THE EFFECTS OF REWARD - DESERVEDNESS ON SHARING BY CHILDREN AND THE RELATIONSHIPS BETWEEN ROLE - TAKING, MORAL JUDGMENTS AND SHARING BEHAVIOR

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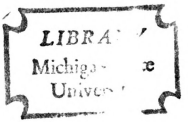

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THE EFFECTS OF REWARD-DESERVEDNESS ON SHARING BY CHILDREN AND THE RELATIONSHIPS BETWEEN ROLE-TAKING, MORAL JUDGMENTS AND SHARING BEHAVIOR

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Anthony B. Olejnik

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John Paul McGarvey
Major professor

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ABSTRACT

THE EFFECTS OF REWARD-DESERVEDNESS ON SHARING BY CHILDREN AND THE REALTIONSHIPS BETWEEN ROLE-TAKING, MORAL JUDGMENTS AND SHARING BEHAVIOR

By

Anthony B. Olejnik

In a 2 x 4 x 2 factorial design, the effects of sex of subject, the grade level of subject, and the deservedness of a reward for work input on the number of M&M candies shared with another child were studied in 20 boys and 20 girls from each of four grades: kindergarten, first, second, and third. Although there were no significant main effects, there was a significant interaction effect for Grade X Reward-Deservedness ($p < .001$) on sharing. Kindergarten and first-graders shared more when they didn't deserve a reward than when they did deserve a reward, while second and third graders shared more when they deserved a reward than when they didn't deserve a reward. The increase with age in the number of candies shared by children in the reward-deserved condition suggests that children do learn a norm of sharing as they get older and may behave accordingly. These results and those of previous studies were discussed in terms of reward-deservedness (equity), cognitive dissonance theory, and the effects of mood on sharing by children.

Data were also reported on the relationships between and the development of role-taking ability, moral judgments and

sharing behavior in these same 160 children. When age was partialled out positive correlations were obtained between role-taking and moral judgments ($r = .41$), role-taking and sharing ($r = .49$), and moral judgments and sharing ($r = .32$). The intercorrelations between the four role-taking measures as well as the intercorrelations between the six moral judgment stories were consistently high.

The moral judgment responses were analyzed by a 2 (sex of subject) x 4 (grade level of subject) x 2 (story consequences) analysis of variance with repeated measures. While there was no significant effect for sex of subject, there were significant main effects for grade ($p < .005$) and story consequences ($p < .001$) on the use of intentionality for making moral judgments on Piaget type stories. Consistent with previous research, older children were more likely to use intent rather than consequences of an act as a basis for making moral judgments. The children were also more likely to use intentionality as a basis for their judgments when the stories involved positive consequences than when they involved negative consequences.

The data on sharing and role-taking were analyzed by several 2 (sex of subject) x 4 (grade level of subject) analyses of variance. There was a significant effect for sex on sharing with a friend ($p < .025$) and a significant effect for sex on role-taking scores ($p < .05$). The girls had higher role-taking scores and shared more with a friend than boys. There was also a significant increase with age

in role-taking ability ($p < .025$) and a marginally significant increase with age in sharing with a friend ($p < .06$). For girls a significant negative correlation between family size and sharing with a friend ($r = -.21$) was found. These results and those of previous studies on the development of role-taking ability, moral judgments, and sharing were discussed.

THE EFFECTS OF REWARD-DESERVEDNESS ON SHARING BY CHILDREN AND THE RELATIONSHIPS BETWEEN ROLE-TAKING, MORAL JUDGMENTS AND SHARING BEHAVIOR

By

Anthony B. Olejnik

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To My Family

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INTRODUCTION

The two major objectives of this investigation were to investigate the relationships among the development of role-taking ability, moral judgments, and sharing behavior of children; and to study the effects of reward-deservedness on the sharing behavior of children.

Several investigators (Handlon & Gross, 1958; Midlarsky & Bryan, 1967; Staub & Feagans, 1969; Ugurel-Semin, 1952; Wright, 1942) have reported developmental changes in the altruistic behavior of children. The amount of generosity, sharing, and helping displayed by children between 4 and 12 years tends to increase with age. One possible explanation for this change in behavior is that as children get older they have more opportunities to learn self-sacrificing responses by imitating adults and peers as well as more opportunities to be rewarded for their sharing and helping behavior.

In their review of self-sacrificing behavior by children, Bryan and London (1970) cited several studies which provided evidence for the influence of behavioral example and reinforcement upon the donation behavior of children. However, Krebs (1970) noted that studies on the modeling of altruistic behaviors have produced temporary effects rather than long term changes and that these studies have not demonstrated modeling effects which generalize to a variety of self-sacrifice situations. Krebs also pointed out that modeling was merely a

description of behavioral sequences rather than an explanation for the behavior. Therefore, it appears that modeling neither produces changes in the altruistic behavior of children for extended periods of time nor fully explains the developmental changes in the altruistic behavior of children.

A second, more cognitive explanation for the increase in the altruistic behavior of children as they grow older is that there are developmental changes in children's cognitive thought processes which influence their moral judgments and moral behavior. According to Piaget (1932), the egocentric thought of young children prevents them from judging moral situations from any viewpoint other than their own and, therefore, limits their moral judgments and social interactions in a variety of activities. Piaget (1926), Flavell et al. (1968) and others have investigated developmental changes in role-taking skills in children between three and fourteen years and have found that, while signs of role-taking skills begin to develop around three or four years, it isn't until sometime during middle-childhood or even as late as early adolescence that children are capable of accurately taking the role of another person. Selman (1973) has recently suggested an ontogenetic sequence of stages of role-taking ability which he has termed "social perspective taking ability."

Role-taking ability and altruism

Although there are interesting developmental changes in the altruistic behavior of children and in their role-taking skills, the relationship between these behavioral and cognitive

changes has not been investigated. In the numerous studies which have investigated altruistic behavior of children (see Krebs, 1970), researchers have not known if the subjects understood the needs of fictitious poor children, crippled children, or even children who had fallen off a chair in another room. It would seem that the ability to take the role or perspective of another person would very much influence a child's response in these self-sacrificing situations. It could be expected that a child with a better developed ability to take the perspective of another might behave more altruisticly than a child who was less able to put himself in another person's position.

In a recent study on the learning of helping and sharing by kindergarten children, Staub (1971) found that when role-playing procedures were used there was an increase in sharing by boys and an increase in helping by girls. Staub suggested that role-playing of specific situations may have increased a child's capacity for empathy. Based on evidence from several experiments (Aderman & Berkowitz, 1969; Aronfreed & Paskel, 1968; Krebs, 1970), Krebs (1971) has concluded that "empathy has gone furthest to explain altruism (p. 411)." These studies have emphasized only the affective component of empathy (i.e. the ability to vicariously experience another's emotions or feelings) rather than the cognitive component of empathy (i.e. role-taking or the ability to view another's situation from that other's perspective).

Since earlier studies (Burns & Cavey, 1957; Dymond, Hughes,

& Raabe, 1952) have reported age changes in children's ability to experience another's emotions, it appears that both the cognitive as well as the affective components of empathy may be related to the developmental changes in sharing and helping behavior of children. Therefore, the first hypothesis of this study was that children who are capable of accurately perceiving the emotional and cognitive aspects of another's position would be more altruistic than children who have not developed these empathic abilities. In other words, role-taking ability and altruism were expected to be positively related. The more egocentric a child was, the less likely he was expected to be altruistic.

Role-taking ability and moral judgments

Although research has not investigated the relationship between the development of role-taking ability and moral behavior, Selman (1971) has found a relationship between role-taking and moral judgments. Selman found that, with eight, nine, and ten year-old children, those children who had developed reciprocal role-taking skills were more likely to make moral judgments at the conventional rather than the pre-conventional level. Reciprocal role-taking ability appeared to be a necessary condition for the development of moral judgments in children. While Selman studied the relationship between moral judgments on Kohlberg's moral dilemmas (Kohlberg, 1958) and role-taking skills in children between eight and ten years of age, the present study investigated the relationship between role-taking skills and moral judgments on Piaget-type

stories (Piaget, 1932). Therefore, the second hypothesis of this study was that children with better developed role-taking skills would make moral judgments at a more advanced stage than children who have not developed these skills. A positive correlation between moral judgments and role-taking ability was expected.

