Keasey, 1970) studied 95 children aged 11-12 years. Four measures of prosocial behavior were used: (a) an honesty factor derived from a factor analysis of a sociometric questionnaire, (b) an altruism factor derived by the same method, (c) a behavioral measure of honesty (not cheating in a ray-gun resistance-to-temptation game situation), and (d) a behavioral measure of altruism (generosity in a prisoner's dilemma game). For boys, of the six possible intercorrelations among the four measures, honesty in the situational test correlated positively ($r = .29$, $p < .05$) with the honesty factor derived from the sociometric questionnaire; the altruism sociometric factor was reported as unrelated to the altruism situational behavior; and the remaining four possible correlations were unreported. For girls, the honesty sociometric

factor was positively associated ($r = .27$, $p < .05$) with the honesty situational behavior; the altruistic situational behavior was reported as unrelated to the altruistic factor derived from sociometric judgments, the honesty factor, or the behavioral test of honesty; and the remaining two possible correlations were unreported. Any support for generality that might have appeared among the 4-year-old boys studied by Rutherford and Mussen (1968) had certainly disappeared by the age of 12 (Mussen et al., 1970).

A study by Rushton and Wiener (1975) also looked at the pattern of generality at different ages. The following three behavioral measures of altruism were taken from 30 seven-year-olds and 30 eleven-year-olds: donating tokens to a charity, sharing candy with a friend, and a competitiveness score from a car-racing game. These last two measures were the same as those used by Rutherford and Mussen (1968). For both ages combined, generosity to a friend related positively ($r = .24$, $p < .05$) with generosity to a charity, and negatively ($r = -.55$, $p < .001$) with competitiveness. Age differences were also found. The negative correlation between competitiveness and generosity to a friend declined sharply from the 7- to the 11-year-old samples ($r = -.63$, $p < .001$ to $r = -.39$, $p < .05$), whereas the positive relationship between generosity to a friend and generosity to a charity rose from the 7- to the 11-year-old groups ($r = .19$, ns to $r = .40$, $p < .01$). For neither age group was competitiveness related to generosity to a charity.

Dlugokinski and Firestone (1973) also attempted to determine whether altruism, or as they termed it, "other-centeredness," was a generalizable phenomenon. From 164 children, aged 10 to 13, they took four measures: a pencil-and-paper measure of how one understood the meanings of kindness; a pencil-and-paper measure of the relative importance of altruistic as opposed to selfish values; sociometric peer ratings of considerateness and selfishness; and a behavioral measure concerned with donating money to a charity. The six possible correlations were all positive and ranged from .19 to .38. Further, the authors reported, multiple correlations of any three variables as predictors of the fourth ranged

from .42 to .51. In a later paper, Dlugokinski and Firestone (1974) replicated these relationships.

Rubin and Schneider (1973) took two measures of altruism from 55 five-year-olds. One, a measure of generosity, consisted of donations of candy to a charity. The other, a measure of helping behavior, consisted of the amount of work done for a peer. These two measures were positively intercorrelated ($r = .40$, $p < .01$). On the other hand, Green and Schneider (1974) failed to find any significant relationships between three measures of altruism taken from 100 boys aged 5 to 14. Their measures of altruism were sharing candy with other children, picking up dropped items for the experimenter, and volunteering free time to work with needy children.

Three recent studies have examined the relations among children's naturally occurring altruism. Krebs and Sturup (Note 1) report a study of 23 seven- and eight-year-old children. Three altruistic coding categories were used: offering help, offering support, and suggesting responsibly. Offering help was found to correlate .21 with offering support and .09 with suggests responsibly, which in turn correlated .24 with offers support. A somewhat higher correlation was obtained when a composite behavioral altruism score was calculated on the basis of the three preceding measures. This composite score correlated .47 ($p < .01$) with an independently derived teacher rating of the child's overall altruism. Hansen, Goldman, and Baldwin (Note 2) carried out a naturalistic investigation of the altruistic behavior of children having four observers code some 150 incidents over 40 hours of observation on 23 four-year-olds in a university preschool. These authors, however, failed to find any evidence for generality across such coded situations as responding to distress, sharing material possessions in response to requests, and giving unsolicited help on tasks. Finally, Yarrow and Waxler (1976) carried out a study with 108 children aged 3 to 7 that involved both experimental and naturalistic measures of prosocial behavior. Six experimental measures were taken from two separate adult-child play periods and three naturalistic measures were taken from observations of the child during "free-

play." The experimental measures involved two measures of sharing, two measures of helping, and two measures of comforting all concerned with the interaction between the child and the experimenter. The naturalistic observations concerned child-child interactions and were also coded into categories of sharing, helping, and comforting. Unfortunately, the authors did not report any of the first-order correlations between their nine measures of altruism. Instead they point out that in the experimental situation "scores on sharing" (presumably the two measures combined) correlate .32 with "scores of comforting," although neither sharing nor comforting was related to helping. In addition, if sharing in the experimental situation were combined with comforting in the experimental situation, then this combined score related to a similar combined sharing-comforting score from the naturalistic data ($r = .29$).

