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DEVELOPMENTAL CONSISTENCIES IN SOCIOMORAL KNOWLEDGE:
MORAL REASONING, PERSPECTIVE COORDINATION, AND ALTRUISTIC
BEHAVIOR

City University of New York

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by

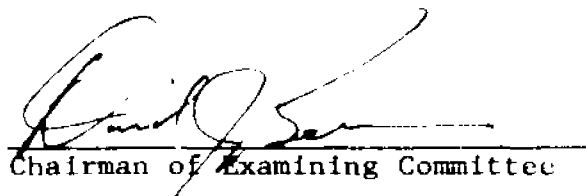
ROBERTA BLOTNER

A dissertation submitted to the Graduate Faculty in
Educational Psychology in partial fulfillment of the
requirements for the degree of Doctor of Philosophy,
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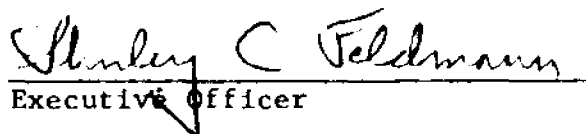
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ABSTRACT

DEVELOPMENTAL CONSISTENCIES IN SOCIOMORAL KNOWLEDGE:
MORAL REASONING, PERSPECTIVE COORDINATION
AND ALTRUISTIC BEHAVIOR

by

ROBERTA BLOTNER

Adviser: Professor David J. Bearison

One important issue within the area of moral development is the extent to which individuals are consistent in their behavior across different moral situations. Although cognitive-developmental theory maintains that there are cognitive structures within individuals which underlie both moral reasoning and behavior, research has not offered strong evidence of such consistency. Most studies which have examined the relationship between moral judgment and behavior have found either modest correlations or no relationship at all. A number of methodological problems in these studies may have contributed to the low correlations. First, reasons for behaviors are rarely obtained. Second, usually the behavioral measures consist of a single isolated behavior, e.g., cheating on a test or donating to a charity. Few attempts have been made to consider the underlying organization of behavior, or to determine the qualitative differences in levels of moral behavior.

In contrast to previous studies, the purpose of the present study was to provide a more sensitive test of the consistency of moral reasoning in hypothetical and practical contexts and between moral reasoning and altruistic behavior. An additional aim was to compare the relative influences of moral reasoning and perspective coordination on altruistic

behavior. By systematically varying these factors within a coherent theoretical framework, more specific interactions among these variables could be delineated than had been shown in past studies.

Measures employed were Damon's Positive-Justice Interview for hypothetical moral reasoning, Chandler's Bystander Cartoons for cognitive perspective coordination, an adaptation of Miller's recursive role-taking measure, and two contexts of altruistic behavior (helping trace pictures and sharing candies). Within both contexts, several conditions were constructed which involved presenting the subject with different information about another (fictitious) child. The types of information presented were based on Damon's hypothetical justice reasoning levels. The conditions included (1) past reciprocity -- the other child previously helped or shared with the subject, (2) merit -- the other child was a hard and good worker, (3) need -- the other child was poor, (4) coordinated reciprocity -- there were two other children, one who was a hard and good worker and the other who was poor, and (5) control -- no information about the other child was given. The number of pictures traced for the other child and number of candies shared with him were measures of altruistic behavior. Two measures of moral reasoning in each altruistic context were obtained: practical reasoning (subjects' reasons for their behavior) and ideal reasoning (subjects' judgments regarding the fairest thing to do).

The sample consisted of 120 males, ages 4 to 11 years, drawn from New York City Public Schools in a middle-class neighborhood.

Results indicated that hypothetical moral reasoning was significantly related to helping and sharing, with age partialled out. Interactions

between hypothetical moral reasoning level and condition altruism were significant in the helping but not in the sharing context. In addition, although perspective coordination was correlated with altruistic behavior, hypothetical moral reasoning was found to be a better predictor of helping and sharing behavior. Finally, hypothetical moral reasoning was found to be more advanced than either measure of moral reasoning in the practical context.

The findings from the present study emphasized the importance of the relationship between moral reasoning and altruistic behavior. As the results indicated, moral reasoning was better predictor of altruistic behavior than cognitive perspective coordination, recursive role taking, and age. In addition, these findings were important in demonstrating that certain types of moral reasoning were highly consistent with moral behavior. Moral reasoning within a practical altruistic context was more closely related to altruistic behavior than was moral reasoning within a hypothetical context.

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Chapter 1

INTRODUCTION

Moral development has become an important area in developmental psychology in recent years. Research has grown dramatically in this field and has focused on a variety of different topics, including moral behavior, cognition, guilt, personality correlates, parental antecedents, environmental influences, and moral education. One important issue in the area is the consistency of moral development within individuals. Is moral development a general, unitary process in which individuals respond in a stable, cohesive, predictable manner across situations, or does it involve specific responses which vary depending upon the context? Do individuals become more consistent across situations with increasing cognitive development? The psychological literature has addressed these questions to a limited extent, and few definitive conclusions can be drawn.

Cognitive-developmental theory maintains that individuals respond to moral judgment questions in an integrated, organized manner. It describes stages of development which represent different modes of thinking about moral issues and which involve a pattern of organization of thought at various levels of development.

Although the issue of consistency in children's moral behavior has been empirically examined for several decades, studies have provided limited and often conflicting results. An early study by Hartshorne and May (1928) demonstrated little generality in morality. They found, instead, that children respond quite specifically and often unpredictably to their many measures of honesty. They concluded that individuals respond in

diverse ways to various situations. The more features that situations have in common, the more consistent behavior will be.

More recent research has examined relationships among judgments and behaviors. These studies have found, in general, low positive correlations between measures. The findings indicate that there is both consistency and fragmentation in moral development. As Hoffman (1977b) has stated:

It seems clear that one can find both generality and specificity in moral, as in any other behavior. Individuals may be more or less disposed to honest or dishonest behavior, for example, but their actions are also affected by the situation. (Hoffman, 1977b, p.121.)

The low correlations, however, may be attributed in part to methodological and conceptual problems in these studies. Often, measures of moral reasoning involved issues which were too difficult for young children. Also, reasoning for the behaviors were rarely obtained.

The present study was designed to further explore the extent to which children are consistent in moral situations by taking into account several problems of earlier studies. The relationship between moral reasoning and altruistic behavior was examined. Several conditions of altruistic behavior were defined which correspond to levels of moral reasoning. Since there may be differences in moral behavior as well as in moral reasoning with increasing level of moral development, there should be a relationship between levels of reasoning and levels of altruistic behavior. The present study examined this issue.

An additional cognitive variable which has been found to bear an important relationship to moral behavior is perspective coordination. However, perspective coordination is a neutral, cognitive skill; it may not be as highly related to altruistic behavior as moral reasoning. This question was addressed in the current study.

The subsequent review includes a cognitive-developmental account of moral consistency, a review of the literature on the consistency of moral knowledge and the relationship between moral knowledge and perspective coordination, and concludes with a statement of the problem and hypotheses.

Cognitive-Developmental Theory

Cognitive-developmental theory proposes that individuals are consistent across moral situations. Psychologists within this tradition, such as Piaget, Kohlberg, Turiel, and Damon, have described morality as a series of stages or levels of development which are considered general modes of organizing moral information. These stages are characterized by the following (Kohlberg, 1969):

1. Each stage is a coherent unit. There are dominant principles or cognitive structures at each stage which organize thinking.
2. Stages differ qualitatively from each other. As development progresses, one stage incorporates and replaces the prior one.
3. Individuals actively structure their own morality; they do not merely conform to societal rules.
4. Stages occur in an invariant sequence.

According to Kohlberg (1969), there is a pattern of organization at each stage through which individuals understand and structure their social world. These patterns are stable dispositions which influence both judgment and conduct in a consistent manner. Cognitive structures, which are reflected in moral judgments, determine how individuals comprehend the social and moral situations they encounter. These judgments then influence behavior. Hence, individuals process information from the social environment in specific way at each level of development.

Structuralist theory accounts for the diversity of the individual's behavior in terms of "stage mixture" (Turiel, 1969). Although the final scores on moral judgment interviews are derived from the dominant stage,

or the modal score, subjects give responses which reflect stages of moral development above and below their mode. Thus, it is assumed that individuals are capable of responding at several levels in moral situations although one stage may be prevalent.

Piaget (1965) has described two stages of children's moral judgments. In the first stage, termed moral realism, children reason that rules are rigid and unchangeable; infractions are defined in terms of the punishments associated with them; and the seriousness of an act is determined by the amount of damages which occurred. The second stage, moral relativism, is characterized by the individual's understanding that rules are changeable, relative, and man-made. Infractions are defined by what is considered fair, and the gravity of a transgression depends upon the intentions of the actor.

In order to assess children's level of moral development, Piaget employed the "clinical interview" technique to determine the quality of moral reasoning (Lickona, 1976). He questioned children about rules, punishment, lying, cheating, and disobedience. He presented children with stories concerning moral issues and elicited their reasoning. For example, children were asked to compare the relative guilt of two children, one who accidentally broke ten cups while opening a door and another who broke one cup while sneaking into a cookie jar.

Kohlberg (1963) developed a more differentiated and comprehensive theory of moral development. He identified six moral stages which are grouped into three levels. The first two stages form the preconventional level whereby justice is determined with regard to physical acts and desires and is external to oneself. The next two stages form the

conventional level in which justice is viewed in terms of maintaining social order and living up to the expectations of others. The last two stages form the postconventional level whereby justice involves internal standards and principles based on one's own ethical values.

In order to assess individuals' levels of moral development, Kohlberg developed an interview which consisted of several moral dilemmas. An example of a dilemma is a story of Heinz, whose wife is dying and can be saved by a rare drug that can be obtained only from a druggist who charges more than Heinz is able to pay. Heinz steals the drug. Subjects are asked to discuss the resolution of the dilemma and their views regarding justice in this situation. Responses are scored and subjects are assigned to one of the six moral stages.

Although these cognitive approaches to moral development have focused primarily on understanding the dynamics of moral reasoning, there are a number of studies which have examined the relationship among measures of moral development. These issues will be discussed in the following section.

Empirical Research

This section will review the literature on the consistency among measures of moral knowledge. In the present study, moral reasoning and behavior were both considered components of moral knowledge. The early research of Hartshorne and May will be described followed by discussions of the consistency among measures of moral judgment, consistency among measures of moral behavior, the relationship between moral judgment and behavior, and finally, the relationship between perspective coordination

and measures of moral reasoning.

Hartshorne and May Studies

The classic studies of Hartshorne and May (1928-1930) represent one of the first and most comprehensive attempts to study morality. Their aim was to elucidate the nature of moral "character" by examining moral knowledge, motivation, attitudes, conduct, environmental influences, and the relationships among them ("social self-integration"). They tested 11,000 subjects, 8 to 16 years of age, over a five-year period. They administered questionnaires probing subjects' moral knowledge, which they defined as the awareness of moral rules and customs. They obtained data on topics including understanding of social-ethical vocabulary and ethical principles, and of ideas such as God, sex, work, fun, evolution, and social behavior. (It should be noted that their conception of moral knowledge was different from that used in the present study in which moral knowledge was considered the cognitive processes involved in moral reasoning and altruistic behavior.) They created behavioral situations designed to assess several types of moral conduct: honesty (lying, cheating, and stealing), cooperation, and persistence. These behavioral measures were embedded in different situational contexts: classroom, athletic contests, parties, and home.

They found that measures of both knowledge and behavior correlated with intelligence. The highest correlations obtained were between moral knowledge and honesty; the next highest were between knowledge and persistence. The average correlations between conduct and knowledge scores and among modes of conduct were modest: approximately .3.

One of their most significant conclusions was that honesty is not a unified personality trait. They set forth, instead, the "doctrine of specificity" which proposed that individuals respond differently in each situation, and that behavior is a reflection of experience. The more elements situations have in common, the more similar behavior will be. Hence, honesty is a series of specific responses to specific situations.

They did, however, acknowledge the existence of a certain amount of consistency in their data:

We ... are quite ready to recognize the existence of some common factors which tend to make individuals differ from one another on any one test or on any group of tests. (Hartshorne & May, 1928, V. 1, p.385)

Further, as they pointed out, there were rarely zero or negative correlations among any of their measures. Their emphasis, nevertheless, was on the specificity of behavior. They believed that the positive correlations among measures were not large enough to support the position of a unitary trait of honesty.

The Hartshorne and May (1928) conclusions regarding the lack of generality of moral behavior were challenged by Burton (1963), who reanalyzed the original data. In his principal component analysis, he included variables from the original study which demonstrated high reliabilities. The analysis isolated a first component which accounted for approximately 40% of the variance in the intercorrelation matrix. He concluded that there is a general, underlying trait of honesty within individuals. However, this is not an "all or none" phenomenon. Situational factors, he suggested, influence the degree of consistency within individuals.

Relationships Among Moral Judgments

Several studies which have investigated uniformity among moral judgments have used Piaget's moral judgment dimensions. These studies have either adapted Piaget's (1965) original stories or have devised Piaget-type items based on the same dimensions.

MacRae (1954) examined the "unidimensionality" of moral development, interviewing 544 boys, 5 to 12 years of age, with 13 moral judgment stories derived from Piaget. In order to assess whether there was a general, underlying factor in moral judgment, he computed the intercorrelations among the story scores, controlling for age. The scores were not all positively correlated with each other. Instead, four separate clusters of scores emerged, each correlating highly with each other and not with the others. He concluded that there were four separate aspects of morality: intentionality, immanent justice, perspective-taking, and attitude toward violating rules.

A study by Boehm and Nass (1962) examined responses of children, 6 to 12 years old, on stories concerning intentionality, lying, and authority. They found a great deal of variability, depending upon the story. They suggested that stage of development varies with the specific situation. Harris (1970) obtained similar results in her study of 200 black and white children in grades 4, 5, and 6. Stories involving five Piagetian moral dimensions were presented. She found low positive correlations among the measures, $r = .12$ to $.44$.

Johnson (1962) interviewed 807 children in grades 5, 7, 9, and 11 with stories illustrating several Piagetian dimensions in a study which investigated the relationship among moral judgments. Between areas of judgments (e.g., intentionality and reciprocity), he found low positive correlations, $r = .00$ to $.34$. Furthermore, the correlations did not increase with age. Correlations of items within areas of moral judgment

(e.g., between questions of intentionality), however, were higher, ranging from .14 to .76.

In sum, there is little evidence of uniformity among Piagetian moral judgments. Studies have found low positive correlations across moral dimensions. Research has shown, however, more consistency within areas of judgment; in these studies moderate positive correlations were found.

Influence of Test Characteristics. Several studies have suggested that inconsistency among judgments may be due to varying test characteristics. Medinnus (1959) presented to 6-, 8-, 10-, and 12-year-old children two of Piaget's immanent justice stories. He found that subjects demonstrated more mature judgment in one story than in the other. The possible reason for this discrepancy, he suggested, might be the difference in the amount of information offered. Subjects were more advanced on the story which gave more detail and described a situation more familiar to the child. Familiarity of story theme was also found to facilitate more mature justice reasoning by Magowan and Lee (1970). Moreover, in this study, sex of the main figure determined the responses of subjects, who were 9 to 12 years of age. More immature moral judgments were given when the central figure in the story was male. In addition, Keasey (1977) has found that it was easier for children to consider intentions when the hypothetical situation involved themselves rather than others. He presented kindergarten-and first-grade children with Piaget-type stories under two conditions: (1) the subjects' own names were used, and they were told to pretend they were in the situation; and, (2) other persons' names were used. He found that the older children focused primarily on intentions in both conditions. However, in the

kindergarten group, there was a significant difference between the conditions: 40% in the other-oriented condition gave intentional responses compared to 68% in the self-oriented group.