Moral judgments: prescriptive and proscriptive

Research on moral judgments has been primarily stimulated by Piaget (1932) and Kohlberg (1958; 1964). Both theorists view moral development in terms of cognitive processes in making moral judgments, and both suggest that moral development progresses through a sequence of stages due to changing thought structures which underlie moral concepts. While investigating the child's respect for the rules of social order and the child's sense of justice, Piaget (1932) suggested that it was through the process of organizing and regulating social experiences that a child develops moral structures. According to Piaget, children are limited in their moral judgments by their egocentric thought until around seven years of age. At this time children advance from the early stage of moral realism or subjective morality to the more advanced stage of moral relativism or objective morality. A finding which has been well supported (Boehm & Nass, 1952; Cowan, Langer, Heavenrich, & Nathanson, 1969; Johnson, 1962; Piaget, 1932) is that younger children tend to make moral judgments based on the consequences of an act, while older children take into consideration the intentions behind the action.

Both Piaget (1932) and Kohlberg (1958) have used interview techniques to obtain moral judgments to either stories or moral dilemmas. In determining the stage or level of moral judgment, Piaget and Kohlberg have emphasized the importance of intentionality rather than consequences of an act in the judgments which are made. The original stories which were used by Piaget (1932) as well as the revised stories which have been recently used (Armsby, 1971; Gutkin, 1972; Hebble, 1971; King, 1971), for studying intentionality in moral judgments have involved making judgments on the wrongness of two acts (e.g. Which boy is naughtier? The one who broke one cup or the one who broke fifteen cups?). Do children use similar bases for making judgments to the rightness or goodness of two acts as they do to the wrongness of two acts?[1]

Since research interest in moral development has shifted from studying proscriptive behaviors (cheating, stealing, and lying) to prescriptive behaviors (giving, sharing, and helping), it seems that some of the interest in studying moral judgments might also shift to studying judgments which involve prescriptive behaviors. Recently Baldwin and Baldwin (1970) and Shure (1968) applied Heider's naive psychology to the study of developmental changes in the cognitive understanding of interpersonal relationships. Shure (1968) found developmental changes in children's judgments of fairness, generosity, and

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[1]This manipulation of the Piaget stories was suggested to me by John McKinney in discussions on prescriptive values.

selfishness, while Baldwin and Baldwin (1970) reported significant increases in adultlike judgments of kindness by children between five and seven years. This latter finding supports Piaget's (1932) findings of changes in cognitive understanding at this period of time in the child's development. Research by Baldwin and Baldwin (1970) and Shaw and Sulzer (1964) also suggests that children might use intentionality differently under various consequence conditions. While Costanzo, Coie, Grumet, and Farnhill (1973) recently found that children's use of intentionality was different under conditions of positive and negative consequences, their procedure differed from the Piagetian format. Children were asked to make judgments of single actors rather than comparisons of pairs of children. According to Costanzo et al. (1973), "this may have allowed subjects' consideration of intentionality to become more visible, since it did not force the subject to choose between intentionality and consequence bases for judgment" (p. 160).

In the present study, Piagetian type stories which involved both positive and negative consequences were used. It was expected that children who make moral judgments based on intentionality for negative consequence stories would also use intent as a basis for making moral judgments to the revised prescriptive or positive consequence stories. Based on previous research, children's scores on moral judgments for positive and negative consequence stories were expected to be positively related as well as to increase with age.

Moral judgments and sharing

Researchers have not established a strong relationship between moral judgments and moral behavior. Some support for the hypothesis of a relationship between moral reasoning and moral behavior was found in experimental studies of cheating behavior (Grim, Kohlberg, & White, 1968; Krebs, 1968; Lehrer, 1967). Individuals at the lower stages of moral judgment were more likely to cheat than individuals at the more advanced stages. While these studies involved wrong-doing (cheating) and moral judgments, there is little evidence relating moral judgments and prescriptive behavior (Olejnik and McKinney, 1973; Ugurel-Semin, 1952).

In an early study on altruism with children in Istanbul, Ugurel-Semin investigated the relationship between moral behavior and age, sex, social class, family size, and moral judgment. Children between 4 and 16 years were asked to divide an unequal number of nuts between themselves and another child. Prior to performing the sharing act, each child was asked how he would share the nuts and why. Ugurel-Semin found that generosity increased between 6 and 8 years and that the selfish tendency was strongest between 4 and 6 years. There was also a developmental change in the types of moral judgments made by the children, and the consistency between moral behavior and moral judgments was strongest among the children who shared equally and those who were generous. Olejnik and McKinney (1973) recently reported that prescriptive value orientations in both parents and children were related to

generosity in 4 year old children. As a result of these findings involving sharing behavior and those studies dealing with moral judgments and cheating, it was hypothesized that moral behavior (sharing) and moral judgments on Piaget type moral dilemmas would be related. Children who made moral judgments at higher levels of moral reasoning would be more altruistic than children who made moral judgments at lower levels of moral reasoning.

Therefore, regarding the first major objective of this study, positive relationships are expected between the development of role-taking ability and moral behavior (sharing); role-taking ability and moral judgments; moral judgments to positive and negative consequence conditions; and moral judgments and sharing behavior.

Reward-deservedness and sharing

Several investigators have reported that experimentally induced feelings of failure, shame, and guilt lead to reparative altruistic behavior (Carlsmith & Gross, 1969; Darlington & Macker, 1966; DePalma & Olejnik, 1973; Freedman, Wallington & Bless, 1967; Lerner & Matthews, 1967; Rawlings, 1968). Interpretations for these results vary from behavior that rights a wrong doing and increases self-esteem to self-punitive responses that reduce feelings of guilt. Recent studies (Isen, 1970; Isen, Horn, & Rosenham, 1973; Isen & Levin, 1973; Moore, Underwood, & Rosenham, 1973) have reported that positive affect increased altruistic behavior.

An interesting interpretation for the results of the

effects of success and failure on sharing by children was suggested by Staub (1968). Staub found that fourth graders were more likely to share candy after failing on a bowling task than after being successful. This relationship was reversed for fifth-graders. Staub proposed that the fourth-graders may have learned a "norm of deservedness" which influenced their sharing behavior. He argued that individuals would be more likely to share after being rewarded for a poor performance than after a good performance because the individual in the poor performance condition did not have a justifiable claim to the reward. The norm of deservedness apparently stops operating by the fifth grade since the fifth graders shared more after the successful performance. Unfortunately no reason has been offered to explain why the norm of deservedness affected the two age groups differently. Although Staub (1973) recently reported some additional evidence with third and sixth-grade children which was consistent with his previous findings, the results demonstrated effects for success and failure on sharing rather than any effects for reward-deservedness (i.e. the reward a person should receive for performing a particular task). It has been assumed, rather than established, that the children in the success and failure conditions perceived their rewards as being either deserved or not deserved.

Therefore, the second objective of the present study was to test experimentally the effects of reward-deservedness on the sharing behavior of young children. It was expected that

children between kindergarten and third-grade who have worked and received a reward they deserved (equity or sufficient reward) would share their reward less with another child than children who received a reward they did not deserve (inequity or oversufficient reward). Also, since many investigators (Handlon & Gross, 1958; Midlarsky & Bryan, 1967; Staub & Feagans, 1969; Ugurel-Semin, 1952; Wright, 1942) have reported that the amount of giving, sharing, and helping displayed by children tends to increase with age, it was expected that there would be a significant effect for age on the sharing behavior of the children in the present study. Since Krebs (1970) concluded in his review of altruism research that there were no consistent sex differences in the altruistic behavior of young children, no sex differences were expected.