It would appear from the studies reporting data on the generality of altruistic behavior that Mischel's (1968) magic number of .3 once again emerges as the overall representative intercorrelation. A number of points, however, might be raised in connection with the generality versus specificity of behavior controversy.

First of all, the low correlations across behavioral situations are usually found when one specific task is correlated with one or more other specific tasks. This might not be the best way of approaching the problem. It is possible that if a battery of behavioral tasks were given, individual differences in subsequent behavior might then become more predictable. This predictability would be expected if random error variance in each situation averaged itself out—an expectation made explicit in psychometrics where generally the more items there are in the test, the higher the reliability. Certainly combining tasks led to the highest correlations in the Dlugokinski and Firestone (1973, 1974), Yarrow and Waxler (1976), and Krebs and Sturupp (Note 1) studies.

A second point is that there might be individual differences in both the amount and the patterning of the generality versus specificity of the behavior under consideration. In an extreme case, for example, a priest might be

expected to show more generality in his altruistic behavior than a 7-year-old boy.

Finally, referring back to the opening remarks on the possibility of different motivational systems operating for altruism, it might be that higher correlations would be found if measures were taken *within* motivational systems rather than *across* them. Thus, it may be that an individual behaving altruistically as a result of principled reasoning may show generality across situations that tapped that moral principle but show specificity of behavior if measured in situations that tapped, say, sympathy. These are empirical questions to be left to future research. From the present vantage point, however, the interrelationships between children's altruistic behaviors are of the magnitude of .3.

The question then emerges as to whether such a correlation is more indicative (a) of a general trait (either within or between different categories of possible altruistic motivations), of which there are underlying dispositions, or (b) of situational specificity. There is no ready answer to such a question. A figure of .3 can be used to support both a generality and a specificity point of view. It suggests that there are some common determinants of the measures of altruism. Whether these common determinants are artifacts (response tendencies, observer biases, halo effects, or uncontrolled variables such as IQ), internal dispositions (traits, such as empathy, or cognitive structures, such as role playing schemata), or common environmental controlling conditions (model, cue, and reinforcing stimuli), remains to be decided.

On a methodological note, it is encouraging to see the increasing diversity of approaches to the problem of altruism. The experimental laboratory is still the major source of data gathering (and is still being criticized, not always justifiably, as artificial and subject to demand characteristics). The experimental approach continues to be supplemented by pencil-and-paper "personality" measures and sociometric judgments. In addition a number of recent studies have begun to describe naturally occurring altruism in children. Such studies might prove exceedingly useful in the future, both in providing information about how children behave in a variety of settings,

and also in testing the generalizability of experimental hypotheses. It is, of course, likely that all approaches are valuable at this point in the discipline. Problems inherent in one method (demand characteristics in laboratory experiments and observer bias in naturalistic studies) can be counterbalanced and the findings validated by the use of alternative approaches.

PERSON VARIABLES

Age

A very recent study by Rheingold, Hay, and West (in press) demonstrated that a form of sharing is present in children as early as the first 2 years of life. Many other studies have found that children's sharing increases over the age range of 6 to 12 (Elliott & Vasta, 1970; Emler & Rushton, 1974; Handlon & Gross, 1959; Harris, 1971; Midlarsky & Bryan, 1967; Rosenhan, 1969; Rushton, 1975; Rushton & Wiener, 1975; Ugurel-Semin, 1952; Wright, 1942). In addition, Green and Schneider (1974) showed that measures of helping also increased with age. Not all studies, however, found increases over this age range. Staub (1970), for example, found a curvilinear relationship with age in rescuing behavior. While rescue behavior, in general, increased over the age range of 4 to 9, it tended to fall off sharply at age 11. Furthermore, a number of studies have shown that competitiveness rather than cooperativeness increases with age, at least in Anglo-American cultures (Kagan & Madsen, 1971; Madsen, 1971; Madsen & Connor, 1973; Rushton & Wiener, 1975). Finally, Hartshorne, May, and Maller (1929) and Yarow and Waxler (1976) found no relationship between prosocial helpfulness and age.

Cognitive-Developmental Variables

That sharing behavior appears to increase over the period of middle childhood has led to widespread suggestions (e.g., Bryan & London, 1970; Krebs, 1970; Rosenhan, 1969, 1972; Wright, 1971) that such age changes in behavior might be linked to cognitive-developmental changes, particularly changes in role-taking capacity and the basis of moral judgment. It appears that middle childhood does see significant increments with age over

this time period in these areas of cognitive functioning. Flavell, Botkin, Fry, Wright, and Jarvis (1968) found, over a range of role-taking tasks, evidence of a developmental shift from an "egocentric" to a "reciprocal" perspective during the period of 7-14 years of age. Piaget (1932) has documented movement over the same age period in children's moral judgments which are viewed as showing a progression from an egocentric perspective, based on authority and punishment, to one based on cooperation, concern for the other's intentions, mutual respect, and awareness of the other. Thus, the idea that prosocial behaviors, such as generosity, might be mediated by cognitive-developmental processes, such as role taking and moral judgment, is an intriguing one. Some recent research has addressed itself to this question.