There is recent evidence which has demonstrated that moral judgment responses may be affected by the medium in which a dilemma is presented. Several studies have used videotapes to present Piaget-type stories of intentionality. Chandler, Greenspan, and Barenboim (1973), and Farnill (1974) found that the use of videotaped moral situations elicited more advanced intentionality judgments than the verbal mode of presentation which has traditionally been used. Moreover, Berndt and Berndt (1975) found no correlations between moral judgment items across videotaped and verbal media. Therefore, as these studies indicate, homogeneity of moral judgments depends on format and story characteristics.

Kohlberg's Research. There is little evidence regarding consistency among judgments on Kohlberg's moral interview. Kurtines and Grief (1974) have criticized Kohlberg's measure on a number of points: there has been no standardization of the interview; therefore, it is administered differently across studies. Scoring can be done in two ways and is complex and ambiguous. One study which has examined consistency in Kohlberg's dilemmas was conducted by Hudgins and Prentice (1975). They found only a minority of subjects used a "pure style" of reasoning; that is, few individuals used a single response type at least 75% of the time.

Relationships Among Moral Behaviors

Honesty and Resistance to Temptation. Nelson, Grinder, and Mutterer (1969) suggested that the generality/specificity issue remained unresolved due to several inadequacies in the

prior studies. First were methodological problems such as the failure of Hartshorne and May to report sample sizes and to compute inter-correlations from the same cases. Secondly, the separate influences of situations, persons, and interactions between the two were not included in earlier research. Finally, they believed that before conclusions might be drawn regarding this issue, replications were necessary. Thus, the purpose of their study was to replicate and extend the earlier studies taking into account the above factors. Subjects, 104 children, 11- and 12-years-old, were tested on six behavioral measures of honesty similar to those used by Hartshorne and May (1928). A factor analysis revealed a general honesty factor which accounted for 35- to 40% of the variance, a finding consistent with the Burton study. Furthermore, they found evidence of some situational specificity; subjects frequently varied across tests of honesty.

Several additional studies have examined the relationship among situations involving honesty. Hetherington and Feldman (1964) examined cheating in college students. Subjects had opportunities in three different situations to cheat on examinations: (1) an hourly exam which subjects graded themselves, (2) an essay exam with questions given one week before, and (3) an oral exam in which the professor was called from the room while subjects had access to the answers. They found that 59% of subjects cheated on at least one of the tests. Of those who cheated, 24% did so in all three situations, 64% cheated in two, and 12% cheated only once. Hence, approximately 52% of the total sample cheated repeatedly on exams. These results suggest that there is consistency in test-cheating behavior and provides support for Hartshorne and May's position that the

more similar situations are, the more consistent individuals' behavior will be.

In their book Identification and Child Rearing, Sears, Rau, and Alpert (1963) investigated the relationship, in four-year-old children, among several components of "conscience," including six behavioral, resistance-to-temptation situations and a fantasy measure of guilt. They found low positive correlations among resistance-to-temptation measures; the median correlations were .23 for girls and .24 for boys. Further, they found little evidence of a relationship between projective measures of guilt and children's actual behavior.

Schwartz, Feldman, Brown and Heingartner (1969) investigated the relationship between honesty and helpfulness in male college students. Honesty was assessed in an achievement context whereby subjects were paid for each correct answer they gave on a vocabulary test. Answers appeared on the reverse side of the page; subjects could readily cheat by looking through the translucent paper. The measure of helpfulness was the subjects' responding to a stranger's request for aid in completing a puzzle. They found no relationship between helping and cheating. The authors, however, cautioned that these findings should not be interpreted as evidence supporting the argument that behavior is situationally specific. Instead, they maintained that it is necessary to look beyond overt moral behavior to factors such as affiliative and achievement needs to more fully understand consistency of conduct.

Evidence for the generality of moral behavior in male undergraduates was found by Heilman, Hodgson, and Hornstein (1972). Subjects were lead to believe that they had accidentally caused harm to another by dropping

a file of important slides on the floor while leaning on a table which collapsed. Several subjects who were termed "the uninvolved" did not report their involvement in the accident, made no effort to remedy the situation, and cheated more frequently on memory tasks.

Peer and teacher ratings of children's morality have been explored in relation to honest conduct. Results of these studies vary; some demonstrated low correlations and others none. Employing teachers' ratings of children's disobedience and untrustworthiness, plus two behavioral tests of cheating, Grim, Kohlberg, and White (1968) did not find significant correlations between ratings and conduct in first-through sixth-grade children. Similarly, Burton (as reported in Burton, 1976) found no relationship between teacher' ratings of honesty and a situational test of honesty in 4- and 5-year-old children.

On the other hand, Leveque and Walker (1970) did find a positive relationship between teacher ratings and cheating behavior. They administered geometry tests to high-school boys who were subsequently asked to score their own papers. Teachers independently rated each student on a five-point scale of honesty. Significant positive correlations were found between teacher ratings and students' actual cheating, $r = .38$. In addition, Walsh (1969) found an interesting pattern of relationships between teacher ratings of children's self-control and their resistance to temptation. Teachers gave high ratings to those children showing rigid control in a temptation situation. Children who yielded to temptation or showed natural curiosity toward attractive toys were rated less favorably by teachers.

Finally, Mussen, Rutherford, Harris, and Keasey (1970) found a positive relationship between peer ratings and moral conduct in 11- and 12-year-old children. Sociometric measures were utilized; children were asked to rate their classmates' moral behavior, for example: Who would not cheat? Who plays fair? Who would help smaller children? Two factors were isolated: honesty and altruism. The two situational tests employed were a resistance to temptation game and the prisoner's dilemma game. They found positive correlations between honest conduct and honesty ratings for boys, $r = .29$, and for girls, $r = .27$. Altruistic behavior, although not related to the altruistic factor, was related to several individual altruistic items on the peer-rating questionnaire for boys. For girls, altruistic behavior was not related to any of the peer ratings.

Prosocial Behavior. A number of studies have examined the relationship among prosocial behaviors such as generosity and helpfulness. These results also vary in terms of the extent of consistency found. Green and Schneider (1974) studied developmental changes in altruistic behavior. Subjects were boys ranging in age from 5 to 14 years, and were presented with three opportunities to demonstrate altruism: sharing candy with other children, helping the experimenter pick up pencils which had fallen from a table, and volunteering free time to help needy people. No significant correlations were found among measures of altruism. However, they found significant effects of age in both helping and sharing; both increased with age. Age was not significant, on the other hand, in volunteering to work for a charity; it was present in high levels at all ages.

Staub (1974) reported finding consistency in altruistic behavior in college freshmen. He found a significant relationship between the number of data sheets scored to help an experimenter and participation in collecting money for charity in an independent situation.

Generosity was also explored in 7- and 11-year-old children by Rushton and Weiner (1975), who employed three behavioral tasks. They found generosity to a friend positively correlated to generosity to a charity, $r = .24$. Moreover, they found a negative relationship between generosity and competitiveness, $r = .55$.

Yarrow et al. (1976) carried out a study of altruistic behavior in both experimental and naturalistic settings. They observed three types of prosocial behavior: (1) Helping - in one instance the experimenter spilled tennis balls and in another he/she dropped silverware on the floor. (2) Sharing - in one situation a snack ran out before the experimenter was served and the subject was given more; and in the second, the experimenter wanted to play a game which the subject was using. (3) Comforting - in one instance the experimenter expressed pain after pinching a finger in a drawer, and in the other, after reading a sad story, the experimenter began to cry. In addition, children were observed during free play in nursery school. Subjects were 3- to 7 1/2-year-old, nursery-school children. They found some consistency within subjects. Sharing was significantly correlated with comforting, $r = .32$. However, neither sharing nor comforting were correlated with helping. Furthermore, they found no relationships in prosocial conduct across settings; that is, there were no correlations between experimental and naturalistic behaviors. They concluded that prosocial behavior is a complex process in which both

the situation and individual motivation must be considered.

Finally, the relationship between teacher ratings of children's prosocial dispositions and their actual conduct has been examined, and again, results are inconclusive. Rutherford and Mussen (1968) found that nursery-school children who scored high on a generosity task which involved sharing candies were rated by their teachers as kinder, more cooperative, and less aggressive. The authors concluded that generosity is part of a general disposition toward altruism.

Staub (1971) obtained teacher ratings on four pupil characteristics: initiation of social activity, competence, expression of affection toward children, and need for approval, and he examined the relationships between these ratings and children's willingness to help a child in distress. An interesting pattern of findings emerged. Significant positive correlations were found between boys' behavior and teacher ratings, $r = .17$ to $.42$, and significant negative correlations were found between girls' behavior and teacher ratings, $r = -.23$ to $-.45$. Staub has suggested that the teachers' ratings may have represented a general sex-typed evaluation of the children. Thus, good girls may be well-behaved, but good boys may be active and independent. Since in this study helping involved being independent, i.e. leaving the room to help a crying child, boys might be more inclined to do it. Hence, the correlations were higher for boys.

In sum, it is difficult to draw any firm conclusions regarding the generality of children's altruistic behavior. Most studies find low to moderate positive correlations among measures. This demonstrates that there is some consistency in behavior. However, it also reveals that there

is specificity as well. Rushton (1976) has raised a number of points with regard to this issue. He has criticized behavioral studies for attempting to determine relationships between specific tasks. Instead, batteries of tasks should be intercorrelated to minimize the random error. In addition, he has contended that motivation should be taken into account when studying altruism. Overt behaviors which may appear inconsistent, may, in fact, be indicative of the consistent application of a moral principle. For example, an individual may lie in one situation and not in another; in both occasions the behavior may arise out of a concern for the welfare of others.

Relationship Between Moral Judgment and Behavior

Research in this area has examined the generality issue by relating moral reasoning to moral behavior. This approach assumes that an individual's level of moral reasoning should predict the amount of moral behavior displayed. Findings from these studies have shown small positive correlations between measures.

Moral Judgment and Honesty. Several studies have explored the relationship between moral reasoning and tasks requiring honesty and/or resistance to temptation. Grinder (1964) tested the hypothesis that resistance to temptation is related to maturity of moral judgment. He found no relationship between resisting temptation and judgment as measured by Piagetian stories of intentionality, in second-, fourth-, and sixth-grade children. There was, however, a relationship between obedience to rules and moral judgment in girls.

Similar results were found by Nelson, Grinder, and Biaggio (1969) whose subjects were sixth-grade children. The purpose of their study was to examine the interrelationships among cognitive, personality, and behavioral aspects of moral development. They administered six measures of resistance to temptation which varied in type of incentive offered, presence or absence of peers, and academic or nonacademic task. In addition, the Kohlberg moral-judgment interview and a battery of personality tests were given. They found few significant raw correlations between conduct and judgment measures. Furthermore, in a factor analysis of all the measures, cognitive and behavioral measures were independent factors for girls. However, for boys, these measures defined the major factor, offering some support for the consistency hypothesis. There was one methodological problem in this study which causes the findings to be of questionable significance. Measures were spaced across a time span of 2 1/2 years. Behavior tests were given first; one year later cognitive measures were administered; and one year after that the personality assessments were given.

On the other hand, there is some support for the relationship between moral thought and honesty in a number of studies. Kohlberg (1958) found significant positive correlations between level of moral judgment and teacher ratings of moral conscientiousness, $r = .46$, with teacher ratings of fairness with peers, $r = .54$, and with peer ratings of moral character, $r = .58$.

Furthermore, Kohlberg (1969) found that maturity of moral reasoning is related to less cheating. In a sample of college students, he found 10% of subjects who reasoned at a principled level cheated compared to 42% of subjects at the conventional level. In a sample of sixth-grade

children, he found 20% of those at principled level, 67% of the conventional children, and 83% of the preconventional subjects cheated.

Finally, Kohlberg (1969) reported results from a Milgram-type (1963) obedience study in which subjects were ordered to give severe electric shocks to a confederate participant. He found 75% of subjects at stage six quit rather than continue to give shocks, compared to 13% of subjects at lower stages, although the sample size was very small (N = 30).

Different findings were obtained by Podd (1972) in a study employing male college students. He found that preconventional subjects were no more likely to give higher-intensity shocks than subjects at the postconventional stage, in a Milgram-type task. In a posttask interview, however, subjects differed in their motivation for stopping the task. Preconventional subjects were more likely to give reasons which related to feeling pressure from others, e.g., "He was angry at me." Postconventional subjects, on the other hand, saw the situation as within their own control, e.g., "I do not think he should have to endure more shock."

Schwartz, Feldman, Brown, and Heingartner (1969) investigated the relationship between moral thought and action in two different situations: helping and not cheating. They found a significant relationship between level of moral judgment and not cheating in their sample of male college students. Seventeen percent of those classified as high in moral thought cheated whereas 53% of subjects who scored low cheated. They did not find a significant relationship between level of moral judgment and helpfulness, although results were in the predicted direction. Although no overall relationship was found between judgment and helping, further analysis did suggest a link. When the stage six subjects were compared to

those at the conventional level, a significant relationship was found. Eighty-six percent of subjects at stage six scored high on the helpfulness dimension, compared to 33% of conventional subjects.

Harris, Mussen, and Rutherford (1976) also found evidence that moral maturity was related to resistance to temptation. Subjects in this study were fifth-grade boys; they were presented a variety of measures: (1) a sociometric measure involving peer ratings of honesty, obedience, and altruism; (2) a self-concept scale; (3) a resistance to temptation measure in which subjects were given a test to answer and score, thus making it easy to cheat; and (4) a Kohlberg interview. They found that moral judgment was positively correlated with resistance to temptation, $r = .45$, with age partialled out $r = .27$. On the sociometric measure, nine of the eighteen items on the peer questionnaire were significantly correlated with maturity of moral judgment, $r = .06$ to $.63$; these items dealt with altruistic behaviors such as cooperation, helping, consideration, sharing, and dependability. Furthermore, on the two factors derived from the questionnaire, altruism was significantly correlated with moral judgment, $r = .41$, but honesty, the second factor, was not significantly related to judgment.

Level of moral judgment was also related to conformity behavior. Saltzstein, Diamond, and Belenky (1972) classified seventh-grade children into one of Kohlberg's stages of moral development and exposed them to an Asch-type conformity situation, where they were required to match a strip in length to a standard after hearing the opinions of a confederate group. They found that conformity was related to moral judgment. Stage

three subjects were the most likely of all the groups to conform, whereas those at stages four and five conformed the least of all the groups.

Moral Judgment and Altruism. A number of studies have examined moral judgment in relation to prosocial behaviors. Staub (1974) conducted a series of experiments to determine the conditions that influence individuals' helping a person in distress. In one study, a situation was set up whereby at the same time that subjects were performing an irrelevant task, they heard tape-recorded sounds of distress emanating from a nearby room. The only measure of several personality assessments administered which related to helping behavior was level of moral reasoning. Those who demonstrated higher levels of moral development as measured by Kohlberg's moral judgment interview, helped more. One hundred percent of stage six subjects compared to 57% of those at lower stages helped. A second study in which adult male subjects were tested produced similar findings. The experimental situation proceeded in the following sequence: First were sounds of distress (moaning) emanating from an adjoining room, followed by a confederate making direct contact with the subject complaining of stomach cramps. Eventually, the confederate asked the subject for help (filling a perscription). Positive correlations were found between helpfulness and moral maturity, $r = .46$.

Emler and Rushton (1974) conducted a study to further elucidate the relationship between cognitive and behavioral variables in morality, in children 7 to 13 years of age. They employed two cognitive measures: role-taking and Piaget's distributive-justice dilemmas. The behavioral measure involved the opportunity for subjects, after winning tokens in a game, to donate a portion to a charity under either of two conditions:

sympathy (unfortunate circumstances of the children were emphasized) or non-sympathy (neutral descriptions were presented). They found that generosity bore no relationship to role taking, but was significantly related to moral judgment. Moreover, sympathy was not significantly related to generosity although there was a nonsignificant trend for the sympathy condition to elicit more donations. This study then, supports the consistency view since it demonstrates that specifically moral judgment and no other cognitive variables such as role taking underlies moral behavior.