METHOD

Subjects

Subjects were 40 white children (20 boys and 20 girls) from each of four grades: kindergarten, first, second, and third. The mean age for each grade level was 68, 81, 92, and 104 months respectively. The children were attending an elementary school in a rural town (pop. 5468) in central Michigan. According to school administrators they were average in performance on intelligence and standard achievement tests administered routinely in the state and came from predominantly lower-middle class families. The data were collected at the school during the winter months from January through March.

Materials

Session 1. A taperecorder; pictures similar to those described by Flavell et al. (1968) involving a young boy being chased up a tree by a dog; miniature wooden figures (two little girls, two little boys, and a dog); a small toy truck; a 9 x 12 inch pegboard with a street, railroad tracks, and houses painted on it; and several packages of M&M candies were used during the session. M&Ms were used as rewards to be shared since Midlarsky and Bryan (1967) found no relationship between children's preferences for M&Ms and their giving behavior and because Witryol (1971) found no age or sex differences in preferences for M&Ms for children in kindergarten,

second, and fourth grades.

Session 2. In this experimental session the following items were used: a pinball game; a bag of 50 colorfully wrapped candies; pairs of scissors; sheets of paper with four shapes (circle, square, triangle, and oval) on each; a picture of a refugee child; a donation can with a few M&Ms inside; and packages with 19 M&Ms in each.

Design

In a 2 x 4 x 2 factorial design, the extent of the deservedness of a reward for work input (deserved or not-deserved), the grade level of the subject (kindergarten, first, second, or third), and the sex of the subject were the independent variables studied. Half of the boys and half of the girls in each grade were randomly assigned to one of two experimental conditions. In the reward-deserved condition, children performed a relatively large amount of work by cutting out 20 shapes from paper, and they received an appropriate reward which was previously determined for the task (see Appendix D). In the reward not-deserved condition, the children performed less work by cutting only four shapes, but they received the same reward as the children who cut 20 shapes.

Procedure

Each child individually participated in two separate 30 minute sessions. Approximately 10 days after participating in session 1 with a male experimenter, each child participated in session 2 with one of two female experimenters. There were

no differences in the data collected by the two female experimenters.

Session 1. The first session was designed to measure each child's role-taking ability, moral judgments and sharing behavior. The experimenter asked each subject questions about the number of brothers and sisters in his family as well as the name of the child's best friend at school. The child was then given 11 M&M candies in a bag. These were emptied out on the table. The experimenter then said, "Here are some M&M candies. These are for you to have. If you want to, you can leave some for _____ (name of best friend). We'll put the ones you want to keep for yourself in this bag and put your name in it. Then we'll put the ones you want to give to your friend in another bag. If you don't want to, you don't have to give your friend any candy." After the child made his decision the experimenter put the bag of candy aside and said he would give it to the teacher who would later give it to the child at lunch. The children and teachers agreed with this procedure.

After the M&Ms were divided, each child was presented with four measures of role-taking ability. The first task required the child to tell a story about a sequence of seven pictures which involved a boy being frightened by a dog, running down a street, and climbing a tree to eat an apple (described by Flavell, et al., 1968, p. 71). After telling the story with all seven cards presented, three cards were removed. The experimenter then said, "Your teacher has never

seen these pictures. What I'd like you to do this time is tell me the story your teacher would tell if she saw these pictures. What would your teacher say is happening in this story?" Each child then told the story he thought his teacher would tell. Since the three cards which were removed eliminated the fear of the dog motive for climbing the tree, the experimenter then asked each child why the teacher thought the boy climbed the tree and what the teacher thought the dog was doing in the last picture. See Appendix A for scoring of responses.

The second, third, and fourth role-taking tasks were an adaptation of a procedure used by Chandler and Greenspan (1972). Each child was presented with three story situations which involved a main character experiencing either sadness, anger, or happiness, and a second character who entered the scene too late to know the circumstances arousing these emotions in the main character. While Chandler and Greenspan (1972) used pictured situations, miniature toy children, a dog, and a truck were manipulated in the present study. Each child was given an opportunity to assign an emotion to the main character in the story by choosing one from among four pictured emotions. The subject then was asked to tell the story from the point of view of the main character and then from the perspective of the naive late comer.

The following is an example of one of the situations. The experimenter gave the following instructions: "Listen to the stories carefully. Then I'll ask you some questions about them. 'One day a little girl was playing outside with her pet

dog. The dog ran into the street and was hit by a truck. The dog died.' How does this girl feel now?" The experimenter then showed the child the four faces with different emotions. After the child made his response, the experimenter continued with the story: "The little girl started to walk home. A friend saw her and asked her if she wanted to go to the zoo to see some animals. The little girl said no and ran into her house. Her friend was surprised because the little girl enjoys seeing the animals at the zoo. So the friend had to go to the zoo by herself."

The experimenter then asked the subject to tell the story from the beginning. After the child told the complete story, he was asked, "What would the friend say happened in this story? What story would she tell?" Following the child's response, the experimenter asked, "Why does the friend think the little girl is sad? and why does the friend think the little girl doesn't want to go to the zoo?"

This procedure and similar questioning were also used for the other two stories (see Appendix B). The responses were tape-recorded and later scored by two independent raters. The total role-taking ability score was the sum of the scored responses on the four role-taking tasks.

Each child was then presented with six moral judgment stories. Three revised Piagetian stories involving negative consequences which were used by Armsby (1971) were presented along with three stories involving positive consequences (giving, sharing, and helping) written by the author for the

purpose of this study (see Appendix C). After each negative consequence story, the subject was asked which of the two children he thought was the naughtiest and why he thought he was the naughtiest. After the positive consequence stories, each subject was asked which one of the two children he thought was the nicest and why he thought he was the nicest.

Responses to these stories were also tape-recorded and later scored by two independent raters. Points were assigned for each moral judgment response: zero points were given for responses based on the consequences of an act and one point was given for each response which took intentionality into account.

After all the moral judgment stories were presented, the experimenter thanked each child and returned the child to his classroom.

Session 2. The second session was designed to measure each child's helping behavior and to study the effects of reward-deservedness on sharing. The female experimenter briefly described to the child what was going to happen during the experimental session. Each subject was told he would have an opportunity to play with a toy pinball game and then he would be given an opportunity to earn some M&M candies.

Following this introduction, the experimenter presented the subject with an attractive pinball game with which the child could play. The experimenter told each child that she was interested in what children thought about this game and how much they liked it. Once the experimenter showed the

subject how to play the game, the experimenter let the child play the game and she moved away from the child to a place where she could not be seen. After the subject began playing the game, the experimenter dropped a bag of candies on the floor, and fifty wrapped candies fell within a previously marked area. The experimenter then expressed mild alarm over dropping the candies and began picking them up. Unless the subject joined the experimenter immediately, she made additional prompts to get the subject to help: "I should have been more careful. Could you help me a little?" After the child began picking up the candies, the experimenter picked up five candies and then excused herself to find another bag for the candies. The subject was then told to pick up as many as he wanted to pick up and then leave the rest if he wanted to and go back to playing with the game. The experimenter left the room and returned in about three minutes which was sufficient time for the child to pick up the remaining candies. When the experimenter returned, she noted the number of candies picked up by the child and then finished picking up the candies that were left on the floor.

Each child was then asked if he wanted to earn some M&M candies. In the reward-deserved condition each subject was asked to cut out 20 shapes from paper and was then given 19 M&M candies. In the reward not-deserved condition each subject was asked to cut out 4 shapes but was also given 19 M&M candies. The number of M&M candies allocated for these cutting tasks was previously determined (Olejnik, 1973).

After cutting the shapes and receiving the M&M candies, each subject was presented with a donation can and a picture of a refugee child. The experimenter then gave each subject an opportunity to share his candy with the child in the picture (see Olejnik & McKinney, 1973). The experimenter left the room while the child decided whether or not to share any of his candies. When the experimenter returned, she asked the child if he gave any M&Ms away and why he decided to give or not give. The experimenter then thanked the subject and returned him to the classroom.