Moral judgment. Rubin and Schneider (1973), studying 55 seven-year-old children, found a relationship between moral judgment, assessed by the children's responses to a number of moral-conflict stories, and two different measures of altruism. Moral judgment correlated $r = .31$ ($p < .05$) with the amount of candy donated to poor children and $r = .40$ ($p < .01$) with the amount of help given to a peer on a task. Emler and Rushton (1974), using moral judgment stories concerned with distributive justice, found that predictions of 60 seven- to thirteen-year-old children's anonymous donations to a charity could be made with better than chance results from knowledge of the children's level of moral judgment. Furthermore, this finding was maintained when the effect of age was covaried from the analysis.

The interesting question then arises as to whether the relationship found between moral judgment and generosity (Emler & Rushton, 1974; Rubin & Schneider, 1973) is one of causality or of covariance. Does the child's moral reasoning cause his or her moral behavior, as might generally be expected, or is some third factor accounting for the positive correlation between these responses (e.g., parents who socialize the child both to behave in a generous manner and to give particular types of moral judgment responses)? A recent study by Rushton (1975) with 140 seven- to eleven-year old children attempted

to provide some initial data on this question. It was argued that if moral judgment was a determinant of behavior rather than just a covariate, it might be expected to interact with, and affect the reception of, such social learning inputs as modeling and preaching. The behaviors and preachings of a model might be expected to have had a differential effect depending on whether they were observed by a child with a high or a low level of moral reasoning. The results of this laboratory study, which incorporated both an immediate and a 2-month delayed test, were highly interesting. First, it confirmed the expectation that there was an association between the child's moral judgment and his or her generosity, although when age was covaried from the analysis, the strength of the relationship was weakened. Second, moral judgment did not interact with the social learning inputs when the dependent variable was the child's generosity score. High moral reasoners, for example, were just as influenced by a selfish model preaching the virtues of being selfish as were low moral reasoners. On the other hand, moral judgment did interact with the social learning input when the child was asked to *evaluate* the preacher model he or she had observed. Children with a high moral judgment score rejected the selfish preacher more than those with a low moral judgment score did. Thus, moral judgment was exerting an effect. It would seem that further research in this area might have important implications for socialization theory. One possible strategy might be, for example, to attempt to differentially alter moral reasoning on one hand and moral behavior on the other. If one changes a child's moral reasoning, will this affect his or her behavior? Alternatively, will altering a child's behavior cause his or her moral reasoning to change? Or, indeed, is there no *necessary* relationship between a child's judgments and behavior?

Role taking. As regards role-taking ability and behaving altruistically, the results are more equivocal. While Rubin and Schneider (1973) found a relationship in 55 seven-year-olds between the two measures of altruism cited above and "decentration" (a measure conceptually similar to "role-taking ability"), two other studies did not. Emler and Rush-

ton (1974) failed to find a relationship between role-taking capacity and generosity using two measures of role-taking, as operationalized by Flavell et al. (1968) and shown to relate to moral judgment by Selman (1971). A study by Rushton and Wiener (1975) with 60 seven- and eleven-year-olds failed to find a predictive utility for two different measures of role-taking capacity, again taken from Flavell et al. (1968), on three different measures of altruism. On the other hand again, Krebs and Sturupp (Note 1), using the same Flavell et al. (1968) role-taking tasks as Emler and Rushton (1974), found that role-taking ability correlated $r = .46$ ($p < .02$) with a composite altruism score. In addition, positive but nonsignificant correlations were found by Krebs and Sturupp between role-taking and the component altruism scores. Additional significant correlations were found between role-taking tasks and teacher ratings of the children's prosocial and cooperative behaviors ($r = .41$ and $r = .42$, $ps < .05$, respectively). Unfortunately, in the Krebs and Sturupp study, intelligence, as measured by both formal IQ test and teachers' ratings, correlated with all measures, thus confounding the relationship between role taking and altruism. Finally, Hansen et al. (Note 2) found that a story-type task designed to measure empathy failed to predict children's behavior across the several altruistic behavior categories.

Further research using a wider range of role-taking tasks with particular emphasis perhaps on emotional role-taking (empathy) skills might prove useful. Most of the role-taking measures to date have stressed the perceptual-cognitive side of this skill. Worthwhile research also might be spent providing additional reliability and normative data on the measures of role taking. It is difficult to test hypotheses using measuring instruments of uncertain reliability.

Generalized Cognitive Development

The possibility that some more general cognitive developmental variable would predict altruism in children received no support from a study by Rushton and Wiener (1975). A battery of cognitive developmental measures had been taken from 7- and 11-year-old chil-

dren, including conservation judgments, intelligence test scores, tests of cognitive complexity, categorization responses, personal construct systems, and measures of egocentricity. Although the cognitive measures showed the expected relationships to age and IQ, none showed any degree of relationship to three different measures of altruism, including donating tokens to a charity, sharing candy with a peer, and scores on a competitive car-racing game.

This was the general finding, too, of the study by Hansen et al. (Note 2) in which the Peabody Picture Vocabulary Test and such standard Piagetian tasks as seriation and classification failed to predict children's naturally occurring altruism across such coded categories as responding to distress, sharing possessions, and giving help.