In a followup study, Rushton (1975) sought to determine whether moral judgment was a determinant of behavior or a covariate. He reasoned that if judgment determined behavior, then it may affect the reception and perception of the moral situation. Therefore, factors such as modeling and preaching may be differentially experienced, depending upon the level of moral judgment (high or low), model behavior (selfish or not), and model preaching (selfish or neutral). Level of moral judgment had a significant effect on donations: subjects high in judgment donated more tokens than those who scored low. Modeling was significantly related to donating tokens, while preaching had no effect. Moreover, subjects who scored high in moral judgment rejected the selfish preacher in a model evaluation more often than those having a low moral-judgment score. He concluded that although this study did not prove the existence of a causal relationship between judgment and behavior, judgment did have some effect as indicated by the model evaluation.

Turiel and Rothman (1972) have also investigated the influence of moral judgment on behavior by exposing subjects to different levels of reasoning about a situation and observing the effects on subsequent behavior. Subjects in this study ranged in age from 12 to 15 years. After subjects were exposed to reasoning one stage above and one stage below their dominant stage, they were asked to choose between two courses of action, either continuing or discontinuing a task. They found that subjects at stages two and three were not influenced in their behavior by advanced reasoning; however, stage four subjects were. Interestingly, subjects at all stages judged advanced statements as being better and correct. These findings suggest that behavior is influenced by reasoning differentially at each developmental level. Rothman (1976), using a slightly more refined procedure, replicated and extended the findings of the original study. Her subjects were boys, 11- to 15-years-old. In four experimental conditions she varied presentation, by confederates, of alternative behavioral choices to include: opinions with reasoning, without reasoning, and presentation as a hypothetical situation. Subjects were required to decide what to do. As in the previous study, reasoning affected the behavior of subjects at stage four and not those at stage three, although both groups favored mature reasoning. In addition, there was no difference between choices in the conditions involving actual behavior and those in which a hypothetical choice was required. Rothman suggested that level of moral judgment may determine how individuals respond to new information.

Dreman (1976) studied sharing and moral judgment in Israeli children in grades 1, 4, and 7. One of the hypotheses was that greater sharing would occur under conditions of expected reciprocity, and this relationship

would increase with age and level of moral development. Behavior was assessed through an actual donation situation and a verbal justification for sharing. Results showed a significant correlation between moral judgment (assessed by Piagetian stories of intentionality) and donations, $r = .46$, although justification and donation were unrelated. In addition, subjects with high intentionality scores donated more in the reciprocity condition.

Naturalistic Studies. Naturalistic studies have demonstrated similarly equivocal results on the consistency issue. One important study which attempted to clarify the relationship between moral judgment and political behavior was conducted by Haan, Smith, and Block (1968). Their sample was comprised of college students who were classified according to their stage of moral development and to the type and extent of political involvement. (At that time an important political issue on California campuses was the Free Speech Movement protests.) Results showed that principled subjects were politically more radical and active. They supported the Free Speech Movement more strongly and belonged to more political organizations. In addition, they were more involved in a greater number of political activities, e.g., picketing (75% of stage six males and 55% of females, compared to 9% and 13% of stage four subjects, and 56% and 0% of stage two subjects respectively); teach-in (stage six males 75% and females 36%, stage four 17% and 13%, and stage two, 62% and 20% respectively). Conventional groups were generally more conservative politically, and few participated in political activities. Preconventional subjects were liberal or radical, supported the Free Speech Movement, and belonged to a moderate number of organizations.

The investigators concluded that there is evidence of a relationship between moral judgment and conduct. Despite the fact that stage two and six subjects seemed to be more similar in political behavior than other groups, reasons for participation differed. These results emphasized the difficulty in predicting action from judgment. There were a number of reasons which lead to the same act: stage four subjects, for example, sat in because the authorities violated their legal rights, whereas stage six subjects were more likely to be concerned with liberty and civil rights.

Leming (1974) investigated political activity in high-school students. He compared activists to nonactivists in participation in community affairs and in protest against the Viet Nam War, and in stage of moral reasoning. Contrary to predictions, activists tended to score at lower stages of reasoning than nonactivists: in the activist group 65% were in stage three and 13% were in stage four, whereas among the nonactivists, 50% were at stage three and 34% scored at stage four.

Delinquency in adolescents was found to relate significantly to lower moral-development scores by Kohlberg (1958) in a small sample of 16-year-old boys. This finding was replicated by Fodor (1972) who interviewed a group of adolescent, delinquent males and a matched group of nondelinquents. He found that although the mean scores of both groups fell at stage three, the delinquent group scored lower within that stage.

In sum, numerous attempts have been made to relate thought to action. A wide variety of moral behavior have been studied in a number of different contexts. Contradictory findings were often obtained; when correlations

were found, they tended to be somewhat low. Thus, the preceding studies do not seem to make a strong case to support the consistency hypothesis.

Damon's Research. Damon (1977a) has criticized previous studies which have attempted to determine the relationship between moral thought and action, describing a number of problems which may have accounted for the lack of results. One problem lies in the measures. Most studies have used Kohlberg's dilemmas while employing young children as subjects. These dilemmas deal with topics such as stealing drugs to save a life. These issues are not within a child's range of experiences. Moral issues for adults are not necessarily meaningful moral concerns for children. (In studies of moral behavior, the same criticism can be made. For example, donating money to a charity may not be a moral issue for young children.) Therefore, Damon contended, they are not adequate measures of moral judgment for children at young ages.

A second problem in past studies, according to Damon, lies in the distinction made between thought and action. Since they are both involved in social interaction, thought cannot be ignored in assessing action. Investigators must discover what the particular action means to the child. Damon considers both reasoning and action forms of social knowledge which are expressed in different situations. Thus, in assessing practical knowledge, both verbal and active conduct must be observed. The child must be asked the meaning of the behavior. Damon postulated that there are "organizing principles," or cognitive structures, which govern behavior as well as reasoning. They are not based on content, but represent a "particular organization of an aspect of reality" (1972, p.27). Therefore, an individual may make different overt responses

in two situations and yet be consistent with regard to structure. Furthermore, two individuals may respond similarly to a situation, but for different reasons. Few of the prior studies have examined this concept of organizing principles with regard to moral behavior.

Damon (1977a) studied several different areas of social development, including positive justice. In an attempt to remedy the problems of prior research, he conducted a study to clarify the relationship between reasoning and behavior. He reformulated the issue to include hypothetical knowledge (reasoning on hypothetical dilemmas) and practical knowledge (both reasoning and behavior in a "real-life" situation). In order to assess hypothetical knowledge of justice concepts, he administered a positive-justice interview which concerned the distribution of rewards from a class sale of paintings. Practical knowledge was evaluated through a real distributive-justice situation in which candy was divided among children for making bracelets. He developed four experimental conditions: those who made the prettiest bracelets, the biggest, the nicest child, and the youngest. Subjects were asked to distribute candy among these four children. Moral behavior was measured by the amount of candy given to each child. In addition, reasoning in the "real-life" situation was measured. He tested 144 children, ranging in age from 4 to 10 years. He found a correlation of .78 between hypothetical and practical reasoning; with age partialled out $r = .26$. With regard to conduct and hypothetical reasoning, he found a relationship between the lowest level of reasoning (egocentric) and giving more candy to oneself. Further, there was a tendency, though not significant, for children at the highest levels (2A and 2B) to give more candy to the youngest child, thus,

taking into account the special needs of others. There was no tendency for stage 1 children (those who believe in equality for everyone) to divide the candy more equally than children at the other levels.

There are certain methodological and theoretical problems in Damon's study. First, peer pressure may have played a role in the patterns of distribution. The distribution task involved a group of three subjects dividing the reward, candy bars, among themselves. Although the children were interviewed individually to determine their distribution decisions, the responses of the subjects would become obvious to the others in the group. Thus, the subjects may have divided their rewards with less variation than if their responses were to be totally anonymous.

A second problem involved the confounding of variables. As discussed above, there were four experimental conditions in this study: those who made the prettiest bracelets, the biggest child, the nicest child, and the youngest. Each subject himself fell into one of the conditions. The task required the subject to divide the candy among the other three and him/herself. Thus, each subject's distribution task varied, since subjects differed in the position they occupied in the distribution compared to the others in the group.

Third, it appears that the positive-justice levels cannot be considered "stages" as defined by cognitive theorists (Kohlberg, 1969). As Damon (1977a) has discussed, they were considered "levels," since they did not meet the criteria that each stage is a coherent unit which becomes incorporated into each succeeding stage. The concepts in the positive-justice theory, equality, merit, and equity, emerge in an age-related sequence. However, they all continue to be present throughout life; the more mature concepts do not replace earlier ones. These levels then,

involve an accumulation of knowledge with development rather than a reorganization.

In sum, the literature on consistency in moral development, as reviewed in the foregoing sections, has produced a variety of results. Some studies have found no relationship among measures. Most studies have demonstrated small to moderate positive correlations. These findings are in accordance with Mischel's (1968) position indicating that in personality research average correlations among variables range at approximately .30. Clearly, correlations of this magnitude, although modest, do indicate the existence of some generality among measures of morality.

Kohlberg (1969) has suggested that there is not a direct correspondence between judgment and action; moral structures underlie both. Although moral reasoning is a powerful predictor of moral action, it is only one of several factors which influence it. The function of judgment is the "cognitive definition of the situation" (p. 397). Behavior emanates from moral principles. Once these principles are known, behavior can be predicted. However, Kohlberg (1971) has cautioned that behavior cannot be categorized through observation alone. It can only be fully understood with regard to how the individual interprets his or her actions. Thus, in order to determine whether hypothetical reasoning is consistent with action, it is necessary to understand the explanation for the behavior. Damon has attempted this with some success.

One purpose of the present study was to further delineate the relationship between patterns of moral reasoning and behavior. In the studies described above, the moral-reasoning-behavior relationship was examined by determining the influence of several moral reasoning levels on one facet of moral behavior, e.g., altruism, in order to observe whether the frequency of

moral behavior increases with moral judgment level. Cognitive theory, however, predicts that behavior may change as well as reasoning since cognitive structure underlies both reasoning and behavior. The present study attempted to resolve the methodological limitations of the earlier studies by examining moral behavior in a series of different conditions reflecting different levels of moral-cognitive development. It was hypothesized that depending upon children's level of moral reasoning, they would behave differently in these conditions. In addition, the reasoning for behavior was elicited in order to further understand the relation between reasoning and behavior.

In order to assess cognitive level, Damon's (1977a) measure of positive justice was employed for a number of reasons. First, it is a measure appropriate for young children. The moral dilemma involved dividing money among a group of children, a situation familiar to most children. Secondly, one dimension reflected in Damon's positive-justice levels is reciprocity, which he defined as restoring equilibrium or making up for an imbalance in a social situation. According to Damon, understanding reciprocity is crucial to the development of moral (altruistic) behavior.

Reciprocity, according to Damon, emerges in a series of levels which change qualitatively with increasing cognitive maturity. Damon (1977a) has described the developmental progression of reciprocity with regard to his stages of positive justice:

Stage 0-A. Very infrequent and primitive reciprocity at this stage. The self and those associated with the self are rewarded, usually arbitrarily.

Stage 0-B. The self is favored at this stage. Justifications involve inconsistent and fluctuating criteria. Payback or reciprocity occurs because of arbitrary qualities such as physical attributes.

Stage 1-A. Justice judgments are rigid at this stage. Everyone is treated the same; no real merit is considered. A stable but primitive mode of reciprocity is present. People are rewarded for their mere presence in the situation. Rewards are indiscriminate, but consistent.

Stage 1-B. Justice judgments are rigid at this stage. Payback and merit are understood, but are uncoordinated with other responses. Several claims to justice are not reconciled.

Stage 2-A. Need is understood at this stage. Some compromise is made to resolve conflict. There is more flexibility at this stage.

Stage 2-B. The individual is capable, at this stage, of the successive weighing of possibilities: need and merit; and also the anticipatory coordination of reciprocal acts.

This progression is reflected in judgments offered in response to Damon's positive-justice interview. According to cognitive-developmental theory, these levels of reciprocity should also be related to prosocial behavior. Thus, in a sequence of prosocial behaviors, each reflecting a different level of reciprocity, one might expect to find developmental differences with regard to performance on these practical tasks similar to those found on hypothetical moral-judgment stories. Since cognitive level is related to both hypothetical and practical moral knowledge, there should be a correspondence or consistency between the two. A description of the present study will follow the subsequent discussion of perspective coordination.

Relationship Between Perspective Coordination and Moral Development

An additional variable considered to be an important influence on moral development is the ability to understand the relationship between one's own and another's perspective. Perspective coordination is a cognitive process which underlies morality, and whose importance has been emphasized by both Piaget and Kohlberg. Piaget (1965) has suggested that the development of mature, or autonomous morality depends upon individuals' ability to compare their own point of view with that of others. In autonomous morality, children have progressed from a stage of egocentric thought to one in which they can decenter their viewpoint. Kohlberg (1969) has stated that moral judgment is a perspective-taking process whereby higher levels of moral thought require the ability to accommodate to the perspective of the other. Making a mature moral judgment thus involves the process of understanding the role of each person involved in the moral conflict.

Damon (1977a) has emphasized the importance of perspective coordination for all aspects of social knowledge:

It is impossible to reason in any form about fairness, friendship, authority, or society itself without some reliance, however primitive, on social perspective taking. (Damon, 1977a, p. 313.)

This skill enables individuals to understand relations between people, the feelings of others, social expectations, and social conflicts. With the development of perspective-coordination skills, development of social

knowledge progresses.

A number of studies have examined the relationship between perspective coordination and moral development. The following sections will review this research.

Perspective Coordination and Moral Judgment. Studies examining the relationship between perspective taking and moral judgment have produced inconsistent findings. These studies have usually correlated responses to a perspective-coordination task with responses to either Piaget's or Kohlberg's moral dilemmas. Several of these correlational studies have found no significant relationship between the two variables (Irwin & Ambron, 1973; Emler & Rushton, 1974; Jennings, 1975); while others have found moderate positive correlations (Rubin & Schneider, 1973; Damon, 1975b; Marsh & Serafica, 1977).

Selman (1971) investigated the role of perspective coordination as a skill prerequisite to certain stages of moral judgment. He administered two perspective-coordination tasks and a moral judgment scale to children, 9 to 10 years of age. Subjects were categorized as either non-reciprocal or reciprocal in perspective coordination, and pre-conventional or conventional in moral judgment. The results demonstrated a significant relationship between the two variables. Conventional moral judgment was associated with greater role-taking ability. Furthermore, in a followup study conducted one year later, ten subjects who were previously at low levels in both measures were retested. All of the subjects who reached conventional moral thought had also reached reciprocal role taking. However, those who attained reciprocal perspective taking did not necessarily reach conventional moral thought.

Perspective Coordination and Altruistic Behavior. The findings of studies investigating the relationship between perspective coordination and altruistic behavior also demonstrate inconsistent results. In these studies, perspective-coordination tasks were usually correlated with measures of helping or generosity. A number of studies have found no significant relationship between perspective coordination and donating to a charity (Emler & Rushton, 1974; Rushton & Weiner, 1975), altruistic behavior in a nursery-school setting (Waxler et al., 1977), and teacher ratings of helping (Kurdek, 1978). Several studies have found significant positive correlations between perspective coordination and sharing candy (Iannotti, 1970; Olejnik, 1975; Rubin & Schneider, 1973), and helping a younger child sort tickets (Rubin & Schneider, 1973). Furthermore, in an experimental study, Staub (1974) found that kindergarten children trained in perspective coordination were more likely to help another child than those in an untrained control group.