RESULTS

Session 1. Positive correlations were found between age and sharing with a friend ($r = .20$, $p < .01$); age and role-taking ($r = .30$, $p < .001$); and age and moral judgments ($r = .34$, $p < .001$). There were no significant correlations between age and either helping or sharing with a stranger. A general summary of the correlations found in the study with age partialled out is presented in Table 1, while the data are presented separately for boys and girls in Table 2.

Role-taking and sharing

As the data in Table 1 show, role-taking ability was significantly and positively correlated with sharing with a friend ($r = .66$, $p < .001$); sharing with a stranger ($r = .24$, $p < .01$); and total sharing ($r = .49$, $p < .001$). There were no significant correlations between role-taking and helping behavior for either boys or girls. While the relationship between role-taking and sharing with a friend (see Table 2) was significant for both boys ($r = .64$, $p < .001$) and girls ($r = .69$, $p < .001$); the correlations between role-taking ability and sharing with a stranger were significant only for boys ($r = .32$, $p < .01$).

While the correlation between role-taking and sharing with a friend is quite high, the correlation between role-taking and sharing with a stranger is not as high. Since the data on sharing with a stranger were obtained from children

in two different experimental groups, a closer examination of the correlation between role-taking and sharing for each grade and in each experimental condition seemed warranted. The following correlations were obtained for children in each grade from kindergarten to third, respectively: reward not-deserved ($r = -.17, .05, -.27$, and $.49$) and reward-deserved ($r = .17, .47, .56$, and $.63$). While the correlations between role-taking and sharing with a stranger were rather inconsistent for children in the reward not-deserved condition, there was a positive relationship between role-taking and sharing with a stranger for children in the reward-deserved condition. It appears that the lower over-all correlation between role-taking and sharing with a stranger is partially due to the experimental manipulation.

Role-taking and moral judgments

Role-taking ability and the use of intentionality for making moral judgments were positively correlated ($r = .43$, $p < .001$). The correlations between role-taking and moral judgments were significantly higher for negative consequence stories than for positive consequence stories ($t = 4.10$, $df = 157$, $p < .001$). The correlations between role-taking and moral judgments were similar for boys ($r = .42$, $p < .001$) and girls ($r = .49$, $p < .001$). Children with better developed role-taking skills were more likely to use intentionality when making moral judgments.

Moral judgments and sharing

The data presented in Table 1 suggest that moral judgments and sharing with a friend are significantly and positively correlate ($r = .44, p < .001$). There was also a small significant correlation between moral judgments and sharing with a stranger ($r = .15$, $p < .05$). However, there was no significant relationship between moral judgments and helping. A further examination of the correlations for boys and girls indicated that, while the relationship between moral judgments and sharing was significant for both boys and girls, only for boys was there a positive relationship between moral judgments and sharing with a stranger. Boys using intentionality as a basis for moral judgments shared more with both friends and strangers, while girls using intentionality as a basis for moral judgments shared more with a friend but not with a stranger. While the correlations between moral judgments and sharing with a friend were higher for negative consequence stories than for positive consequence stories, they were not significantly different ($t = 1.60$, $df = 157$).

Sex and age differences

A summary of the mean scores for role-taking ability, moral judgments, sharing and helping behaviors for boys and girls at each grade is presented in Table 5. Children's intentionality responses on the moral judgment stories were analyzed by a 2 (sex of subject) x 4 (grade level of subject) x 2 (story consequences) analysis of variance with repeated

measures (see Table 6). There was a significant effect for grade on the use of intentionality for making moral judgments ($F = 5.56$, $df = 3,144$, $p < .005$). Older children were more likely to use intentionality as a basis for making moral judgments, while younger children tended to make moral judgments based on the consequences of the act. There was also a significant effect for the story consequences on intentionality responses for making moral judgments ($F = 34.18$, $df = 1,144$, $p < .001$). Children were more likely to use intentionality as a basis for making moral judgments when the stories involved positive consequences rather than negative consequences.

The data on role-taking, sharing, and helping were analyzed by several 2 (sex of subject) x 2 (grade level of subject) analyses of variance. While there were no significant effects for either sex or grade on either helping, sharing with a stranger, or sharing total, there were significant effects for sex of subject ($F = 3.92$, $df = 1,152$, $p < .05$) and grade ($F = 5.78$, $df = 3,152$, $p < .025$) on role-taking scores (see Table 7). While girls had higher role-taking scores than boys at each grade, individual comparisons of the means (Winer, 1962, p .238) revealed that only in the third grade was there a significant difference in role-taking scores between boys and girls ($F = 4.19$, $df = 1,152$, $p < .05$). The finding that role-taking scores increased with age is consistent with previous research that suggests older children have better developed role-taking skills.

There was also a significant effect for sex of subject

on sharing with a friend ($F = 5.51$, $df = 1,152$, $p < .025$). While girls shared more M&M candies with a friend than boys at each grade, an individual comparison of the means (Winer, 1962, p. 238) indicated that only in kindergarten was the difference between boys and girls statistically significant ($F = 3.91$, $df = 1,152$, $p < .05$). There was a marginally significant increase with age in sharing with a friend ($F = 3.74$, $df = 3,152$, $p < .06$) which is consistent with earlier studies on sharing.

Measures of role taking, moral judgments, and sharing

The intercorrelations of each of the four role-taking tasks compared to the total role-taking score were $r = .65$, .88, .84, and .86 respectively. These correlations are presented in Table 3 and indicate some internal reliability for the items on the role-taking task.

While the intercorrelations for each of the moral judgment stories and the total moral judgment score were higher for the three negative consequence stories ($r = .75$. .73, and .77) than for the three positive consequence stories ($r = .55$, .57, and .55) respectively (see Table 4) they were not significantly different. Scores on the negative and positive consequence items were positively correlated ($r = .33$, $p < .001$). Children were generally consistent in using either intentionality or consequences as the basis for making moral judgments to both positive and negative consequence stories.

Two independent raters scored the responses to the four role-taking tasks as well as the responses to the six moral

judgment stories. The rater reliabilities were .95 for the role-taking scores and .93 for the moral judgment scores.

Although there were no significant correlations between the sharing measures and the helping behavior, there was a significant positive correlation between the two sharing measures ($r = .41$, $p < .001$). Children who shared M&Ms with their friend were also likely to share M&Ms with a stranger. This finding was significant for both boys ($r = .51$, $p < .001$) and girls ($r = .30$, $p < .01$). There seems to be a difference in altruism when given two different self-sacrificing tasks, since children who shared the most were not necessarily those who helped the most.

Family size and constellation.

From the data presented in Table 1 it appears that family size did not correlate with any of the other variables investigated. A closer examination of the data in Table 2 suggests that family size for girls correlated negatively with sharing with a friend ($r = -.21$, $p < .05$). Girls from larger families shared fewer M&Ms with their friends than girls from smaller families. When the number of variables studied is considered this finding may have been nothing more than a chance result. Furthermore, when sharing responses were analyzed by a 2 (sex of subject) x 3 (ordinal position) analysis of variance with ordinal position referring to being either oldest, youngest, or somewhere in between, there was no significant effect for ordinal position ($F < 1$) on sharing.