Sex

In his major review of the data, Krebs (1970) reported that out of a total of 17 studies, including some unpublished material, no sex differences were found in 11 of them. However, when sex differences were found, they tended to favor girls. This remains the general finding. An absence of sex differences in altruistic behavior was reported in a number of recent studies (Emler & Rushton, 1974; Harris, 1970, 1971; Presbie & Coiteux, 1971; Rubin & Schneider, 1973; Rushton, 1975; Rushton & Wiener, 1975; Staub, 1971a; Yarrow, Scott, & Waxler, 1973; Yarrow & Waxler, 1976; Krebs & Sturupp, Note 1). Mussen et al. (1970) did find sex differences, although not in any systematic manner. Dlugokinski and Firestone (1973, 1974) and Midlarsky and Bryan (1972) reported some tendency for females to be more altruistic than males on some of their measures.

IQ

Few studies have reported the effects of IQ on altruism. Krebs and Sturupp (Note 1) found positive relationships between both IQ tests and teachers' ratings of intelligence and different measures of altruism, including teachers' ratings of altruism. Three other studies, however, failed to find such a relationship (Rubin & Schneider, 1973; Rushton & Wiener, 1975; Hansen et al., Note 2).

ENVIRONMENTAL VARIABLES

Response Consequences

Very little research has been undertaken into the effects of the consequences of behaving altruistically on subsequent altruistic behavior. The little that has been undertaken is equivocal. While Fischer (1963) found that material reinforcement (candy) made contingent upon marble sharing in 4-year-old children produced more sharing than social reinforcement ("that's good, that's nice"), there were problems with the study. For example, data from extinction trials were not reported (showing how much sharing occurred when reinforcement was withdrawn). Furthermore, the experimenter was present throughout the study. For generosity to occur there must be an absence of such possible external reward as experimenter approval. Aronfreed and Paskal (cited in Aronfreed, 1968) showed how an adult's verbalizations of pleasure could reinforce children's self-sacrificing behavior if those verbalizations had first been paired a number of times with hugging the child. Midlarsky and Bryan (1967) replicated the Aronfreed and Paskal (cited in Aronfreed, 1968) study and showed that children so reinforced for one altruistic behavior (lever pressing carried out in the presence of the experimenter) generalized this altruism to an anonymous candy-donating situation. Unfortunately, the authors felt that the original conditioning of affect and the resultant performance curves failed to show certain expected properties and, thus, open the possibility of demand characteristics and/or experimenter effects having operated. Midlarsky, Bryan, and Brickman (1973) showed that an adult's social approval of 12-year-old children's donations to charity led to an increase in donating over no such approval. Interestingly, if the approval came from a previously selfish model, the approval appeared to become aversive and led to a depression in giving. Unfortunately, here again extinction trials in the absence of the socializing agent were not reported.

Finally, Gelfand, Hartmann, Cromer, Smith, and Page (1975) using a single subject design showed that instructional prompts and social praise could increase children's do-

nations. Once again, however, our basic criticism remains. No attempt was made to assess the effects of the durability of the independent variables in the absence of the socializing agent. For "true" generosity to be inferred, there must be no possibility of external approval from the presence of the experimenter, at least if we are to accept Macaulay and Berkowitz's (1970) conceptual definition of altruism cited earlier.

Observation of Models

There have now been many demonstrations that exposing a child to an altruistic model can enhance that child's subsequent altruistic behavior (Bryan & Walbek, 1970a, 1970b; Grusec, 1971, 1972; Grusec & Skubiski, 1970; Hartup & Coates, 1967; Presbie & Coiteux, 1971; Staub, 1971a). Furthermore, studies have shown that a model's behavior can determine not only the amount but also the direction of altruistic behavior. Harris (1970) found that 10- and 11-year-old children would share with the model if the model had shared with them, would donate to a charity if the model had done so, or would retain their winnings if that was the example they had witnessed. In a subsequent study, Harris (1971) also found that children were influenced by the model in the way in which they distributed their winnings across several charities.

Such laboratory modeling studies have often been considered by their authors to speak directly to important socializing processes operating in the natural environment. Thus, such modeling studies are often interpreted as producing new learning in observers. However, Krebs (1970) has argued that if modeling studies on altruism are to demonstrate internalized new learning, then they must demonstrate both durability over time and generality across situations. Otherwise, there is an alternative explanation of modeling studies being more a function of demand characteristics and experimenter effects.