To account for the inconsistencies in these findings, Kurdek (1978) described some problems in these studies. His major criticisms involved the measures. First, perspective coordination has been assessed using many methods which often differ qualitatively from each other. These tasks have been grouped into perceptual, cognitive, and affective role taking; the magnitude of the correlations may depend upon the measures used. Secondly, numerous measures of moral judgment and behavior have been employed, many of which bear no relationship to each other. Thus, the relationship between perspective coordination and moral development may depend on the assessments employed.

In addition, several investigators (Selman & Damon, 1975; Hoffman, 1977a) have maintained that there should not necessarily be a perfect relationship between perspective coordination and morality. They have pointed out that perspective coordination is a neutral, cognitive skill which may apply to many situations: moral and immoral, competitive and cooperative, self-serving and altruistic. Perspective coordination helps the individual to understand the social situation; it does not assume a particular moral orientation. Thus, it is a necessary but not sufficient condition for morality.

Finally, Kurdek (1978) has suggested that research might provide more conclusive results if it focused on the quality of moral behavior. Most previous research focused on the frequency of moral behavior observed, e.g., number of objects donated or time spent engaged in moral behavior. In the present study, several different levels of altruistic behavior were assessed. Thus, it was possible to explore the relationship between perspective-coordination ability and quality of altruistic behavior.

Overview of the Study and
Rationale for the Hypotheses

The present study was designed to examine the issue of consistency in moral development by analyzing the relationship between hypothetical justice reasoning and two forms of altruistic behavior.

One dimension upon which children structure their social thinking and which changes qualitatively with development is reciprocity. As previously described, Damon has defined six levels of reciprocity; each level is characterized by new, more sophisticated understanding of the concept of reciprocity: Children at levels OA and OB are egocentric and have little or no understanding of reciprocity. Children at level 1A understand reciprocity as rigid payback-in-kind, those at level 1B understand merit, and those at level 2A understand need. Children at level 2B understand and are able to coordinate the relationship among several claims to justice.

Developmental changes in hypothetical reasoning about reciprocity and justice were measured by Damon's Positive-Justice Interview. Developmental changes in altruistic behavior were measured in two contexts of altruism: sharing candy and helping trace pictures. Within each behavioral context, a series of four stimulus conditions was developed to elicit reciprocity responses. These conditions were defined to reflect the reciprocity concepts acquired at stages 1A, 1B, 2A, and 2B.

In each condition, the subject was given information about another (fictitious) child, and he then had the opportunity to respond altruistically to that child. The reciprocity conditions were as follows:

1. Past reciprocity. The other (fictitious) child had previously participated but did not win anything for himself. He did, however, leave something for the subject. The subject was then told he could leave something for that child in return.
2. Deserving/merit. The subject was told that the other child had worked very hard and had done very well on a task, and he could give something to that child.
3. Need. The subject was told that the other child was very poor, and he could give something to that child.
4. Coordinated reciprocity. The child was given information about two other children: one who had worked very hard and had done very well on a task, and another who was very poor. The subject was then told he could give something to one or both of these children.
5. Control. No additional information was given to the child.

The number of candies shared and number of pictures traced were measures of altruistic behavior. Subjects at hypothetical judgment levels OB, 1B, and 2B were included in the present study.

Cognitive-developmental theory, as discussed in the foregoing sections, maintains that there is a pattern of organization at each stage of development which underlies both moral reasoning and behavior in a consistent manner. In the present study, it was expected that subjects at hypothetical reasoning level OB, since they have no understanding of reciprocity, would respond no differently in any of the behavioral conditions than in the control condition. Since subjects at hypothetical reasoning level 1B understand payback and merit, it was expected that they would respond more altruistically in the past reciprocity and merit

conditions compared to the control. Subjects at hypothetical level 2B, since they understand need and can coordinate several claims to justice, were expected to respond in the need and coordinated reciprocity conditions; and further, since they understand past reciprocity and merit, they should respond more altruistically in all conditions than in the control condition.

In addition, children were asked to give reasons for their behavior (practical reasoning) in order to assess the relationship between levels of reasoning in hypothetical and practical contexts. Subjects were asked what was the fairest thing to do in helping and sharing situations (ideal reasoning) in order to extend the relationship between levels of reasoning to an ideal context. Cognitive theory predicts that reasoning measures would be correlated with each other. However, since variables such as the child's self interest operate to lower levels of reasoning in a practical but not hypothetical context, it was expected that hypothetical would be more advanced than practical or ideal reasoning.

Finally, the relationship between perspective coordination and altruistic behavior was examined. Since mature moral behavior requires the ability to understand the relationship among different perspectives, there should be a correlation between perspective coordination and altruistic behavior. Furthermore, perspective coordination is a neutral, cognitive skill necessary but not sufficient for moral development, and it may not be as closely related to altruistic behavior as moral reasoning.

Hypotheses

1. Level of hypothetical moral reasoning will be positively related to frequency of helping and sharing behavior.
2. There will be significant effects of conditions of altruism on helping and sharing behavior depending on level of hypothetical moral reasoning.
 - 2A. Children at hypothetical moral reasoning level 0B will display a significantly lower frequency of helping and sharing behavior in all conditions.
 - 2B. Children at hypothetical moral reasoning level 1B will display a significantly higher frequency of helping and sharing behavior in the past reciprocity and merit conditions than in the control condition.
 - 2C. Children at hypothetical moral reasoning level 2B will display a higher frequency of helping and sharing behavior in the past reciprocity, merit, need, and coordinated reciprocity conditions than in the control condition.
3. Scores on measures of perspective coordination will be positively correlated with the frequency of helping and sharing behavior.
4. Level of hypothetical moral reasoning will be a more significant predictor of helping and sharing behavior than scores on tasks measuring perspective coordination.
5. Levels of hypothetical, practical, and ideal moral reasoning will be positively correlated.
6. Children will be more advanced in level of hypothetical reasoning than in level of practical or ideal reasoning.

Chapter 2

METHOD

Design

The experimental design of the present study was a factorial design with the following independent variables: hypothetical moral reasoning level, with three levels (0B, 1B, 2B); context of altruistic behavior, a repeated measure with two levels (helping, sharing); condition of altruism within each context, with five levels (past reciprocity, merit, need, coordinated reciprocity, control). Data on cognitive perspective coordination and recursive role taking were collected and included as independent variables. Chronological age was used as a covariate in some of the analyses. A summary of the design is presented in Table 1.

Subjects

The sample consisted of 120 males from grades kindergarten through five, with an approximately equal number at each moral reasoning level. Ages ranged from four to eleven years. Subjects were selected from a public school in New York City, located in a primarily middle-class neighborhood. Sex was not included as an independent variable in the present study, and, in order to hold its effects constant, only one sex was used. Based on the findings from prior studies, it was thought that males would display greater individual variation of behavior across conditions, and, thus, they were chosen to be included in the current research.

Table 1
Summary of Design

Factors	Levels	Description
Hypothetical moral reasoning	3	Levels 0B, 1B, 2B (Positive Justice Interview)
Behavioral contexts of altruism	2	Sharing, helping
Conditions of altruism (embedded in each behavioral context)	5	Past reciprocity, merit, need coordinated reciprocity, control
Perspective coordination	-	Scores ranged from 0 to 12 (Bystander Cartoons)
Recursive role taking	-	Scores ranged from 0 to 7 (Saltzstein adaptation of Miller Test)
Chronological age	-	4 to 11 years

Procedures

Hypothetical Moral Reasoning

Hypothetical moral reasoning was assessed using Damon's positive-justice interview (1975a). The interview consisted of a justice dilemma presented orally to the child. The dilemma was a story of a class of children who make money selling the pictures they painted in school. The problem they faced was how to divide the money. This story was followed by a series of standardized questions probing subjects' views on fairness in dividing the money. For example, children were asked who should get the most money: the child who made the most pictures, the best pictures, the lazy child, the poor child, the teacher, the best behaved, etc. In addition, several questions were asked concerning children's views about sharing and friendship. See Appendix A for the complete interview.

Children's reasoning was assigned to one of six levels:

Level 0A. Children's moral reasoning was arbitrary and based on the child's own desire for something; that is, an act is moral if the child wants it.

Level 0B. Moral reasoning was arbitrary and was based on external qualities, e.g., the tallest child should get more.

Level 1A. Moral reasoning involve strict equality. Everyone must be treated the same.

Level 1B. Moral reasoning involved the consideration of merit and payback; that is, individuals should get what they deserve.

Level 2A. Moral reasoning was based on the needs of individuals, e.g., the poor or young should get special consideration.

Level 2B. Moral reasoning involved the coordination of several

perspectives, and taking into account and weighing several claims to justice.

Interviews were scored according to Damon's (Gerson & Damon, 1975) procedures. Each statement or thought was called a "chunk." Each chunk was assigned to one of six levels (0-A, 0-B, 1-A, 1-B, 2-A, 2-B). Following Damon, a final score was obtained by determining the highest level of reasoning used at least twice in the interview. Only subjects falling into levels 0-B, 1-B, and 2-B were included in the present study since each of these represents the fully developed form of each level (Damon, 1975b).

Perspective Coordination

Bystander Cartoons. Cognitive perspective coordination was assessed using Chandler's (1971, 1973) Bystander Cartoons. In this procedure, a series of three cartoon sequences, each with a similar format, was presented: A story was shown to the subject, with a main character experiencing a series of events. As the story progressed, the character's behavior was only understood fully in terms of the events which have preceded it. An additional character was introduced halfway into the story, a bystander who observed the later events, but was not aware of what had preceded. The subject, then, had more information about the story character than the bystander in explaining the events. The following is an example of a test cartoon: A boy was building a sandcastle when a girl on a bicycle rode through it and destroyed it. The boy cried and went home where his little brother was building a card tower. The boy blew it over to the surprise of the little brother.

The subject was first asked to tell the whole story from the beginning of the sequence to the end and was corrected when a mistake was made. The subject was then asked to retell the story beginning at the point where

the bystander entered the story. This second time, however, the subject was required to tell the story from the point of view of the bystander and was asked what the bystander thought was the main character's motive was for his actions. In the above example, the child was asked what the little brother thought the boy was feeling and why he blew over the card tower. See Appendix B for the complete instrument. The degree to which the subject's own viewpoint was attributed to the story character was the egocentrism score.

Interviews were scored according to Chandler's procedures (1973):

(A) 0 points were assigned when subjects attributed the privileged information to the bystander; for example, "The little brother thinks the boy is mad because the girl knocked over his sandcastle."

(B) 1 point was given when the response was similar to (A), but when attributions were stated in conditional or probabilistic terms; for example, "The baby thinks he's sad because probably someone pushed it (sandcastle) down."

(C) 2 points were given when subjects attributed privileged information to the bystander, but couched it in nonegocentric alternatives; for example, "He wonders why he did it. He thinks maybe he fell down or that his sister did something."

(D) 3 points were assigned when subjects made an egocentric response which was later corrected; for example, "The brother thinks the boys is in a bad mood because the girl ran over the sandcastle. Oh no, he was in the house and doesn't know what happened."

(E) 4 points were assigned when subjects made the distinction between their own information and that of the bystander; for example, "The brother

thinks the boy is angry but doesn't know why because he wasn't there." Thus, scores ranged from 0 to 12; the higher scores indicated greater perspective coordination performance.

Recursive Role Taking. This task was based on the Recursive Role-Taking Measure of Miller et al. (1970) as adapted by Saltzstein (1978). This instrument included the following types of recursive thinking: (1) thinking about contiguous people; (2) thinking about action between people (talking); (3) thinking about thinking (one-loop recursion); (4) thinking about thinking about thinking (two-loop recursion). The complete instrument is presented in Appendix C. In this procedure, children were presented six small pictures (father, mother, two pictures of the same boy, and two of the same girl). They were then shown how to draw a circle with scalloped outlines to represent someone thinking and a circle with a smooth outline to represent someone talking. In addition, subjects were presented a practice statement, e.g., the boy is thinking about the girl, and are shown how to represent the statement by drawing circles and placing the pictures inside or outside the circles. There were two practice items and seven test statements which became progressively more difficult. After the practice items, subjects were required to draw the circles and place the pictures in relation to the circles to represent the statement. The task was scored by assigning one point for each correct drawing. Thus, scores ranged from 0 to 7.

Contexts of Altruism

Altruism was measured in two behavioral contexts: helping and sharing. Each subject was administered both tasks in two separate sessions.

Helping. This task assessed children's helping under different conditions of reciprocity in order to observe (1) whether subjects help another child on an uninteresting task while foregoing the opportunity to play with a more attractive toy, and (2) whether conditions of reciprocity reflecting different cognitive levels elicit differential responses by children.

The task was a tracing game. Subjects were invited to make spacemen by tracing several geometric shapes (squares, rectangles, triangles, and circles), cutting them out, and pasting them together to form a spaceman-like figure. The experimenter showed the materials to the subject and told him she would assemble another set of geometric shapes which was on a table at the other end of the room. While the subject waited for his game to be prepared, he was given the choice of either playing with an attractive toy (Etch A Sketch) or tracing shapes for another boy who had to leave quickly and did not have the chance to trace any for himself. At this point, subjects were given additional information about the fictitious boy. There were four different types of information given to subjects (four conditions) which corresponded to different levels of reciprocity: past reciprocity--the other child left tracings for the subject, merit--the other child was a good artist, need--the other child was poor, and coordinated reciprocity--one other child was a good artist and the other was poor, plus a control group--no other information was given about the other child. Subjects were randomly assigned to one of these five conditions. The subject was then left alone for three minutes to either trace or play with the other toy. The experimenter recorded the number of tracings a subject made the fictitious child.

Helping Practical and Ideal Reasoning. Following the helping task, measures of practical and ideal reasoning were obtained. In order to assess practical reasoning, the subject was asked to explain what he did on the task (e.g., how many pictures he traced for the other child) and the reasons for his behavior. In order to assess ideal reasoning, the subject was then asked what was the fairest thing to do. The reasons he stated for his behavior and for the fairest thing to do were scored according to Damon's (1977a) levels of positive justice, ranging from OA to 2B. Helping practical and ideal reasoning were always obtained in the same context, whereas hypothetical reasoning was elicited in a different context, the positive-justice interview.

Specific Instructions for the Helping Task. "Today we're going to play some games. What kind of games do you play? I'm trying out some new tracing games today with the boys in your class. Here is the tracing game. All the boys will trace some shapes." The subject was shown the materials, stencils of abstract shapes, and examples of completed tracings. "You can keep all the shapes you make, and later everyone can put shapes together to make spacemen, like the ones in Star Wars. You can help each other trace pictures if you want, but you don't have to if you don't want to. See, over here another boy was tracing." Stencils, drawing paper, and a folder were lying on the table. One half picture was traced. "He was tracing pictures, but he had to leave and didn't finish any pictures. See, he only traced a little bit, so he won't be able to make any spacemen."

The following were the reciprocity conditions:

Past reciprocity. "I told him that he could help you trace pictures if he wanted before he traced his own. He could put them in that folder over there (three pictures were in the folder). I don't know if he did or not, but you can go and look. If he left you pictures, maybe you'd like to make him some and put them in his folder (on a pile of folders).

Remember, you don't have to trace any for him, but if you want to, you can."

Merit. "The other boy was working very hard and made very good tracings -- the best in the class -- but the bell rang before he finished, and he didn't get any to take home. Maybe you'd like to trace some pictures for him. Because he tried so hard and made such good tracings, maybe you'd like to make him some pictures and put them in his folder (on a pile of folders). Remember, you don't have to trace any for him, but if you want to, you can."

Need. "The other boy was very poor -- his family doesn't have enough money for toys or things to trace at home. The bell rang before he finished, and he didn't get any to take home. Maybe you'd like to trace some pictures for him. Because he's so poor and doesn't have money for toys, maybe you'd like to make him some pictures and put them in his folder (on a pile of folders). Remember, you don't have to trace any for him, but if you want to, you can."