Session 2. The mean number of M&M candies given away to a poor child by kindergarten, first, second, and third-grade boys and girls in either a reward-deserved or a reward not-deserved condition is presented in Table 9. These data were analyzed by a 2 (reward-deservedness) x 4 (grade level of subject) x 2 (sex of subject) analysis of variance (see Table 10). Although there were no significant main effects, there was a significant interaction effect for Grade Level x Reward-Deservedness ($F = 13.59$, $df = 3,144$, $p < .001$). From Figure 1 it can be seen that kindergarten and first-graders shared less of their candy when they deserved a reward than when they didn't deserve a reward, while the second and third-graders shared less when they didn't deserve a reward than when they did deserve a reward. An analysis of simple effects (Winer, 1971, pp. 347-351) revealed a significant effect for grade in both the reward-deserved condition ($F = 7.467$, $df = 3,144$, $p < .01$) as well as in the reward-not-deserved condition ($F = 6.612$, $df = 3,144$, $p < .001$). In other words, in the reward-not-deserved condition there was a decrease with age in the number of candies shared by the children, while in the reward-deserved condition there was a steady increase with age in the number of candies shared (see Figure 1).

DISCUSSION

The hypotheses of the present study regarding the relationships between role-taking ability, moral judgments, and sharing behavior appear substantially confirmed. While there is no evidence for any cause-effect relationship between role-taking, moral judgments and sharing, and the results cannot be interpreted as evidence that cognitive thought processes in terms of role-taking skills and moral judgments influence moral behavior (sharing), positive relationships between role-taking ability and sharing; role-taking ability and moral judgments; and moral judgments and sharing in children were found. Also, although there was no main effect for reward-deservedness on sharing as hypothesized, the interaction effect for Reward-Deservedness x Grade supports Staub's contention that the influence of the norm of deservedness on sharing decreases with age.

While previous studies had emphasized the importance of the relationship between the affective component of empathy and altruism, the present study was able to demonstrate a similar relationship between the cognitive component of empathy (i.e. role-taking ability) and sharing. Children with better developed role-taking skills were more likely to share their candies than children who were more egocentric. This finding supports Piaget's (1932) and Flavell's (1968) position that role-taking skills may influence social interactions in children.

The findings on the relationship between role-taking ability and moral judgments not only confirm and support previous research (Selman, 1972) but also can be extended to include younger children and their moral judgments on Piaget-type dilemmas. Children between five and nine years of age with better developed role-taking skills are more likely to make moral judgments based on the intention behind an act rather than on the consequences of an act. In other words, greater role-taking ability is related to more advanced stages of moral judgment.

The data regarding children's responses to the moral judgment stories suggest that, while older children tend to base their moral judgments on intentionality rather than consequences of an act for both positive and negative consequence stories, children between 5 and 9 years of age are more likely to make moral judgments based on intent rather than consequences when the stories involve positive consequences rather than negative consequences. These data not only confirm findings re-ently reported by Costanzo, Coie, Grument, and Farnill (1973) which suggest that children use intentionality as a basis for making moral judgments differently for positive and negative consequence stories, but they also extend the findings to moral judgment situations using Piaget-type stories. As suggested by Costanzo et al. (1973),the reason why the children may use intentionality for positive consequence stories at a younger age is because parents or other socializing agents are more likely to take into account the child's intention when

rewarding children for good behavior and punish bad behavior more often on the basis of the consequences of an act. Although Piaget (1932) suggested that parents influenced children's development of moral judgments, little research has been done to investigate that relationship. Further investigations of the development of moral judgments in children should take into consideration both positive and negative consequences in moral dilemmas as well as parental discipline techniques.

While previous investigations found a relationship between moral judgments on Kohlberg's moral dilemmas and cheating (Grim, Kohlberg, & White, 1968); parental value orientation and sharing (Olejnik & McKinney, 1973); and moral judgments on dividing nuts and sharing by children in Istanbul (Ugurel-Semin, 1952), the present study found a positive relationship between moral judgment responses on Piaget-type moral dilemmas and sharing in children between kindergarten and third-grade. Children, at more advanced stage of moral development, who used intentionality as a basis for making moral judgments were more likely to share M&M candies with a friend. Although the relationship between the responses to the positive consequence stories and sharing was not stronger than the relationship between the responses to the negative consequence stories and sharing, it appears that even with the influence of age partialled out children at higher stages of moral judgment are more likely to share than children at lower stages of moral judgment.

Although a few previous researchers found that children from small families are less altruistic than children from large families, the data have not been consistent (Krebs, 1971). In the present study, family size was found to be negatively correlated with sharing with a friend for girls. The larger the family, the less likely it was that the girls would share their candy with a friend. Family size was not related to any of the other variables investigated in the study.

Consistent with previous research on the development of role-taking ability (Flavell, 1968; and others), and the development of moral judgments (Piaget, 1932), in the present study, there was an increase with age in both role-taking ability and moral judgments. There was also an increase with age in sharing with a friend.

While the results of the effects of reward-deservedness on sharing in the present study are similar to the findings reported by Staub (1967), the age at which the norm of deservedness no longer influences sharing behavior is different in the two studies. Two possible reasons for the differences are that, first, the tasks in the two studies were quite different (i.e. playing a bowling game versus cutting shapes from paper with scissors) and, second, Staub manipulated success and failure conditions and the deservedness of his candy reward was inferred rather than established. The candy reward used in the present study previously determined for the cutting task by children between kindergarten and third grades (Olejnik, 1973). These tasks may have been more concrete and

therefore easier for the children to establish a relationship between their work performance and their reward.

When the data in the present study are pictured as two separate curves, one for each experimental condition, it can be seen that there is an increase with age in the number of candies the children shared in the reward-deserved condition. This is consistent with other data collected in this study as well as with previous research on developmental changes in sharing behavior (Handlon & Gross, 1958; Midlarsky & Bryan, 1967; Ugurel-Semin, 1952; Wright, 1942). These data indicate that in previous research on altruism with children, the subjects may have felt that they "deserved" a reward which they were asked to share or donate to others. Possibly, if previous investigators had given children rewards that they did not deserve, this increase in age in sharing would have been reversed as the data from subjects in the reward-not-deserved condition of the present study suggest.

One possible explanation why the older children in the reward-not-deserved condition shared fewer candies is that their sharing possibly would not have produced any intrinsic satisfaction since sharing something which doesn't belong to them (reward-not-deserved) isn't really altruism. The older children in the reward-deserved condition may have shared more because their sharing was a true self-sacrificing act (altruism) since they deserved the candies but decided to give some away and because their sharing may have provided greater intrinsic satisfaction.

These findings for the children in the reward-not-deserved condition are congruent with studies reported by Lane and Messé (1971, 1972). They found that college students were more likely to keep a greater proportion of a reward when it seemed to be an overpayment for their work inputs. In the oversufficient reward condition their subjects tended to be more concerned about their own outcomes, and these subjects were satisfied with receiving more than they deserved as long as their comparison person was equitably treated. This may have been the perception or thinking of the second and third graders in the present study.

The responses of the older children in the reward-deserved condition of the present study are also consistent with the findings of Lane and Messé (1971, 1972). While Lane and Messé found that subjects in the sufficient reward condition divided rewards equally, the second and third graders in the reward-deserved condition were more likely to share their M&Ms with a stranger. The findings of the present study may be important in discovering a developmental change in the sharing of reward allocations in sufficient and oversufficient reward conditions. Future research is needed to substantiate these hypotheses.

Another possible explanation for the fact that the older children in the reward not-deserved condition gave away fewer M&Ms to another child is that the experimental situation of receiving a reward much more than they deserved aroused feelings of dissonance. The older subjects in this condition may

have changed or distorted the amount they felt they deserved for cutting the shapes in order to reduce any uncomfortable feelings produced by the situation. By giving more candies away the younger children may have been trying to restore actual equity in the situation, and by keeping more candies the older children may have been attempting to produce a psychological equity (see Walster, Berscheid, & Walster, 1973). Older children in the reward not-deserved condition may have convinced themselves that the poor child who didn't have any candy didn't do any work, and therefore didn't deserve any candy. Therefore, they decided to keep most of the candy for themselves since they at least did some work.

A closer examination of the data in previous research (Olejnik, 1973, see Appendix D) found that while there were no differences between grades in terms of the number of M&Ms allocated to the task of cutting 20 shapes, there was a difference between kindergarten and third graders in terms of the number of M&Ms allocated to the task of cutting four shapes. The mean number of M&Ms awarded for cutting four shapes was significantly smaller for the third graders than for the children in kindergarten. Therefore, greater dissonance may have been aroused in the older subjects.