Several studies have attempted to provide evidence of the durability and generality of behavior change following observation of a model. Rosenhan (1969) reported that the effects on 6- to 10-year-olds of observing a model and being able voluntarily to rehearse

generous behavior lasted for 7 days and, furthermore, generalized on a 3-week retest to produce more generosity in quite a different situation. Unfortunately, he failed to provide complete details of the sample, significance tests used, or the generalizable effects of the other conditions. On the other hand, White (1972) reported a somewhat similar study with 9- to 10-year-olds in which retested generosity after a 5-day delay still exceeded that of controls. Elliott and Vasta (1970) showed generalization from the modeled sharing of candy to the very similar situation in which the child had the opportunity to share pennies. They found a correlation of $r = .65$ ($p < .001$) between the two measures. Generalization did not occur at all, however, to a quite different kind of sharing (giving up a preferred toy to a stranger). Midlarsky and Bryan (1972) showed that an adult donating tokens to a charity affected children's donations of candy to the same charity 10 days later, even when the candy donations were solicited by a different experimenter in a different setting. Rushton (1975) and Rice and Grusec (1975) showed that altruistic modeling produced very strong durability in 7- to 11-year-old children's generous behavior over respectively 2-month and 4-month retest periods. Rushton (1975) also showed that the modeled behavior, whether generous or selfish, generalized across such changes in the 2-month retest situation as a different experimenter in a different locale.

Despite the impressive number of studies that have demonstrated that a person's behavior can change as a result of having observed a model, there is still uncertainty as to why this happens. Many competing theoretical accounts of the modeling process have been proposed (cf. Bandura, 1969; Gewirtz, 1969; Kohlberg, 1969), and these will hopefully generate productive research in this field in the future. Of more immediate concern however is the atheoretical criticism of most of the sources of data which psychologists might use to test between these alternative models. Critics of laboratory modeling experiments suggest that "experimenter-bias" and "demand characteristics" may account for the findings equally as well as formal theories of modeling.

One solution to this perplexing problem is to show that the processes that are discovered in the laboratory are also generalizable to the real world. This was the strategy adopted by Rushton and Campbell (in press), who studied modeling effects in the context of blood donating among adults. In that naturalistic field experiment it was shown that observing a model not only affected an immediate test of volunteering to donate blood but also affected whether blood was actually donated 6 weeks later in a naturalistic setting. Other studies with children have also recently demonstrated generalization effects to natural settings.

Thus, in a more extensive study than is usually carried out, Yarrow et al. (1973) provided preschool children with adult caretakers for several weeks. Then, in a series of training sessions, different types of sympathetic helping behavior were modeled (e.g., sympathy statements to pictures of distress; sympathy statements and help for miniature doll dramas; real life sympathy and helping behavior). Modeling effects were assessed 2 days and 2 weeks later. The degree of generalization depended upon the type of training. Generalization to "alternative forms" of the training session occurred in all training methods and showed some durability. No transfer occurred from the modeling of sympathy statements and helping with miniature doll dramas to the picture of distress situation. Quite dramatic transfer effects were found in children who had had nurturant caretakers who had modeled helping and sympathy in both symbolic and live distress situations. These children showed real-life helping on a 2-week retest in a situation and with personnel quite different from those experienced during training.

Friedrich and Stein (1975) also carried out a more extensive study than usual. In an earlier work (Friedrich & Stein, 1973; Stein & Friedrich, 1972) they had shown preschoolers the prosocial television film "Mister Rogers' Neighborhood" three times a week during a 4-week period and observed the resultant naturally occurring behavior. Compared with neutral and aggressive control films, the prosocial film increased, over baseline, the amount of self-control, task persistence, and,

for children from lower-social-status families, prosocial interpersonal behavior (cooperation, nurturance, and verbalization of feeling). In this subsequent study, Friedrich and Stein (1975) showed four 20-minute prosocial "Mister Rogers' Neighborhood" films over a 1-week period to kindergarten children alone and in combination with special training. Television film modeling by itself led to generalized content knowledge and some helping behavior increments on a fantasy puppet-play measure. However, the television film did not affect real-life altruism by itself, although it did do so when combined with other training methods.

Coates, Pusser, and Goodman (1976) also assessed the effects of television film material on children's naturally occurring social behavior in a preschool setting. Compared with baseline scores, both the programs "Sesame Street" and "Mister Rogers' neighborhood" significantly increased the giving of positive reinforcement to, and social contacts with, others in the preschool. The findings were particularly marked among those children with low baselines.

From the studies cited above, it would appear that relatively brief exposure to highly salient models *can* produce durable and generalizable behavior change in observers. Further such modeling effects are not limited to the laboratory but also influence behavior in the natural environment. Two further aspects of models have been studied: consequences to the model and characteristics of the model.

Consequences to the model. Doland and Adelberg (1967) had a child model who shared receive "profuse" social reinforcement in one of their conditions. However, the effect of this manipulation was not independently assessed from a control condition and little could be concluded from it.

Elliott and Vasta (1970) showed children a film of a 6-year-old boy giving $\frac{3}{4}$ of the candy he had won to a charity box. Following this, in one condition, the experimenter went up to the film model and said, "That was very nice, Johnny, here's a toy to keep." Such "vicarious reinforcement" (Bandura, 1969, 1971), however, failed to produce an increment in the observer's subsequent altruism over the model-no-reinforcement condition. Harris

(1970), too, failed to find that observation of an experimenter praising a generous model increased the donation behavior of observing children.