Coordinated reciprocity. "These two boys -- One of them was working very hard and made very good tracings -- the best in the class. The other boy who was here was very poor -- his family doesn't have enough money for toys or things to trace at home. The bell rang before they were finished, and they didn't get any tracings to take home. Maybe you'd like to make them some tracings. Because he (E pointed to one of the folders) tried so hard and made such good tracings, and he's (E pointed to the other folder) so poor and doesn't have any money for toys, maybe you'd like to make them some tracings and put them in the folders (on a pile of folders). Remember, you don't have to trace any for them, but if you want to, you can." The order of the information

about the fictitious children was counterbalanced.

Control. No additional instructions were given to the subject.

All subjects were told the following:

"I'm going over there to put some things away. While I'm doing that you can stay here. While you're waiting, you can do either of these things. You can trace some pictures and help the other boy(s) or you can play with this other toy." The other toy was a game more attractive than tracing; see the pilot test below. The experimenter then went to the other side of the room to minimize the influence of her presence on the child's behavior. After five minutes, the experimenter asked the subject, in a casual manner, questions about his helping behavior: "By the way, how many pictures did the other child trace for you (in the past reciprocity condition only)? Did you trace any for him? Why (or why not)? What is the fairest thing to do? Why?" These questions elicited the subject's reasoning with regard to his actual behavior, both practical and ideal reasoning. The experimenter then said: "O.K., here's your game. I want to see how fast you can trace these." Four stencils and paper were given to the subject. When the subject finished, the experimenter escorted the subject to an adjacent area for the next task.

Sharing. This measure assessed children's sharing under different conditions of reciprocity. The procedure was adapted from Dreman (1976) in order to observe (1) whether children share candies which they win with another child, and (2) whether conditions of reciprocity reflecting different cognitive levels elicit differential responses by children.

The subject was asked to draw a picture and was presented nine candies as a prize. This served as a pretext for giving subjects candies

to share with another (fictitious) child. He was then told that the other child had to leave quickly, and that he could leave some of his own candies for the child if he wanted. At this point, subjects were given additional information about the fictitious boy. There were four different types of information given to subjects (four conditions) which corresponded to different levels of reciprocity: past reciprocity--the other boy had left candies for the subject, merit--the other child was a good artist, need--the other boy was poor, coordinated reciprocity--one other boy was a good artist and the other was poor, plus a control group -- no other information was given about the other child. Subjects were randomly assigned to one of these five conditions. Several bags were placed near the subject who was told that he could leave candies in a bag for the other child if he wanted. The subject was then left alone for two minutes in order to minimize the demand characteristics of the situation. The experimenter recorded the number of candies a subject placed in a bag for the other child.

Sharing Practical and Ideal Reasoning. Following the sharing task, measures of practical and ideal reasoning were obtained. In order to assess practical reasoning, the subject was asked to explain what he did on the task (e.g., how many candies he gave to the other child) and the reasons for his behavior. In order to assess ideal reasoning, the subject was then asked what was the fairest thing to do. The reasons he stated for his behavior and for the fairest thing to do were scored according to Damon's (1977a) levels of positive-justice, ranging from 0A to 2B. Sharing practical and ideal reasoning were always obtained in the same context, whereas hypothetical reasoning was elicited in a different context, the positive-justice interview.

Specific Instructions for the Sharing Task. "Today we're going to play some games. Do you like games? In the first game we're going to draw a man. You can draw a man on this paper as quickly as you can." When the subject finished, he was given nine candies as a "prize" for drawing. In addition, the subject was given an empty cloth bag and told, "When kids play this game they sometimes leave some candy for other kids. This empty bag is for another boy who can also draw a man. If you want, you can give the other boy some candies. You can take some of your candies and put them in the bag for the other boy, and then put the bag over here in this box (which contained several other bags). You don't have to give the boy any candy if you don't want to. I don't care if you give any or how much you give to the other boy. I have to put some things away, so while I'm over there doing that, you can stay here for a few minutes. The other child is coming later, in two hours, to pick up his bag."

The following were the reciprocity conditions:

Past reciprocity. "The other boy was here before. I told him that he could give you some of his candies if he wanted. He could put them in that red bag over there in that box (three candies were in the bag). I don't know if he gave you candies, but you can go and look. If he did leave you candies, you can add them to your pile. If he left you some candies, maybe you'd like to give him some of yours. Remember, you don't have to give him any candies, but if you want to you can."

Merit. "The other boy was here before. He tried very hard, and made very good drawings -- the best in the class. Maybe you'd like to give him some of your candies. Because he tried so hard and made such good drawings, maybe you'd like to give him some of yours. Remember, you don't have to give him any candies, but if you want to you can."

Need. "The other boy was here before. He's very poor -- his family doesn't have enough money to buy any candies at home. Maybe you'd like

to give him some of your candies. Because he's so poor and doesn't have any money for candy, maybe you'd like to give him some of yours. Remember, you don't have to give him any candies, but if you want to you can."

Coordinated reciprocity. "Two other children were here before. One of them tried very hard and made very good drawings -- the best in the class. The other boy who was here was very poor -- his family doesn't have enough money to buy candies. Because he (E pointed to one of the cloth bags) tried so hard and made such good drawings, and he's (E pointed to the other bag) so poor and doesn't have any money for candy, maybe you'd like to give them some of yours. Remember, you don't have to give them any candies, but if you want to, you can."

Control. No additional instructions were given to the subject.

All subjects were told the following:

The experimenter then went and put things away on the other side of the room to minimize the influence of her presence on the child's behavior. After two minutes, the experimenter returned and asked the subject, in a casual manner, questions about his sharing behavior: "By the way, how many candies do you have? How did you get that many? Did the other boy give you candy (in the past reciprocity condition only)? Did you give the other boy candy? Why? What is the fairest thing to do? Why? Was the other boy fair? Why?" These questions were designed to elicit the subject's reasoning with regard to his actual behavior, both his practical reasoning (reasons for his performance) and ideal reasoning (judgments as to the fairest resolution to the dilemma).

Subjects were tested individually in two sessions, approximately one month apart. In each session the behavioral tasks were administered before the cognitive measures. In the first session, the subject was administered a behavioral task by one experimenter. Half the subjects were administered the helping task first and half the sharing task. At the conclusion of the behavioral task the hypothetical Positive-Justice Interview was administered by a second experimenter. The experimenters continued to test subjects until there were approximately forty subjects at each of the following moral reasoning levels: OB, 1B, and 2B. In the second session, the subject was administered the second behavioral task by the first experimenter. At the conclusion, the subject was presented both the perspective-coordination and recursive role-taking tasks by the second experimenter.

Dependent Measures

The following dependent measures were obtained:

1. Sharing behavior - the number of candies the subject placed in a bag for the fictitious child.
2. Sharing practical reasoning - the justifications for sharing. These were scored according to Damon's (1977a) positive-justice criteria.
3. Sharing ideal reasoning - judgments as to the fairest resolution to the sharing situation. These were scored according to Damon's positive-justice criteria.
4. Helping behavior - the number of pictures the subject traced for the fictitious other child.
5. Helping practical reasoning - the justification for helping. These

were scored according to Damon's positive-justice criteria.

6. Helping ideal reasoning - judgments as to the fairest resolution to the helping situation. These were scored according to Damon's positive-justice criteria.

Pilot Test

In the helping task, the subject was given the choice of tracing and thereby helping another child, or playing with a more attractive toy. In order to select a toy considered more appealing than tracing by children, a pilot test was conducted. Subjects included 48 boys, 22 in grade 1 and 26 in grade 4. Each subject was presented both the tracing materials and another toy (Etch-A-Sketch). They were told that these toys were being tried out and that they could play with them for awhile. The experimenter recorded which toy the subject initially selected. Results indicated a strong preference for the Etch-A-Sketch at both grade levels. Etch-A-Sketch was preferred by 87.5% of subjects, 90.9% of boys in grade 1 and 84.6% of those in grade 4. Therefore, the Etch-A-Sketch was considered the more attractive toy and an appropriate one to use for this task.

Chapter 3

RESULTS

The following results are presented in three sections. In the first, preliminary tests involving methodological issues are included; in the second, tests of the hypotheses are described; and in the third, two additional analyses, are presented.

Methodological Issues

Effect of Task Order

The order of the two behavioral tasks, helping and sharing, was counterbalanced across all subjects. A 2-way ANOVA indicated neither a significant main effect for order nor a significant interaction between order and task.

In the coordinated reciprocity condition, the order of presentation of merit and need information was counterbalanced across the subjects on both helping and sharing tasks. A 3-way ANOVA (with order, condition, and task as factors) found no significant main effect for order, and no significant 2-way or 3-way interactions for order.

Interscorer Reliability

Interscorer reliabilities were obtained on Chandler's Bystander Cartoons and Damon's Positive-Justice Interview since these measures require interpretation in the scoring. Twenty-four protocols of each measure were randomly selected as samples. The present experimenter and a research assistant served as raters. The latter, the second judge, was not aware of the conditions to which subjects were assigned. Pearson correlations were employed to determine reliability on both measures. The correlation of

scores on the Bystander Cartoons between the two raters was .99; and the correlation of scores on the positive-justice interview between the two raters was .87.

Tests of the Hypotheses

Hypothesis 1. Level of hypothetical moral reasoning will be positively related to frequency of helping and sharing behavior.

A summary of the means and standard deviations of the scores on the helping and sharing tasks in each condition of altruism and hypothetical moral reasoning level appears in Table 2. The effects of level of hypothetical moral reasoning and condition of altruism on helping and sharing responses were assessed by a 3 X 5 analysis of variance on the number of pictures traced and the number of candies shared. There were three levels of hypothetical moral reasoning (0B, 1B, and 2B) and five conditions of altruism (control, past reciprocity, merit, need, and coordinated reciprocity). There was a significant main effect for hypothetical moral reasoning scores on both the helping and sharing behaviors, $F(2, 105) = 13.26$ and 9.32 , respectively, $p < .05$. Tables 3 and 4 summarize the ANOVA's. Scheffé' comparisons indicated that for both helping and sharing tasks, subjects at level 2B of the moral reasoning interview displayed significantly greater prosocial behavior than subjects at levels 0B and 1B, while the latter groups did not differ from each other. These results are shown in Figures 1 and 2.

The above analysis was repeated with age as a covariate. There was a significant main effect for hypothetical moral reasoning level for helping and sharing responses, $F(2, 104) = 7.34$ and 5.64 , respectively, $p < .05$. Scheffé' comparisons demonstrated that, for sharing, subjects at level 2B gave significantly more candies than subjects at levels 0B and 1B, while the latter groups did not differ from each other. However, Scheffé' comparisons for helping responses were not significant when age was used as a covariate.

Although no specific predictions were made concerning the effects of condition of altruism on altruistic behavior, it was assessed as part of the above 2-way ANOVA. The analysis indicated that there was a significant main effect for condition in both the helping and sharing tasks, $F(4, 105) = 2.93$ and 2.73 , respectively, $p < .05$. Scheffe's post hoc comparisons revealed that, for helping, subjects in the coordinated reciprocity condition traced more pictures than those in the control condition, and subjects in the coordinated reciprocity condition traced more than those in the merit condition. For sharing, subjects in the coordinated reciprocity condition gave more candies than those in the control condition. These results are presented in Figures 3 and 4.

Table 2

Means and Standard Deviations of the Scores on the Helping and Sharing Tasks on Each Condition of Altruism and Moral Reasoning Level

Moral Reasoning Level	Mean Age in Years	n	Condition of Altruism				
			Control	Past Reciprocity	Merit	Need	Coordinated Reciprocity
Helping Context							
OB	6.1	40					
Mean			.5	1.8	.4	0	.5
SD			1.0	1.9	1.3	0	.9
1B	8.3	42					
Mean			.5	1.3	1.3	.4	.6
SD			1.0	2.6	1.5	.7	1.0
2B	9.3	38					
Mean			0	2.3	2.3	3.1	4.3
SD			0	1.9	1.8	2.3	2.1
Sharing Context							
OB	6.1	40					
Mean			.4	1.7	3.3	1.1	1.1
SD			1.0	1.3	1.9	1.2	1.6
1B	8.3	42					
Mean			1.3	3.0	2.1	1.4	2.2
SD			1.4	2.7	1.1	1.5	2.1
2B	9.3	38					
Mean			2.7	2.8	4.0	3.6	3.1
SD			1.7	.8	2.1	1.9	2.4

Table 3

**Analysis of Variance of the Frequency of Helping
Behavior as a Function of Hypothetical Moral Reasoning and
Condition of Altruism**

Source of Variation	df	SS	MS	<u>F</u>	p <
Hypothetical Moral Reasoning X Condition of Altruism					
Hypothetical Moral Reasoning	2	71	35.5	13.26	.05
Condition of Altruism	4	31	7.8	2.93	.05
Interactions	8	57	7.1	2.68	.05
Error	105	280	2.7		
Hypothetical Moral Reasoning X Condition of Altruism with Age as a Covariate					
Hypothetical Moral Reasoning	2	39	19.5	7.34	.05
Condition of Altruism	4	30	7.5	2.79	.05
Interactions	8	56	7.0	2.61	.05
Error	104	279	2.7		

Table 4

Analysis of Variance of the Frequency of Sharing
Behavior as a Function of Hypothetical Moral Reasoning and
Condition of Altruism

Source of Variation	df	SS	MS	<u>F</u>	<u>p</u> <
Hypothetical Moral Reasoning X Condition of Altruism					
Hypothetical Moral Reasoning	2	59	29.5	9.32	.05
Condition of Altruism	4	35	8.8	2.73	.05
Interactions	8	31	3.9	1.22	n.s.
Error	105	333	3.2		
Hypothetical Moral Reasoning X Condition of Altruism with Age as Covariate					
Hypothetical Moral Reasoning	2	36	18.0	5.64	.05
Condition of Altruism	4	35	8.8	2.72	.05
Interactions	8	31	3.9	1.20	n.s.
Error	104	333	3.2		

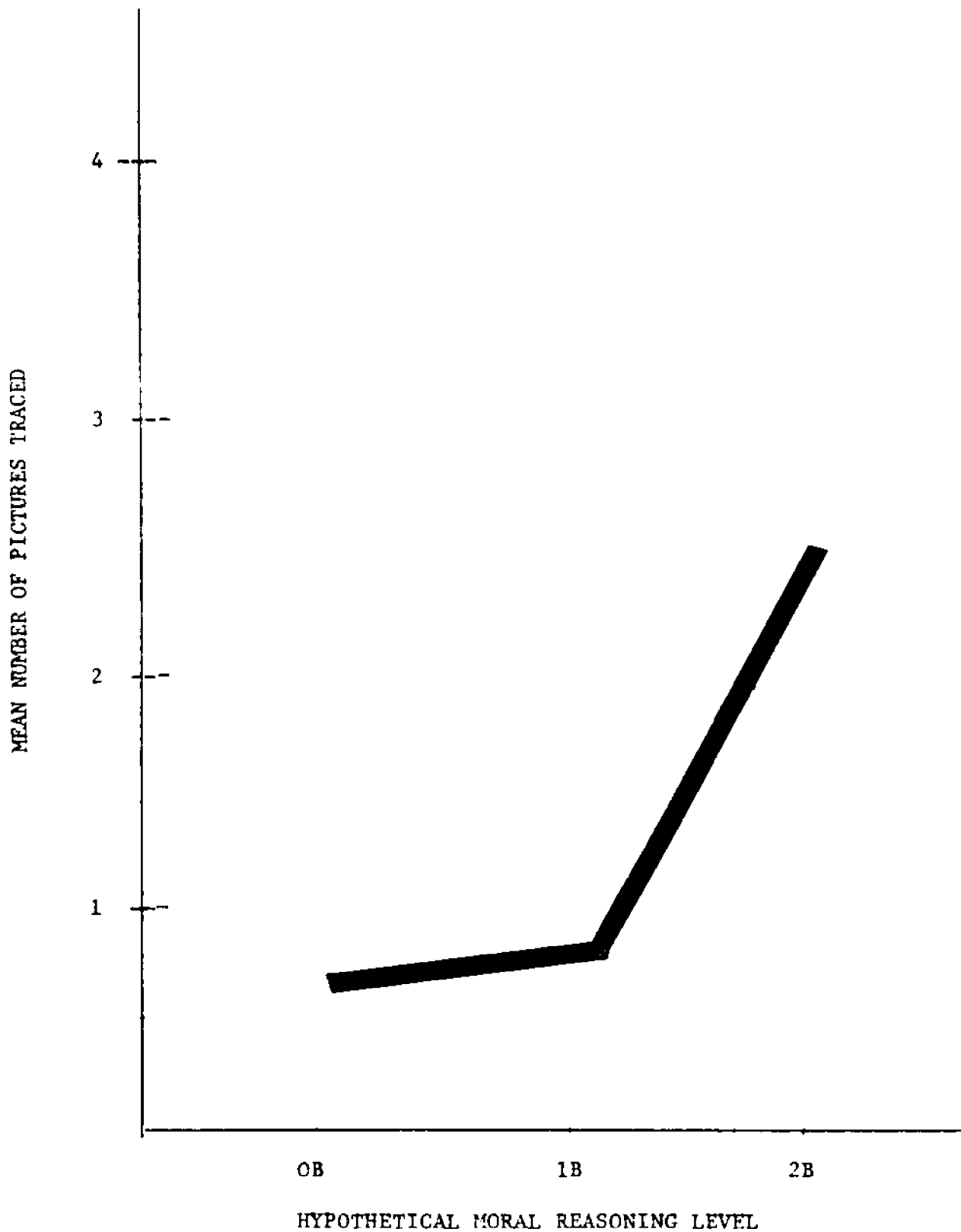


Figure 1. Mean number of pictures traced in the helping context as a function of hypothetical moral reasoning level.