If an unpleasant psychological state was aroused by the inconsistency between what the child thought he deserved for cutting the shapes and what he actually received, then some recent data on the effects of affect on sharing may explain the present results. Moore, Underwood, and Rosenhan (1973)

found that second and third grade children will share more when in a positive mood and share less when in a negative mood. The second and third graders in the present study may have felt uncomfortable about receiving an unjust reward and therefore shared less in the reward-not-deserved condition. Since the effects of affect on sharing have not been demonstrated with kindergarten and first graders, it is possible that reward-deservedness rather than affective moods influenced sharing by younger children. Also, since children cutting 20 shapes were actually helping the experimenter more than children cutting only four shapes, the older children in the reward-deserved condition for cutting 20 shapes may have felt greater positive feelings of success and accomplishment and were therefore more willing to share their reward.

While both cognitive and affective systems interact to influence an individual's behavior, it is possible that sharing by the older children was more strongly influenced by their feelings or moods aroused in the experimental situation and that the behavior of the younger children was more strongly influenced by a specific rule or norm of deservedness. This interpretation is consistent with Piaget's (1932) position which suggests that younger children (under age seven years) are more egocentric and objective in their moral judgments (moral realism) while older children are more subjective in their moral judgments and sense of justice (moral relativism). Based on data obtained from children's marble games, Piaget

found that children under seven years are more likely to adhere to fixed rules or norms. It is very possible that parents and other socializing agents may stress that children play with their own toys, or ride their tricycle for the sake of maintaining peace among playmates when they are young. This experience reinforces the norm of deservedness rather than a norm of sharing. As children get older their experiences require greater cooperation and sharing of possessions and rewards. These experiences possibly provide greater intrinsic satisfaction for sharing since older children have better developed role-taking skills and can better perceive the needs and satisfactions of others. Further research on effects of positive and negative moods as well as the effects of sufficient, oversufficient, and insufficient rewards on sharing by children needs to be done.

The present study was valuable not only in demonstrating relationships between role-taking ability, moral judgments, and sharing behavior in children but also in extending some of the findings of previous investigators in this area. Future research investigations in this area should study the effects of manipulating role-taking ability and/or moral judgments on altruistic behavior in children. The findings of the present study also provide additional support for the effects of reward-deservedness on sharing by children. Interpretations of the data offered additional hypotheses regarding children's motivations for sharing which need to be tested.

TABLE 1

Significant Correlations Between Variables

with Age Partialled Out

	1	2	3	4	5	6	7	8	9
1. Sharing with friend	-								
2. Sharing with stranger	.41***	-							
3. Sharing total	.78***	.90***	-						
4. Helping	-	-	-	-					
5. Role-taking	.66***	.24***	.49***	-	-				
6. Moral judgments (-)consequences	.44***	.15*	.32***	-	.47***	-			
7. Moral judgments (+)consequences	.23**	-	.17*	-	.16*	.33***	-		
8. Moral judgments total	.43***	.15*	.32***	-	.40***	.87***	.75***	-	
9. Family size									-

Note: 3 is total for 1 and 2; 8 is total for 6 and 7.

* $p < .05$
** $p < .01$
*** $p < .001$

TABLE 2

Correlation Matrix for Role-Taking, Moral Judgments and Sharing Behavior

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Age		.27	.16	.24	.16	.23	.18	.15	.10	.20	.33	.14	.26	.28	.32	.08	.17	.27	.33	.04
2. Sharing with a friend	.15		.51	.83	.11	.41	.55	.58	.59	.64	.64	.39	.50	.59	.20	.07	.20	.22	.52	.08
3. Sharing with a stranger	-.05	.30		.90	.17	.10	.27	.37	.35	.32	.35	.20	.36	.35	.13	.18	.28	.28	.38	-.04
4. Sharing total	.03	.72	.88		.16	.27	.45	.53	.52	.53	.55	.32	.48	.52	.19	.15	.28	.29	.51	.01
5. Helping	.00	.03	-.11	-.07		-.08	.02	.09	.08	.03	.12	.03	.17	.12	-.04	.00	-.08	-.06	.06	-.05
6. Role-taking task 1	.42	.43	.01	.22	.07		.47	.41	.38	.70	.39	.28	.24	.35	.08	.06	.29	.21	.35	-.07
7. Role-taking task 2	.38	.66	.19	.47	.14	.41		.69	.79	.90	.29	.24	.32	.33	.15	.07	.10	.09	.27	-.04
8. Role-taking task 3	.26	.62	.13	.40	.15	.42	.71		.68	.83	.46	.32	.33	.43	.13	-.07	.25	.16	.38	.10
9. Role-taking task 4	.27	.54	.12	.36	.01	.42	.67	.70		.86	.39	.38	.40	.45	.23	-.10	.20	.17	.39	-.06
10. Role-taking tasks total	.40	.69	.15	.45	.12	.66	.87	.87	.86		.46	.37	.39	.47	.18	-.05	.26	.19	.42	-.03
11. Moral judgment (-) # 1	.24	.26	-.08	.06	.06	.37	.24	.36	.42	.42		.60	.63	.85	.13	.11	.41	.31	.75	-.03
12. Moral judgment (-) # 2	.26	.33	-.03	.14	.22	.42	.27	.41	.33	.43	.64		.67	.87	.10	.20	.34	.30	.75	-.12
13. Moral judgment (-) # 3	.36	.34	.01	.18	.06	.56	.40	.54	.47	.59	.62	.66		.88	.29	.27	.26	.37	.80	.00
14. Moral judgment (-) Total	.33	.36	-.04	.15	.13	.52	.35	.50	.47	.55	.86	.88	.87		.20	.22	.39	.38	.88	-.06
15. Moral judgment (+) # 1	.19	.40	-.10	.12	.01	.20	.26	.23	.29	.30	.44	.26	.39	.42		.28	.29	.73	.51	.03
16. Moral judgment (+) # 2	.20	.22	-.05	.07	-.18	.14	.10	.18	.15	.17	.38	.19	.39	.37	.63		.30	.69	.50	-.16
17. Moral judgment (+) # 3	.20	.10	-.06	.01	-.20	-.01	.09	.06	.07	.07	.15	.13	.11	.15	.26	.41		.76	.66	-.09
18. Moral judgment (+) Total	.25	.29	-.09	.08	-.16	.14	.18	.19	.20	.22	.40	.24	.36	.38	.77	.85	.75		.77	-.10
19. Moral judgments Total	.35	.39	-.07	.14	.01	.43	.33	.44	.43	.49	.80	.73	.79	.89	.68	.68	.48	.77		-.09
20. Family size	.11	-.21	-.07	-.15	.01	.15	-.03	.01	-.02	.03	-.10	.05	.02	-.01	-.18	-.08	-.13	-.16	-.09	

Note: Correlations for boys in upper half of matrix and correlations for girls in lower-half of matrix.
Critical r value for $p < .05 = .21$;
Critical r value for $p < .01 = .29$;
Critical r value for $p < .001 = .38$.

TABLE 3

Correlations Between Role-Taking Tasks With Age Partialled Out

	1	2	3	4	5
1. RTT_1	-				
2. RTT_2	.40	-			
3. RTT_3	.32	.67	-		
4. RTT_4	.32	.72	.68	-	
5. RTT_{Total}	.65	.88	.84	.86	-

Note: $p < .001$ for all of the above correlations.

Total is for 1, 2, 3, and 4.