Three other studies did, however, demonstrate vicarious reinforcement effects. Bryan (1971) showed that a generous model expressing positive affect ("This is fun" or "I feel wonderful") immediately after behaving generously produced more subsequent imitative generosity than a model making the same statements after a short delay. Presbie and Coiteux (1971) showed that praise to a model for his behavior, whether provided by the model himself or by the experimenter, induced more subsequent imitation of the model by the child than when the model was not so praised. This effect was demonstrated for both a generous model and a selfish model. Midlarsky and Bryan (1972) also showed vicarious reinforcement effects for both generous and selfish models. Their models smiled happily and said, "It feels *good* to give money."

Characteristics of the model. The effectiveness of modeling has been found to depend upon the characteristics of the model. Two principal characteristics have been studied: nurturance and power. With regard to nurturance, the findings are equivocal and seem to depend on whether the model is an adult or a peer and on whether or not the subject is accustomed to being nurtured. For example, Hartup and Coates (1967) showed that nursery school children not used to being reinforced by peers more readily imitated non-nurturant altruistic peers, whereas children who were used to being reinforced by peers more readily imitated a nurturant altruistic peer.

On the other hand, studies using adults as models have often failed to find a positive effect due to the nurturance of the model on children's subsequent imitation of altruism. Rosenhan and White (1967) and Grusec and Skubiski (1970) found no main effect due to their manipulations of nurturance, whereas Grusec (1971) actually found that nurturance tended to decrease imitation of generosity. Grusec suggested the provocative hypothesis (Grusec & Skubiski, 1970) that although nurturance may facilitate the acquisition of neu-

tral, expressive behavior, it hinders acquisition of behaviors that have some aversive properties for the individual engaging in them (e.g., those altruistic behaviors, such as sharing, which involve some cost to the individual).

Yarrow et al. (1973), on the other hand, found in a much larger scale study, in which nurturance was manipulated over several weeks, that high nurturance was effective in incrementing the modeling of altruistic behavior. Staub (1971a) found that a brief interaction with a nurturant rather than a non-nurturant adult significantly increased kindergarten children's helping. However, this effect was independent of the modeling. Modeling worked whether the model was nurturant or not.

Yarrow et al. (1973) discuss the concept and role of nurturance, and particularly the manipulation of nurturance in experimental studies, at some length and tentatively conclude that nurturance will be most influential

when (a) it is a meaningful, warm relationship that has been built up over time, (b) when it has included some withholding of nurturance, (c) when it not only precedes the adult's modeling but is continuous throughout the entire modeling sequence. (p. 258)

Unfortunately, this analysis (and their study) confounds nurturance per se (noncontingent warmth) with positive reinforcement (contingent warmth and approval) as in Items b and c above. What the effects of nurturance are separate from contingent warmth and approval (i.e., positive social reinforcement) is still an open question, at least in relation to producing altruistic children.

Grusec (Grusec & Skubiski, 1970) suggested that instead of nurturant models, powerful ones would be more effective in producing imitation of behaviors involving costs to the individual. In her study she found that a powerful model induced more sharing than a nonpowerful one (Grusec, 1971). On the other hand, Bryan and Walbek (1970b) failed to find a difference due to the power of the model. However, the Bryan and Walbek manipulation of power (using the experimenter as the model) did not appear as strong as the Grusec (1971) manipulation (controller of important resources), and this

may have accounted for their failure. In the Rushton (1975) study the model was also made to appear powerful (destined as a potential teacher in the child's school), and the effectiveness of that model in inducing durable imitation over an 8-week retest period was demonstrated. Unfortunately, the manipulation of power in that study was not independently assessed. One interesting finding in the Rushton (1975) paper was that the powerful model who made statements of positive affect ("This is really fun" or "I like this game"), prior to actually behaving, produced the most subsequent imitative generosity or selfishness both on the immediate and follow-up tests. Furthermore, it was these models who were also evaluated most highly by the children. These findings were replicated by Rushton and Owen (1975) using a 4-minute television film instead of a live model.

Once again, most imitation occurred, on both the immediate test and the delayed retest, when the children viewed a powerful model making statements of positive affect. Furthermore, these models were evaluated most highly by the children. Thus, possibly a powerful model demonstrating positive affect either prior to (Rushton, 1975) or contingent upon (Midlarsky & Bryan, 1972) modeling is the best inducer of imitative altruism.

Role Playing

Staub (1971b) trained children below the age of 6 to demonstrate a number of altruistic helping behaviors (e.g., direct intervention, verbal consolation, calling for aid) by means of role playing situations in which the child alternated playing the role of the helper and the helped. It was found that role playing led to more altruism on generalized tasks (helping the experimenter pick up some dropped objects and sharing of candy) and that these effects lasted over 7 days. The different patterning of the results for boys and girls, however, tended to obscure the overall effects. Furthermore, this procedure involved mild reinforcement for playing helpfully, as well as the experience of reversing roles, and thus the treatment was confounded.

Friedrich and Stein (1975) also carried out a role-play training study. In addition to

the prosocial television films mentioned earlier, they provided children with training in role playing and assessed the effects on subsequent altruistic behavior. Role playing in their study consisted of using "puppets in a structured rehearsal of key events and dialogue from the program" (Friedrich & Stein, 1975, p. 30). The results showed that children, particularly boys, who had watched the prosocial film and engaged in role-play training engaged in more helping behavior in a real-life situation different from the training situations. However, reinforcement for playing helpfully must have confounded this study as well.