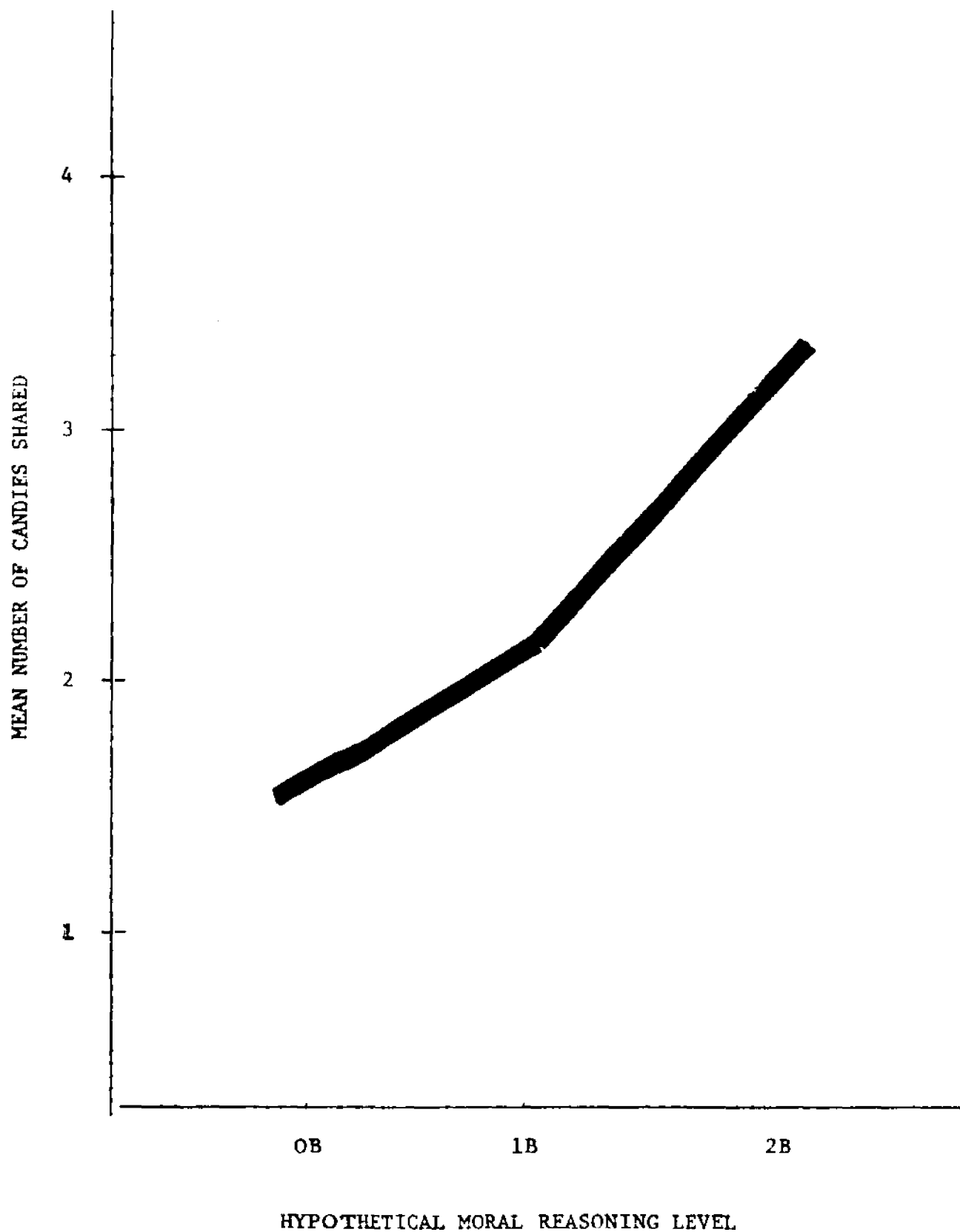


Figure 2. Mean number of candies shared in the sharing context as a function of hypothetical moral reasoning level.

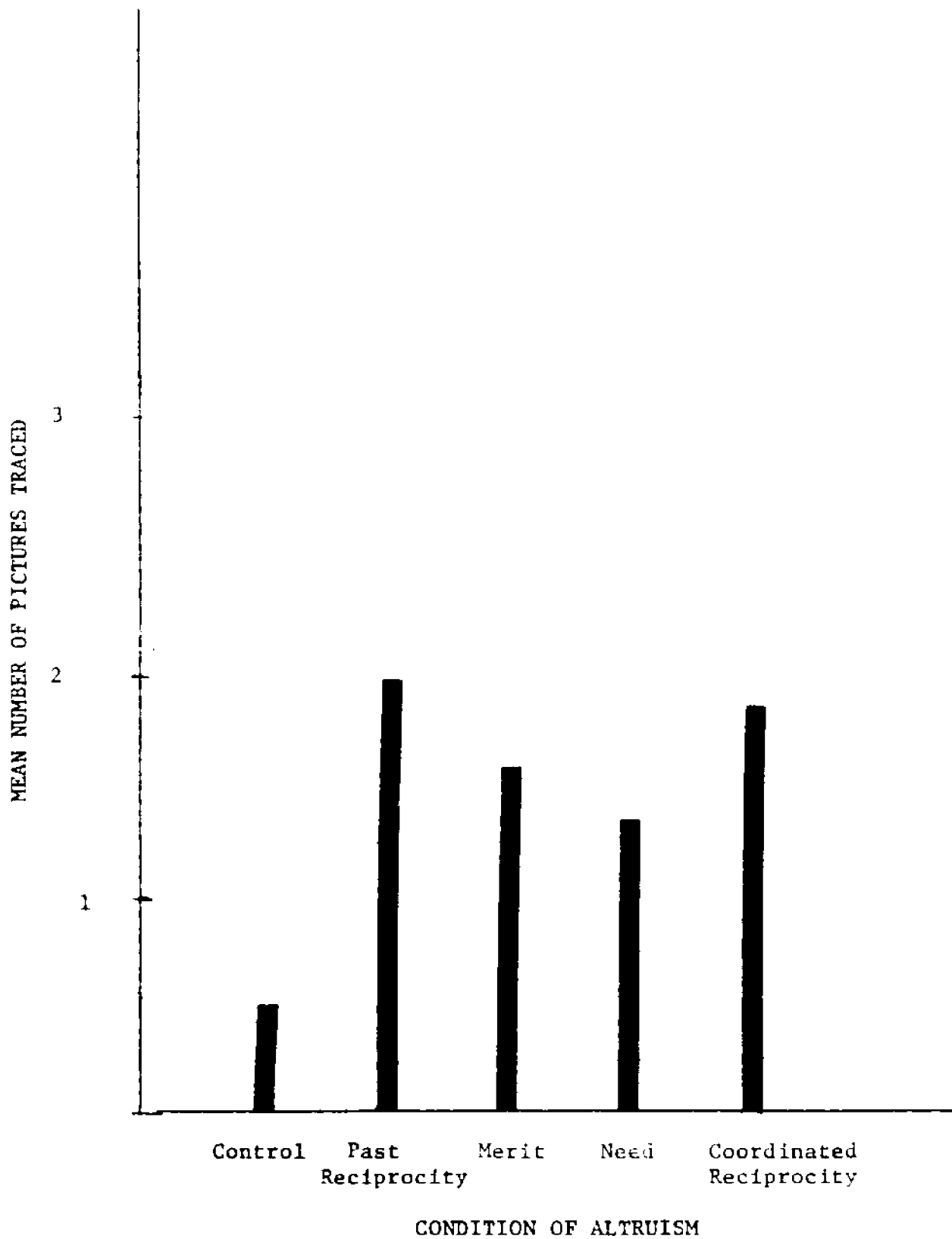


Figure 3. Mean number of pictures traced in the helping context as a function of the condition of altruism.

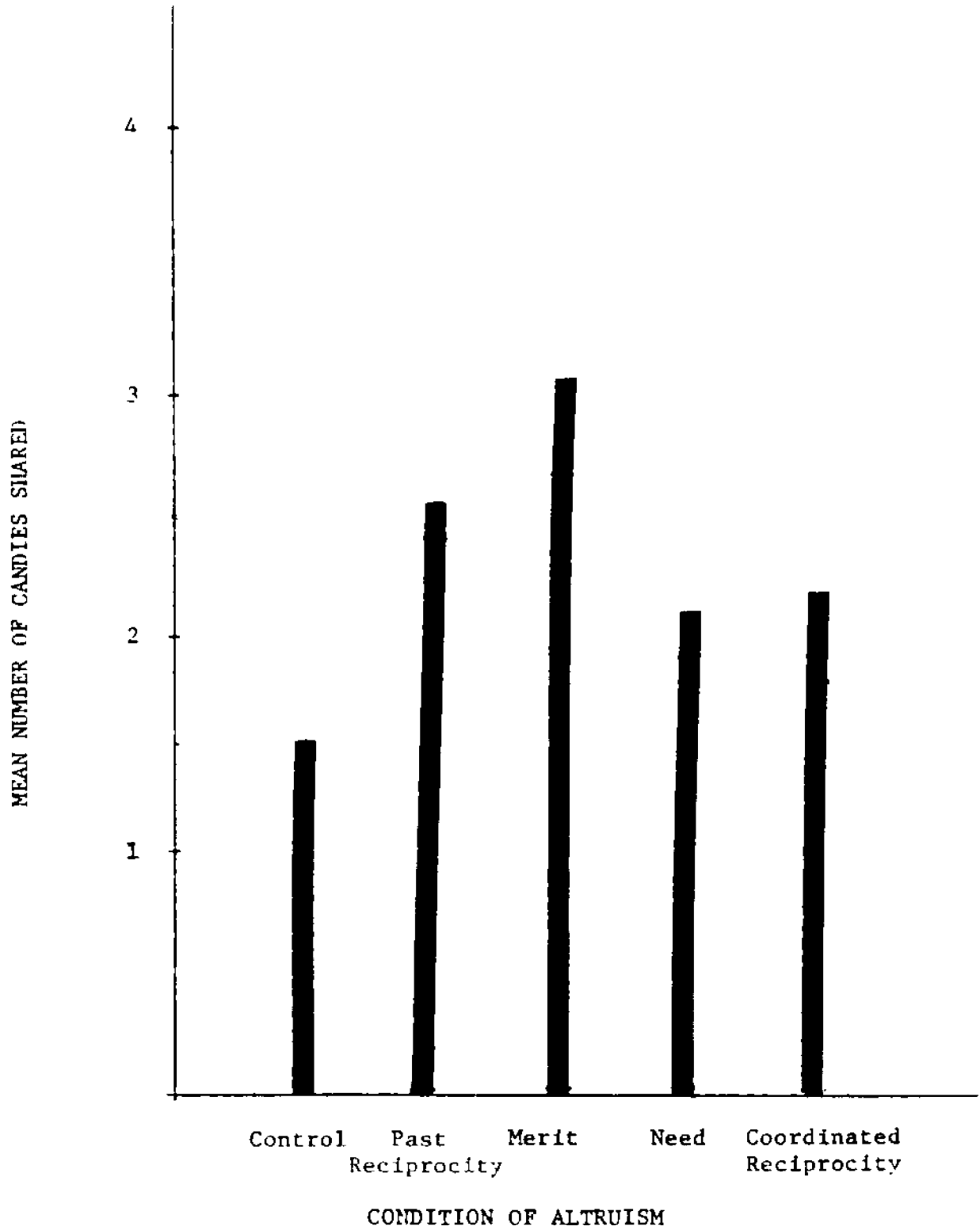


Figure 4. Mean number of candies shared in the sharing context as a function of the condition of altruism.

Hypothesis 2. There will be significant differences in the effects of conditions of altruism on helping and sharing behavior depending on the level of hypothetical moral reasoning.

Hypothesis 2A. Children at hypothetical moral reasoning level OB will display a significantly lower frequency of helping and sharing behavior than children at levels 1B or 2B.

This relationship between hypothetical moral reasoning level OB and condition of altruism was assessed by an a priori test. A 2-way ANOVA was performed on the number of pictures traced and number of candies shared. Age was included as a covariate. This test compared subjects at reasoning level OB to those at levels 1B and 2B on each type of altruistic behavior. There was no significant effect for helping. Subjects at level OB did not help less frequently than those at levels 1B and 2B. In contrast, there was a significant effect for sharing, $F(1, 102) = 4.62, p < .05$. Subjects at hypothetical moral reasoning level OB shared significantly fewer candies than those at levels 1B and 2B.

Hypothesis 2B. Children at hypothetical moral reasoning level 1B will display a significantly higher frequency of helping and sharing behavior in the past reciprocity and merit conditions than in the control condition.

This interaction between hypothetical moral reasoning level 1B and condition of altruism was assessed by a 2-way ANOVA on the number of pictures traced and number of candies shared. Age was included as a covariate. An a priori test compared the frequency of altruistic behavior in the past reciprocity and merit conditions to the control, need, and coordinated reciprocity conditions for children at moral reasoning level 1B. There were no significant differences either for helping or sharing.

Hypothesis 2C. Children at hypothetical moral reasoning level 2B will display a higher frequency of helping and sharing behavior in the past reciprocity, merit, need, and coordinated reciprocity conditions than in the control condition.

This interaction between hypothetical moral reasoning level 2B and condition of altruism was assessed by a 2-way ANOVA on the number of pictures traced and the number of candies shared. Age was included as a covariate. An a priori test compared the frequency of altruistic behavior in the past reciprocity, merit, need, and coordinated reciprocity conditions to that of the control condition for subjects at hypothetical moral reasoning level 2B. There was a significant effect for helping, $F(1, 102) = 9.76, p < .05$. However, the effect for sharing was not significant. Subjects at moral reasoning level 2B traced a significantly greater number of pictures in all conditions compared to the control.