TABLE 4

Correlations Between Moral

Judgment Stories With Age Partialled Out

	1	2	3	4	5	6	7	8	9
1. MJ $(-)_1$	-								
2. MJ $(-)_2$	.60	-							
3. MJ $(-)_3$	.58	.65	-						
4. MJ $(-)_{Total}$	.85	.87	.87	-					
5. MJ $(+)_1$	.22	.14	.27	.24	-				
6. MJ $(+)_2$	.21	.18	.30	.26	.41	-			
7. MJ $(+)_3$	.25	.21	.14	.24	.26	.34	-		
8. MJ $(+)_{Total}$	.31	.24	.32	.33	.73	.75	.75	-	
9. MJ_{Total}	.75	.73	.77	.87	.57	.57	.55	.75	-

4 is total for 1, 2, and 3; 8 is total for 5, 6, and 7;
9 is total for 4 and 8.

Note: Critical r value for $p < .05 = .15$
Critical r value for $p < .01 = .20$
Critical r value for $p < .001 = .27$

TABLE 5

Mean Scores For Role-Taking, Moral Judgments and Sharing

		Kindergarten		First		Second		Third	
		boys	girls	boys	girls	boys	girls	boys	girls
Role-taking scores	Mean	5.40	5.60	6.65	7.05	6.50	7.30	6.90	8.40
	SD	2.11	1.93	2.66	2.33	2.11	2.54	2.59	2.16
Moral Judgments (negative consequences)	Mean	1.00	1.35	1.80	1.60	1.60	1.60	2.00	2.50
	SD	1.17	1.31	1.32	1.27	1.31	1.27	1.30	1.10
Moral Judgments (positive consequences)	Mean	1.90	2.00	2.05	2.60	2.20	2.40	2.55	2.60
	SD	1.07	1.07	.89	.82	.95	.82	.89	.94
Moral Judgments (total)	Mean	2.90	3.35	3.85	4.20	3.80	4.00	4.55	5.10
	SD	1.83	2.00	1.84	1.85	1.82	1.84	1.85	1.41
Sharing with Friend	Mean	2.10	3.30	3.55	4.40	3.45	3.50	3.60	4.55
	SD	2.02	2.18	1.98	1.96	1.90	2.42	2.33	1.50
Sharing with Stranger	Mean	2.65	4.25	4.30	3.55	3.25	3.65	3.80	4.20
	SD	2.08	3.93	2.70	2.89	3.04	2.28	2.98	2.97
Sharing Total	Mean	4.75	7.55	7.85	7.95	6.70	7.15	7.40	8.75
	SD	3.39	4.90	3.81	3.61	4.22	4.03	4.65	3.70
Helping	Mean	27.05	33.70	40.50	39.55	36.00	39.10	35.15	34.90
	SD	21.35	17.40	13.85	14.17	18.47	14.54	18.09	17.23

Note: N = 20 in each cell.

TABLE 6

Summary of Analysis of Variance of Intentionality Responses on Moral Judgment Stories

Source	df	MS	F
Sex of Subject (A)	1	3.00	1.72
Grade (B)	3	9.68	5.56**
A x B	3	.11	.06
Error (between)	144	1.74	
Story Consequences (C)	1	29.40	34.18***
A x C	1	.08	.09
B x C	3	.77	.89
A x B x C	3	1.42	1.65
Error (within)	144		

** $p < .005$

*** $p < .001$

TABLE 7

Summary of Analysis of Variance of Role-Taking Scores

Source	df	MS	F
Sex of Subject (A)	1	21.02	3.92*
Grade (B)	3	31.03	5.78**
A x B	3	3.29	.61
Error	152	5.37	

* $p < .05$

** $p < .025$

TABLE 8

Summary of Analysis of Variance of Sharing With a Friend

Source	df	MS	F
Sex of Subject (A)	1	23.25	5.51**
Grade (B)	3	15.78	3.74*
A x B	3	2.47	.58
Error	152	4.22	

* $p < .06$

** $p < .025$

TABLE 9

Mean Number of M&Ms Shared with a Stranger

	Kindergarten	First	Second	Third
Reward Not-Deserved	5.30	4.65	2.40	2.50
Reward Deserved	1.60	3.20	4.35	5.25

N = 20 subjects per cell.

TABLE 10

Summary of Analysis of Variance of Sharing with a Stranger

Source	df	MS	F
Reward-Deservedness (A)	1	.5065	<1
Grade (B)	3	3.2230	<1
Sex (C)	1	10.5065	1.58
A x B	3	90.3617	13.59***
A x C	1	15.0060	2.25
B x C	3	9.3228	1.40
A x B x C	3	8.7563	1.31
Error	144	6.6465	

*** $p < .001$

FIGURE 1

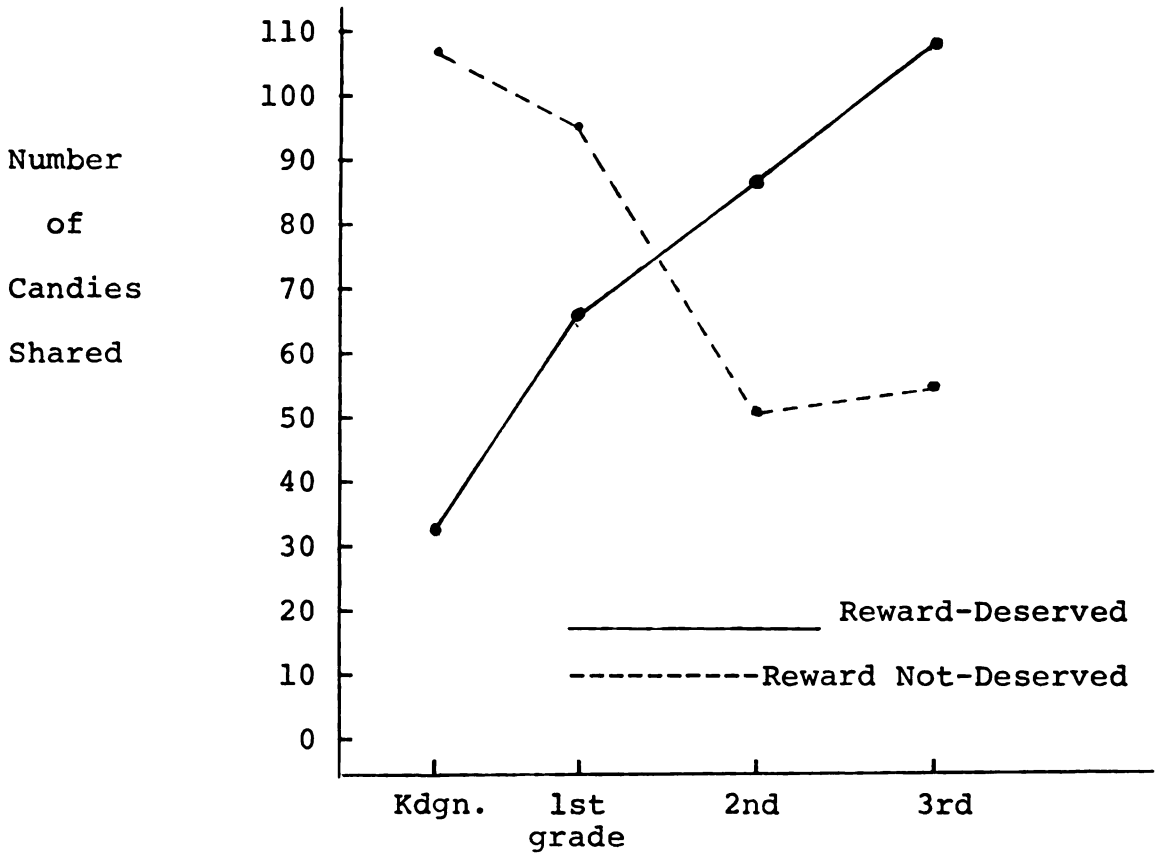

Figure 1. Number of candies shared by children at each grade in two experimental conditions.