Rosenhan and White (1967) and White (1972) carried out studies in which they carefully controlled for unwitting reinforcement effects. They found that giving a model-observing child the opportunity to rehearse (role play) the behavior in the presence of the model led to more subsequent imitative generosity than observation of the model by itself.

Verbal Socializing Events

Preaching. Bryan and Walbek (1970a, 1970b) showed that a model's practices influenced the child's behavior, but the same model's preaching did not. However, both the model's preachings and behavior affected the child's judgments of the model's attractiveness. Grusec and Skubiski (1970) showed that while a model's behavior was a clear source of behavior change for both sexes, regardless of whether the model was nurturant or not, the model's verbalizations were only effective for females who had been exposed to a nurturant model. Grusec (1972), however, showed that a model's verbalizations could be as effective an influence on the child's subsequent behavior as a model's behavior, although not for 7-year-old boys. Rushton (1975) and Rushton and Owen (1975) failed to find direct behavioral effects due to preaching on an immediate test, despite attempts to strengthen the manipulation of the preaching variable substantially. Rushton (1975), however, found that preaching to a child had a substantial impact on the child's behavior on an 8-week retest. Essentially, if the preaching were in the same di-

rection as the behavior, far less regression to the mean occurred over the retest interval. Preaching was thus in some way either preventing regression to the mean of the modeled behavior in the congruent situation or facilitating regression to the mean of the modeled behavior in the incongruent situation. Rushton and Owen (1975) also found a long-term effect due to preaching from a model, although only in interaction with the model's behavior. In this case, however, the patterning of the results were weaker and somewhat less clear. Thus, preachings from a television model might, in this context, have less impact than a live one. With both the live (Rushton, 1975) and the television model (Rushton & Owen, 1975), what the model preached had direct effects on the child's evaluations of the model, thus replicating the findings of Bryan and Walbek (1970a).

Two other studies found clear evidence for a preaching effect, both on immediate and delayed tests. Midlarsky and Bryan (1972) found that a model's exhortations affected an immediate test of donating tokens to a charity and a 10-day generalization test of donating candies to the same charity carried out in a different setting by a different experimenter. Further, on the immediate test there was an interaction between the model's verbalizations and the age of the listening child. Eleven-year-old children were more influenced by the preachings than were 10-year-olds. Rice and Grusec (1975) found that a model's verbalizations of what would be appropriate behavior in a situation that allowed for donating to a charity significantly affected 9- to 10-year-olds donations to the charity both on an immediate test and on a 4-month retest. It appears that what a model preaches *can* have effects on the observer's subsequent behavior. The conditions that maximize such effects are, however, still poorly understood.

Induction. Hoffman (1970, 1976) has suggested that the use of induction (i.e., the verbal elaboration of the good or bad nature and consequences of the act for other people and for the self) might play an important role in the socialization process. Hoffman and Saltzstein (1967) did indeed find a positive correlational relationship between the naturally occurring use of an inductive socializing

technique by parents and peer ratings of consideration for others in 12-year-olds. Elliott and Vasta (1970), in a modeling study mentioned earlier, found that modeling plus vicarious reinforcement plus the inductive verbalization to the model of "If you do something nice for someone else it means you are a good boy" produced more subsequent donating behavior in observers than the modeling conditions without the verbal elaboration. However, in a comparison of role playing and induction techniques, Staub (1971b) found that induction procedures either had no effect or actually decreased subsequent helping behavior. Finally, Friedrich and Stein (1975) provided children with labels for behaviors and feelings connected with altruistic acts and found positive increments on measures of prosocial responding, particularly with girls in combination with watching prosocial television programs and taking part in the role-playing training procedure.

THEORETICAL CONSIDERATIONS

Currently, there appear to be two viable theoretical approaches to the socialization of altruism in children: the cognitive-developmental stage theory approach (Piaget, 1932; Kohlberg, 1969; Hoffman, 1976) and the cognitive social learning approach (Bandura, 1969; Mischel, 1973). Although these two theories are often viewed as in conflict (Bandura & Walters, 1963, pp. 22-24, 206-210; Kohlberg, 1969, pp. 439-446; Rushton, 1973), one of the basic differences appears to lie in the referents selected for the analysis of behavior. While the social learning approach emphasizes the role of antecedent and consequent environmental events (e.g., the presence or absence of a model or reinforcement), the cognitive-developmental approach emphasizes the role of cognitive structures (stages) as measured, for example, by role-taking tasks and moral judgment stories. Let us consider the evidence in light of these two approaches.