Interactions

The overall interaction between hypothetical moral reasoning level and condition of altruism was assessed as part of the 2-way ANOVA discussed in Hypothesis 1. The interaction effect for sharing was not significant. The interaction effect for helping, however, was significant, $F(8, 102) = 2.68, p < .05$. Two types of post hoc comparisons were then performed on the helping data. The first was a comparison of subjects at moral reasoning levels 0B to 1B and 1B to 2B at each condition of altruism. The second type of post hoc test compared the past reciprocity, merit, need, and coordinated reciprocity conditions to the control condition at each moral reasoning level. The post hoc test employed was Dunnett's t statistic (Winer, 1962). The Dunnett test is appropriate since it allows

a comparison of a set of cells to one particular cell (i.e. control group). Dunnett's test indicated a significant difference between number of pictures traced for subjects at levels 1B and 2B in both control and coordinated reciprocity conditions, $t = 7.06$ and 7.65 respectively, $p < .05$. Subjects at level 1B traced more pictures than those at level 2B in the control condition. Subjects at level 2B traced more pictures than those at level 1B in the coordinated reciprocity condition. In addition, significant differences were found between the control and need conditions and between the control and coordinated reciprocity conditions at moral reasoning level 2B, $t = 10.11$ and 15.22 , respectively, $p < .05$. Subjects at moral reasoning level 2B traced more pictures in the need and coordinated reciprocity conditions than in the control condition. Interactions between moral reasoning and condition of altruism are presented in Figures 5 and 6.

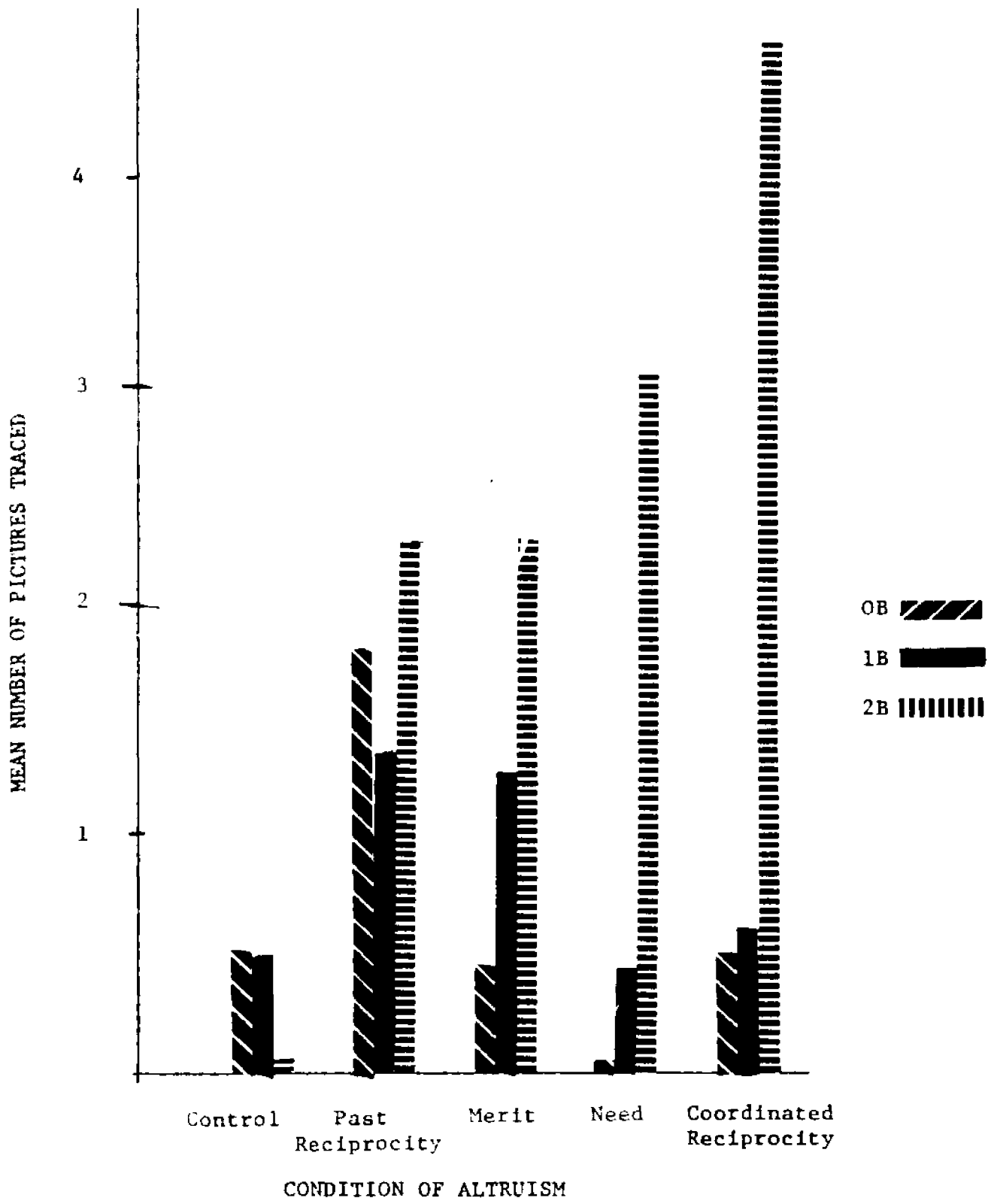


Figure 5. Mean number of pictures traced in the helping context as a function of hypothetical moral reasoning level and condition of altruism.

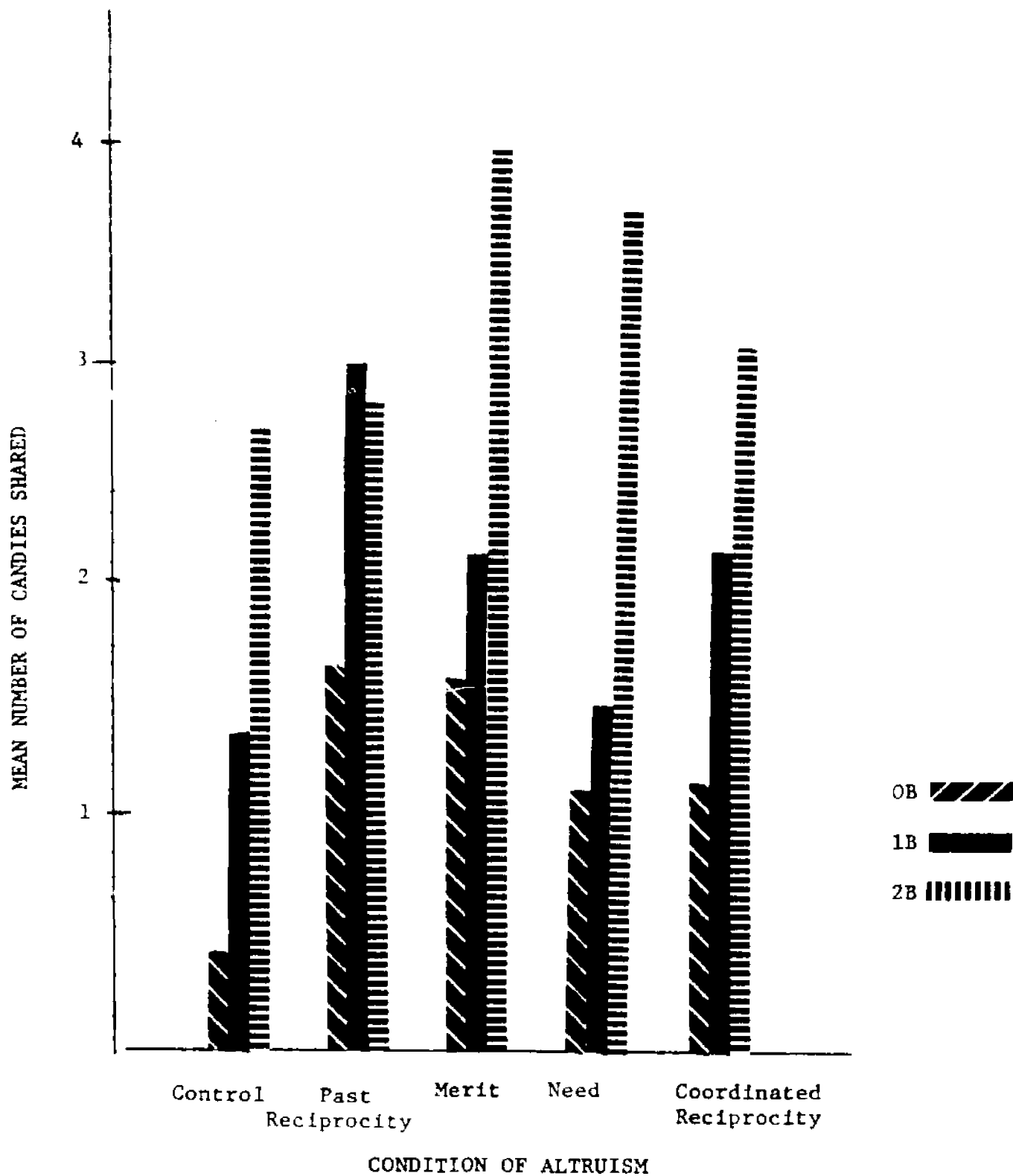


Figure 6. Mean number of candies shared in the sharing context as a function of hypothetical moral reasoning level and condition of altruism.

Hypothesis 3. Scores on measures of perspective coordination will be positively correlated with the frequency of helping and sharing behavior.

The relationship between the scores on the two measures of perspective coordination (the Bystander Cartoons and the recursive role-taking task) and the frequency of prosocial behavior (helping and sharing) was assessed using Pearson correlations. The results are summarized in Table 5. The correlation between scores on the two measures of perspective coordination was significant, $r = .45$, $p < .01$. Scores on the Bystander Cartoons were positively correlated with the amount of helping and sharing behaviors, $r = .19$ and $.19$, $p < .05$. In addition, scores on the recursive role-taking task were positively correlated with amount of helping and sharing behaviors, $r = .19$ and $.19$, respectively, $p < .05$.

Although no specific predictions were made regarding the relationship between perspective coordination and hypothetical moral reasoning level, moral reasoning level correlated positively with scores on both the Bystander Cartoons and recursive role-taking measure, $r = .61$ and $.51$, respectively, $p < .001$.

In addition, partial correlations were calculated with age as a covariate on the above scores. All correlations were lowered to some extent. Correlations between the perspective coordination tasks and behavioral measures and the correlation between helping and sharing behaviors dropped below significance indicating that age accounted for a significant amount of the variance.

Table 5

Correlations Among Cognitive and Behavioral Measures

Tasks	1	2	3	4	5	6
Cognitive Measures						
Hypothetical Moral Reasoning (1)		.61 ^{***}	.51 ^{***}	.37 ^{***}	.36 ^{***}	.73 ^{***}
Bystander Cartoons (2)			.45 ^{***}	.19 [*]	.19 [*]	.59 ^{***}
Recursive Role Taking (3)				.19 [*]	.19 [*]	.51 ^{***}
Behavioral Measures						
Helping (4)					.20 [*]	.27 ^{***}
Sharing (5)						.24 ^{***}
Age (6)						

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 6

Partial Correlations Among Cognitive and Behavioral Measures

Tasks	1	2	3	4	5
Cognitive Measures					
Hypothetical Moral Reasoning (1)		.32***	.23**	.26**	.28***
Bystander Cartoons (2)			.20*	.05	.06
Recursive Role Taking (3)				.06	.08
Behavioral Measures					
Helping (4)					.15
Sharing (5)					

Note: The partial correlations are first-order correlations with age as the covariate.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Hypothesis 4. Level of hypothetical moral reasoning will be a more significant predictor of helping and sharing behavior than scores on tasks measuring perspective coordination.

Two methods of testing this hypothesis were employed. The first method was to test the significance of the difference between correlations of moral reasoning and perspective coordination with altruistic behavior. This approach showed how the individual measures compared to each other in predicting altruistic behavior. However, not taken into account by testing the significance of these differences between the simple correlations was the fact that the independent variables were correlated with each other. Thus, a second test, a regression analysis, was performed to test the significance of each independent variable individually while controlling for the effects of all other independent variables. This approach determined the relative contribution of each independent variable to the variance of helping and sharing behavior. Both tests are included below.

In the first method, Z tests for correlated correlations (Finn, 1974) were employed (1) to test the significance of the difference between the correlation of moral reasoning with altruistic behavior and the correlation of the Bystander Cartoons with altruistic behavior, and (2) to test the significance of the difference between the correlation of moral reasoning with altruistic behavior and the correlation of recursive role taking with altruistic behavior. These contrasts were performed twice, for both helping and sharing behaviors. Thus, four Z tests were performed.

There was a significant difference between the moral reasoning-helping correlation ($\underline{r} = .37$) and the Bystander Cartoons-helping correlation ($\underline{r} = .19$), $\underline{Z} = 3.40$, $p < .05$. There was a significant

difference between the moral reasoning-helping correlation ($\underline{r} = .37$) and the recursive role taking-helping correlation ($\underline{r} = .19$), $\underline{z} = 2.83$, $p < .05$. There was a significant difference between the moral reasoning-sharing correlation ($\underline{r} = .36$) and the Bystander Cartoons-sharing correlation ($\underline{r} = .19$), $\underline{z} = 3.20$, $p < .05$. Finally, there was a significant difference between the moral reasoning-sharing correlation ($\underline{r} = .36$) and the recursive role taking-sharing correlation ($\underline{r} = .19$), $\underline{z} = 2.85$, $p < .05$. Thus, moral reasoning was a better predictor of helping and sharing behaviors than either measure of perspective coordination.

The second test used was a comparison of the relative importance of hypothetical moral reasoning and perspective coordination in the prediction of helping and sharing behavior; this was assessed by performing an ANOVA using the classical regression approach (Nie, et al., 1970) on the number of pictures traced and the number of candies shared. The independent variables were hypothetical moral reasoning level score, condition of altruism, perspective-coordination score, recursive role-taking score, and age. In this analysis, a test on any of the independent variables controls for the effects of all the other variables. There was a significant main effect for hypothetical moral reasoning level in both helping and sharing contexts, $\underline{F} (2,102) = 6.45$ and 5.03 , respectively, $p < .05$. This demonstrated that hypothetical moral reasoning explained a significant amount of the variance in altruistic behavior not accounted for by the other independent variables including perspective coordination, recursive role taking, and age. There was a significant main effect for condition of altruism for both helping and sharing, $\underline{F} (4, 102) = 2.79$ and 2.76 , respectively, $p < .05$. This finding showed that condition of altruism explained a significant amount of the variance in altruistic behavior not explained by

other independent variables including perspective coordination, recursive role taking, and age. However, the main effects for perspective-coordination score, recursive role-taking score, and age were not significant for helping or sharing. This demonstrated that perspective coordination, recursive role taking, and age did not explain a significant amount of the variation in altruistic behavior that was not explained by moral reasoning and condition of altruism.

Thus, the effects of both hypothetical moral reasoning and condition of altruism were significant whereas the effects of perspective coordination, recursive role taking, and age were not. These results demonstrate, then, that level of hypothetical moral reasoning and condition of altruism were more powerful and important predictors of altruistic behavior than measures of perspective coordination or age. Moral reasoning explained the variation in altruistic behavior which perspective coordination, recursive role taking, and age did not; whereas perspective coordination, recursive role taking, and age did not contribute significantly to the variance in altruistic behavior.

Hypothesis 5. Levels of hypothetical, practical, and ideal moral reasoning will be positively correlated.

As previously described, three types of moral reasoning were obtained: hypothetical reasoning (based upon scores obtained on the Positive-Justice Interview), practical reasoning (based upon subject's justification for his behavior), and ideal reasoning (based upon subject's descriptions of the fairest thing to do in the helping or sharing situation). Kendall's Tau rank order correlations were used to assess the interrelationships among the measures. Correlations among moral reasoning scores are presented in Table 7.