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APPENDICES

APPENDIX A

Scoring for role-taking tasks

Seven picture story. A three category system used by Selman (1971) was used to score the responses to this role-taking task. Category 1 included responses which indicated that the dog frightened the boy and chased him up the tree, as well as a failure to just tell a four pictured story. Category 2 included responses which indicated that the subject could tell a straight four-pictured story but maintained that the dog frightened the boy up the tree when asked why the teacher said the boy was climbing the tree. Category 3 includes responses which told an accurate four-pictured story, as well as left out the motivational force of the dog frightening the boy. No points were assigned to responses in Category 1, one point to Category 2, and two points to Category 3 responses.

Naive-late-comer stories. In each of the three stories, responses which accurately described the feelings of the main character in the story were assigned one point. Responses to the question, "what would the friend say happened in the story?" which were included were scored for the amount of provided information included. Any responses including additional information which was unknown to the late-comer in the story (e.g. the dog was hit by the truck) were assigned zero points. Responses which did not include "privileged"

information were assigned one point (see Chandler & Greenspan, 1972). In addition, responses to questions about the emotional state of the main character were scored 0 for including privileged information and for responses which did not.

APPENDIX B

Role-taking task stories

One day a little girl was playing outside with her pet dog. The dog ran into the street and was hit by a truck. The dog died.

How does the girl feel now?

The little girl started walking home. A friend saw her and asked her if she wanted to go to the zoo to see some animals. The little girl said no and ran into her house. Her friend was surprised because the little girl enjoys seeing the animals at the zoo.

Can you tell me what happened in the story from the beginning? Why does the friend think the little girl is sad? Why does the friend think the little girl doesn't want to go to the zoo?

One day a little boy wanted to go outside and play with his friends, but his mother wouldn't let him go until he cleaned up his room. He didn't want to clean up his bedroom, so he went to the playroom and started throwing toys against the wall.

"How does this boy feel now?"

His brother Timmy came into the playroom from outside and was looking for a baseball. Timmy asked his little brother if he wanted to go outside to play. The little brother said

no and threw a toy at Timmy. Timmy was surprised that his brother didn't want to play baseball. So, Timmy went to play outside with some other children. "Can you tell me what happened in this story from the beginning? What would Timmy say happened in this story? Why does Timmy think his little brother is angry? Why does Timmy think his little brother doesn't want to go outside?

One day a boy and a girl were going to the store for their mother to buy a loaf of bread. When they were crossing the street they found a quarter and now they could buy some candy for themselves.

"How do the boy and girl feel now?"

As they were walking down the street, a friend came running by and asked them to play a game of hide and seek with a group of children. The boy and girl said no they didn't want to. The friend was surprised that the boy and girl didn't want to play hide and seek. So, the friend had to go play with some other children.

"Can you tell me what happened in the story from the beginning? What would the friend say happened in the story? Why does the friend think the boy and girl are happy? Why does the friend think the little boy and girl don't want to play hide and seek?"

APPENDIX C

Moral judgment stories - negative consequences (Armsby, 1971)

Once there was a boy named Bill. One day Bill's mother told him he had to help her set the table for dinner. Bill did not want to help. He was very angry because he had to help and so he let one of the cups fall to the floor and it broke.

"Compare Bill with...."

Once there was a boy named Henry. One day Henry was going into the kitchen of his house. Behind the kitchen door there was a chair with 15 cups on it. There was no way for Henry to know that the chair was behind the door. He opened the door and knocked over the chair. When the chair fell over, the 15 cups broke.

Which one of the two boys do you think was naughtiest, Bill or Henry? Why do you think he was the naughtiest?

Once there was a girl named Susan. One day Susan wanted to go outside but her mother would not let her. Susan became very angry and got a pair of scissors and cut a little hole in her new dress.

Compare Susan with....

Once there was a girl named Mary. One day Mary wanted to help her mother do some housework. She got a pair of scissors and was going to help her mother do some cutting. She

did not want to do anything bad but she accidently cut a big hole in her new dress.

Which one of the two girls do you think was the naughtiest, Susan or Mary? Why do you think she was the naughtiest?

Once there was a boy named Tom. One day Tom's dad went out of the house. While his dad was gone Tom wanted to do something bad. He went to his Dad's desk and spilled some ink on the table cloth and it made a little blot.

"Compare Tom with...."

Once there was a boy named Alfred. One day Alfred wanted to do something nice for his Dad. He went to his Dad's desk and was going to fill his ink-pen for him. While he was filling the ink-pen, he dropped some ink on the table cloth and it made a great big blot.

Which one of the two boys do you think was the naughtiest, Tom or Alfred? Why do you think he was the naughtiest?

Moral judgment stories - positive consequences

Once there was a boy named Bob. One day Bob was playing with a lot of blocks on a table. His friend did not have any blocks and was sitting on the floor watching. Bob was building a tower with his blocks and he accidently bumped the table and knocked 20 blocks to the floor. The friend who was playing on the floor then started to have fun playing with the 20 blocks.

Compare Bob with....

Once there was a boy named Ray. Ray was playing with a lot of blocks when his friend came over to play. Ray wanted his friend to have some blocks to play with, so Ray gave his friend three blocks while Ray played with the other blocks. The friend picked up the blocks and had fun playing with the three blocks.

Which one of the two boys do you think was the nicest? Why do you think he was the nicest?

Once there was a little girl who wanted to play with a lot of crayons but the crayons were on the top shelf of a bookcase in the playroom. Because the girl was little she could not reach them. Her friend Sally was playing a game and came running into the room. Sally accidently bumped into the bookcase and knocked 15 crayons off the top shelf. The little girl picked up the 15 crayons and was happy that she could now color in her book.

Compare Sally with....

Once there was a little girl who wanted a red crayon which was on the top of the refrigerator. The little girl couldn't reach the crayon because she was too short. Her friend Jane came into the kitchen and saw her reaching for the crayon. Jane wanted to reach the crayon and give it to the little girl. The little girl took the crayon and started to color in her book.

Which one of the two girls do you think was the nicest?

Why do you think she was the nicest?

Once there was a girl named Helen. One day Helen was going to give some money to a man who was collecting money for crippled children. Helen wanted to give the man one dollar, so she reached into her purse and quickly took out some money and gave it to the man. Later when Helen looked into her purse she realized that she made a mistake and had given away a five dollar bill instead of one dollar.

"Compare Helen with...."

Once there was a girl named Fran. One day Fran wanted to give some money to a man who was collecting money for crippled children. Fran did some work for her mother and earned two dollars. Fran gave the two dollars to the man who was collecting money for crippled children.

Which one of the two girls do you think was the nicest? Why do you think she was the nicest?

APPENDIX D

Reward-Deservedness for Work Inputs

This is a summary of an unpublished paper by Olejnik on the effects of sex, age, and work inputs on reward allocations by children.

In a 2 x 2 x 2 x 4 x 2 factorial design, the effects of sex of subject, work input of subject (cut either four or 20 shapes), order of task presentation, grade level of subject (kindergarten, first, second, or third grade) and the work input of other workers (cut either four or 20 shapes) on the allocation of M&M candy rewards was investigated in 320 elementary school children. Groups of children were asked to cut out either four or 20 shapes (circles, squares, triangles and ovals) from paper and then they were asked to allocate rewards to fictitions other workers who had also cut either four or twenty shapes. This was done to establish a norm of deservedness (sufficient reward) for what children believed was fair pay for working on the task of cutting the shapes.

There was a significant main effect for work input of other workers ($p < .001$). Children allocated significantly more M&Ms to the worker who cut 20 shapes than to the worker who cut four shapes. The mean number of M&Ms allocated to each worker at each grade is presented in Table D-1. Based on this data 19 M&Ms was considered a reward-deserved (sufficient reward) for cutting 20 shapes and a reward not-

deserved (oversufficient reward) for cutting four shapes. There was no significant effect for age on reward allocations.

TABLE D-1

Mean Number of M&Ms Allocated to Different Work Inputs by Children

	Kindergarten	First	Second	Third
Cut 4 shapes	9.99	8.83	9.12	7.59
Cut 20 shapes	20.47	18.82	20.01	19.30