From the social learning perspective, the two most powerful socializing techniques available for producing altruistically behaving children are reinforcement and modeling (Bandura, 1969). The literature reviewed on altruistic behavior by children suggests that

little evidence has been accumulated for the effectiveness of direct reinforcement procedures although some of the existing research is in the right direction. Modeling processes have been studied at great length and recent studies reviewed showed that modeling affected the amount, direction, durability, and generalizability of altruistic behavior—findings which strongly emphasize the power of this potential socializing force. Furthermore, increasing research is being directed at other modeling parameters, demonstrating, we may tentatively conclude, that observation of response consequences to the model can be effective in producing behavior change in observers and that powerful models behaving with some positive affect are the most effective in producing behavior change. Thus, there is much of power and utility to the social learning approach. It allows for a technology of behavior change, as well as an understanding of the kinds of processes responsible for naturally occurring altruistic behavior. There are, however, limitations and incompleteness to this approach.

It is still a question of concern as to *how* models come to have their effects (cf. Bandura, 1969; Gewirtz, 1969; Kohlberg, 1969). What is it exactly that becomes internalized, and what are the laws governing these internalizations? Bandura and Jeffrey (1973) have suggested an information-processing model. Mischel (1973) has suggested a number of person variables to account for modeling phenomena, such as expectancies, coding strategies, and self-generated rules and plans. To date, however, only demonstrations of the effects of some of these processes have occurred. Their parameters have not yet been established.

Another problem with the social learning approach is how to account for the other training procedures discussed (i.e., training in role playing and verbal socialization procedures). Inasmuch as training in role playing is reconceptualized as behavioral rehearsal, social learning theory requires no great elaboration. The verbal socializing techniques that have been referred to (preaching, induction, and labeling) have only recently begun to be studied, and there appears to be little certainty about how to categorize them, con-

ceptualize them, or account for them theoretically. Since most formal and informal means of exerting influence take part in a verbal medium, it seems that a great deal more attention ought to be given to these socialization processes. The recent moves of much of social learning theory into a consideration of mediational cognitive variables (Bandura & Jeffrey, 1973; Mischel, 1973) suggest that social learning theory may potentially be elaborated to take some of these other factors into account.

From the cognitive-developmental point of view, the most important socializing technique is that of role playing, or the provision of perspectives separate and different from those of the child. Such different perspectives lead, through various cognitive processes, to a decreasing amount of egocentricity and an increasing ability to see the world from different perspectives and to organize the world in increasingly wider and more integrated schemata. Thus, the ability to decenter and see the world (and presumably feel emotions) from another's point of view will be necessary conditions for the occurrence of genuine concern for others. In support of the cognitive-developmental point of view are the findings that generosity increases with age and that children within an age group, who have a higher level of moral judgment ability or role-taking capacity, tend to be more generous than children with lower levels of moral judgment or role-taking ability.

A cognitive-developmental account of the socializing techniques reviewed would perhaps regard reinforcement, observation of models, and verbal socialization as either (a) providing information to the child as to what was expected of him or her or (b) providing input that required the child to take new perspectives into account. Certainly role-play training procedures such as those used by Staub (1971b) and Friedrich and Stein (1975) might be viewed as rather more than simply providing children with an opportunity to rehearse behavior. Rather, such procedures would be viewed as providing the child with perceptions of what it is like to be in another's situation. Regarding verbal socialization, the role of induction would perhaps be of most importance because it would lead the

child to focus attention upon the perspectives of others.

One possible difficulty with the cognitive-developmental approach resides in the degree of generality found in the literature. If a strong version of the cognitive-developmental stage position were adopted, one would expect children's responses to moral judgment stories and role-taking tasks to serve as signs of generalizable underlying cognitive schemata and that these would predict "generalized altruism." Or, in the words of Kohlberg (1969):

A given stage-response on a task . . . represents an underlying thought organization . . . which determines responses to tasks which are not manifestly similar. (pp. 352-353)

Such a viewpoint often finds expression in the literature on cognitive development. For example, Flavell (1963) states that

a child of eight who possesses the grouping structure will, by implication from the structure, show reversibility of thought, a relative lack of egocentrism, a capacity for synthesizing rather than simply juxtaposing data, and a number of other characteristics. (p. 18)

Thus, the cognitive developmental position as formulated above requires generality of functioning at both the cognitive and the behavioral levels. The generality at the behavioral level appears to be of about 9% of the variance for altruistic behavior. The generality at the cognitive level does not appear to be much higher (see Shantz [1975] for a review, in addition to the research listed here). It might be that an increase in specificity in cognitive functioning (e.g., moral judgments concerned with distributive justice rather than, say, intentionality) might lead to even better predictions of children's altruism.

So, it appears that if the social learning theorists move further into cognitive processes and the cognitive developmentalists become more specific about their cognitive constructs, a useful integration might be possible. Certainly, neither approach can afford to ignore the empirical findings of the other. If some degree of integration cannot occur, perhaps differential predictions from the two approaches can be formulated that will then test the usefulness of one over the other.

For example, there is the interesting question of whether there are empirical consequents to the alternate conceptualizations of modeling and role playing espoused by the social learning and cognitive developmental theories (cf. Bandura, 1969; Kohlberg, 1969). One theory conceptualizes role play and modeling as providing different perspectives for the observer that increase his role-playing ability. The other theory focuses upon the learning and rehearsal of specific new forms of behaving. Integration or opposition? These are, no doubt, exciting prospects for the future.

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