First, the relationships between types of reasoning were assessed in the helping and sharing contexts separately. Correlations between hypothetical and practical reasoning scores were .39 in the helping context and .41 in the sharing context. Correlations between hypothetical and ideal reasoning scores were .40 for helping and .46 for sharing. Correlations between practical and ideal reasoning scores were .62 for helping and .83 for sharing.

In addition, correlations between behavioral contexts were assessed for both practical and ideal reasoning; that is, what relationship did practical reasoning scores bear to each other across helping and sharing contexts, and, similarly, were ideal reasoning scores comparable in the two situations. Correlations between helping and sharing contexts on practical reasoning scores was .27 and on ideal reasoning scores was .36. All the above correlations were significant ($p < .001$).

Thus, there were significant positive relationships among types of reasoning. Although correlations varied between the helping and sharing

contexts, similar patterns existed for both. The highest correlations were between practical and ideal reasoning scores. Hypothetical reasoning was more highly correlated with ideal reasoning than with practical reasoning scores. Correlations between helping and sharing reasoning scores were the lowest.

In addition, correlations among reasoning scores were calculated with age as a covariate. The correlations are presented in Table 8. Although these correlations were somewhat lower than the simple correlations, they all remained significant, and displayed the same patterns as the zero-order correlations.

Table 7

Correlations Among Reasoning Scores

Measures	1	2	3	4	5	6
Hypothetical Moral Reasoning (1)		.39**	.40**	.41**	.46**	.73**
Helping						
Practical Reasoning (2)			.62**	.27**27**
Ideal Reasoning (3)			36**	.24**
Sharing						
Practical Reasoning (4)					.83**	.38**
Ideal Reasoning (5)						.38**
Age (6)						

Note: Three dots indicate that the correlations were not relevant.

* $p < .01$.

** $p < .001$.

Table 8

Partial Correlations Among Reasoning Scores

Measures	1	2	3	4	5
Hypothetical Moral Reasoning (1)		.29**	.40**	.21*	.30**
Helping					
Practical Reasoning (2)			.59**	.19*	...
Ideal Reasoning (3)			30**
Sharing					
Practical Reasoning (4)					.80**
Ideal Reasoning (5)					

Note: The partial correlations are first-order correlations with age as the covariate. Three dots indicate that the correlation was not relevant.

* $p < .01$.

** $p < .001$.

Hypothesis 6. Subjects will be more advanced in level of hypothetical reasoning than in levels of practical and ideal reasoning,

Sign tests (Siegel, 1956) were performed in each behavioral context (helping and sharing) to determine whether subjects reasoned at higher levels in the hypothetical, practical, or ideal context. Each analysis compared two types of reasoning: hypothetical and practical, hypothetical and ideal, and practical and ideal. Each analysis was performed for both helping and sharing contexts. Thus, six sign tests were performed.

For both helping and sharing contexts, there were significant differences in hypothetical and practical reasoning, $Z = 8.732$ and 7.246 , respectively, $p < .001$. Subjects scored higher in hypothetical than in practical reasoning. In both contexts, there were significant differences between hypothetical and ideal reasoning, $Z = 4.664$ and 5.789 for helping and sharing, respectively, $p < .001$. Subjects scored higher in hypothetical than in ideal reasoning. There were significant differences between practical and ideal reasoning in both helping and sharing contexts, $Z = 7.705$ and 5.515 , respectively, $p < .001$. Subjects scored higher in ideal than in practical reasoning.

In addition, in order to test whether there were differences in patterns of reasoning at each moral reasoning level, chi square analyses were performed. Each analysis compared two types of reasoning. For example, one chi square test compared levels of hypothetical and practical reasoning. A 2 X 3 frequency table was constructed to include two patterns of reasoning (hypothetical more advanced than practical reasoning and hypothetical less advanced than or equivalent to practical reasoning) by

three hypothetical reasoning levels (OB, 1B, 2B). In this way, patterns of reasoning could be compared at different moral-cognitive levels. This analysis was performed in both helping and sharing contexts. Similarly, frequency tables were constructed to compare hypothetical and ideal reasoning, and ideal and practical reasoning. Thus, six chi square analyses were performed. These data are presented in Tables 9, 10, and 11.

There was not a significant difference among moral reasoning levels in patterns of hypothetical and practical reasoning in the helping context. For sharing, there was a significant difference in pattern of hypothetical and practical reasoning at each moral reasoning level, $\chi^2 (2) = 9.31$, $p < .009$. In order to determine which of the three reasoning levels produced a different pattern of reasoning in the sharing context, three additional chi square tests were performed to compare groups OB with 1B, OB with 1B, and 1B with 2B. There was a significant difference between levels OB and 1B and between OB and 2B, $\chi^2 (1) = 3.95$ and 7.25 , respectively, $p < .05$; while groups 1B and 2B did not differ from each other. Subjects at levels 1B and 2B were more likely than those at OB to reason at more advanced levels in hypothetical than in practical reasoning.

For both helping and sharing, there were significant differences in pattern of hypothetical and ideal reasoning at different reasoning levels, $\chi^2 (2) = 36.93$ and 36.21 , respectively, $p < .001$. In order to determine which of the three reasoning levels produced a different pattern of reasoning, three additional chi square tests were performed to compare group OB with 1B, OB with 2B, and 1B with 2B. For both helping and sharing, there was a significant difference between levels OB and 1B and

between OB and 2B, $\chi^2 (1) = 17.02$ and 32.03 , respectively, $p < .001$ for helping, and 21.93 and 27.10 , respectively, $p < .001$ for sharing. Subjects at levels 1B and 2B were more likely than those at OB to reason at more advanced levels in hypothetical than in ideal reasoning, while those at OB reasoned at higher levels in ideal reasoning.

Finally, in both helping and sharing contexts, there were no significant differences between moral reasoning levels in patterns of ideal and practical reasoning.

Table 9
 Frequency Distribution of Patterns of
 Hypothetical and Practical Reasoning Across Hypothetical
 Moral Reasoning Levels

Hypothetical Moral Reasoning Level	Reasoning Pattern	
	Hypothetical More Advanced Than Practical	Hypothetical Less Advanced Than or Equivalent to Practical
Helping Context		
OB		
Frequency	31	9
Percent of Subjects	25.8	7.5
1B		
Frequency	35	7
Percent of Subjects	29.2	5.8
2B		
Frequency	33	5
Percent of Subjects	27.5	4.2
Sharing Context		
OB		
Frequency	20	20
Percent of Subjects	16.7	16.7
1B		
Frequency	30	12
Percent of Subjects	25.0	10.0
2B		
Frequency	31	7
Percent of Subjects	25.8	5.8

Table 10
 Frequency Distribution of Patterns of
 Hypothetical and Ideal Reasoning Levels Across Hypothetical
 Moral Reasoning Levels

Hypothetical Moral Reasoning Level	Reasoning Pattern	
	Hypothetical More Advanced Than Ideal	Hypothetical Less Advanced Than or Equivalent to Ideal
Helping Context		
OB		
Frequency	6	34
Percent of Subjects	5.0	28.3
1B		
Frequency	26	7
Percent of Subjects	21.7	13.3
2B		
Frequency	31	7
Percent of Subjects	25.8	5.8
Sharing Context		
OB		
Frequency	7	33
Percent of Subjects	5.8	27.5
1B		
Frequency	30	12
Percent of Subjects	25.0	10.0
2B		
Frequency	30	8
Percent of Subjects	25.0	6.7

Table 11

Frequency Distribution of Patterns of
Practical and Ideal Reasoning Levels Across Hypothetical
Moral Reasoning Levels

Hypothetical Moral Reasoning Level	Reasoning Pattern	
	Ideal More Advanced Than Practical	Ideal Less Advanced Than or Equivalent to Practical
Helping Context		
OB		
Frequency	26	14
Percent of Subjects	21.7	11.7
1B		
Frequency	24	18
Percent of Subjects	20.0	15.0
2B		
Frequency	17	21
Percent of Subjects	14.2	17.5
Sharing Context		
OB		
Frequency	20	20
Percent of Subjects	16.7	16.7
1B		
Frequency	13	29
Percent of Subjects	10.8	24.2
2B		
Frequency	12	26
Percent of Subjects	10.0	21.7

Additional Analyses

Coordinated Reciprocity

It was necessary to examine the coordinated reciprocity condition more closely in order to better understand subjects' responses, since the information given to subjects was more complex than in the other conditions. Whereas in the other conditions information was presented to subjects about one other child, in the coordinated reciprocity condition information was presented simultaneously about two children, a hard and good worker and a poor child. In the original statistical analysis, the coordinated reciprocity condition was treated the same as the other conditions; that is, the total number of candies shared or pictures traced was recorded for each subject. It was predicted that subjects at level 2B would help and share more in the coordinated reciprocity condition than those at levels 0B and 1B. Results supported this, though only in the helping context.

In order to more fully understand subjects' responses to the coordinated reciprocity condition, the data was analyzed by breaking down each subject's total response into the number of candies or pictures given to each fictitious child within the condition, i.e., the number given to the good and hard worker and to the poor child. In this way subjects' patterns of altruistic behavior toward two children simultaneously could be determined. A 3-way analysis of variance was performed with the following factors: three levels of hypothetical moral reasoning (0B, 1B, 2B), two contexts of altruism (helping, sharing), and two types of informational content (hard and good worker, poor child). There was a significant main effect for informational content, $F(1, 88) = 5.44$,

$p < .05$. Subjects gave more to the poor child than to the hard and good worker. There was significant main effect for moral reasoning level, $F(1, 88) = 6.68, p < .05$. Scheffé' comparisons indicated that subjects at level 2B displayed greater helping and sharing behavior than subjects at levels 0B and 1B, while the latter groups did not differ from each other. There were no significant main effect for context of altruism, and no significant 2-way or 3-way interactions. Thus, when information about two children, a good and hard worker and a poor child, was presented simultaneously, children at all moral reasoning levels in both helping and sharing contexts gave more to the poor child, and subjects at level 2B gave more across conditions than those at levels 0B and 1B.

Effects of Consistent Moral Reasoning on Helping and Sharing Behavior

An additional analysis was performed in order to determine the effects of consistent moral reasoning on helping and sharing behavior. It was expected that those subjects who attained the same moral reasoning level in both hypothetical and ideal contexts would display greater altruistic behavior than those whose reasoned at different levels on the two reasoning measures. Furthermore, since earlier results indicated that those at the highest moral reasoning level (2B) helped and shared more than subjects at lower levels, it was hypothesized that subjects who reasoned consistently at level 2B, would display more altruistic behavior than those at other levels. Four groups of subjects were included: (1) 2H2I -- those who scored at level 2B in both hypothetical and ideal reasoning (N = 17 and 17 for helping and sharing, respectively); (2) 2H1I -- those who scored at level 2B in hypothetical reasoning and 1B in ideal reasoning (N = 16 and 15 for helping and sharing, respectively); (3) 1H2I -- those who scored

at level 1B in hypothetical reasoning and 2B in ideal reasoning (N = 4 and 4 for helping and sharing, respectively); (4) 1H1I -- those who scored at level 1B in both hypothetical and ideal reasoning (N = 20 and 23 for helping and sharing, respectively). It was hypothesized that those who scored at level 2B in both hypothetical and ideal reasoning would display greater helping and sharing behavior than those in the other groups.

The effects of conditions of reasoning on helping and sharing were assessed by performing a one-way analysis of variance on the number of pictures traced and number of candies shared. There were four conditions of reasoning (2H2I, 2H1I, 1H2I, 1H1I). The effects for sharing were not significant. There was a significant effect for helping, $F(3.55) = 8.24$, $p < .001$. Tukey pairwise comparisons indicated that group 2H2I traced significantly greater number of pictures than those in the other three groups. Those who reasoned consistently at level 2B were more altruistic than those at other levels.

Chapter 4

DISCUSSION

The present study investigated the relationships among justice reasoning, altruistic behavior, and perspective coordination. Independent variables were hypothetical moral reasoning (measured by Damon's Positive-Justice Interview), cognitive perspective coordination (measured by Chandler's Bystander Cartoons), and recursive role taking (measured by Saltzstein's adaptation of Miller's test). Dependent variables were helping behavior (the number of pictures traced for another child), sharing behavior (the number of candies shared with another child), practical moral reasoning (explanation for the behavior), and ideal moral reasoning (statements regarding the "fairest" thing to do). Within both helping and sharing contexts, several conditions were constructed which involved presenting the subject with different information about another (fictitious) child. The types of information presented were based on Damon's hypothetical justice reasoning levels. The conditions included (1) past reciprocity (the other child previously helped or shared with the subject), (2) merit (the other child was a hard and good worker), (3) need (the other child was poor), (4) coordinated reciprocity (there were two other children, one who was a hard and good worker and the other who was poor), and (5) control (no information about the other child was given). The number of pictures that a subject traced for the other child and the number of candies he shared with him were measures of altruistic behavior. Measures of subjects' practical

moral reasoning were based on their reasons why they traced pictures or shared candies, measures of ideal reasoning were based on subject's statements of what they thought would be the fairest thing to do in the helping and sharing situations.

The purpose of the present study was to test the consistency of moral reasoning in hypothetical, practical, and ideal contexts and between levels of moral reasoning and altruistic behavior. An additional aim was to compare the relative influences of moral reasoning and perspective coordination on altruistic behavior. By systematically varying these factors within a coherent theoretical framework, more specific interactions among them could be delineated than had been shown in previous studies of children's moral reasoning.

It was hypothesized that level of hypothetical moral reasoning would be positively related to helping and sharing behavior. Further, it was expected that there would be interactions between levels of hypothetical moral reasoning and conditions of altruism. Compared to the control, subjects at level 0B would not be responsive in any of the altruism conditions, subjects at level 1B would help and share in the past reciprocity and merit conditions but not in the need and coordinated reciprocity conditions, and those at level 2B would help and share in the past reciprocity, merit, need, and coordinated reciprocity conditions. In addition, it was hypothesized that measures of perspective coordination and recursive role taking would be significantly related to the frequency of helping and sharing behaviors. It was also predicted that scores of hypothetical, practical, and ideal reasoning would be positively correlated; and, further, that levels of hypothetical reasoning would be more advanced than practical or ideal reasoning.

Results indicated that levels of hypothetical moral reasoning was significantly related to helping and sharing behaviors with age partialled out. Subjects at level 2B helped and shared more than those at levels 0B and 1B. It was found that interactions between hypothetical moral reasoning level and condition of altruism were significant in the helping but not in the sharing context. Subjects at level 2B helped more in the need and coordinated reciprocity conditions. In addition, although perspective coordination was correlated with altruistic behavior, hypothetical moral reasoning was found to be a better predictor of helping and sharing behavior. Finally, measures of moral reasoning were all significantly correlated, and hypothetical reasoning was found to be more advanced than either practical or ideal reasoning.

The following discussion consists of several sections: the relationship between moral reasoning and altruistic behavior, the relationship among measures of moral reasoning, the relationship between helping and sharing behavior, the relative influence of hypothetical moral reasoning and perspective coordination in predicting altruistic behavior, and conclusions.

Relationship Between Hypothetical Moral Reasoning and Altruistic Behavior

Cognitive-developmental theory (Kohlberg, 1969) suggests that there is an underlying organization or structure to moral knowledge which changes at each stage of development. This structure underlies both moral reasoning

and behavior. Individual's progressing to higher levels of moral development involves an increasing awareness and consideration of the perspectives of others, and an increasing knowledge of moral principles. These cognitive changes lead to behavior which becomes more unselfish and altruistic.

The major issue which was investigated in the present study was the relationship between different levels of moral reasoning and altruistic behavior. The findings supported, in part, the cognitive-developmental position. The most compelling evidence in support of this position was that a child's level of hypothetical moral reasoning was a significant predictor of how he would behave in the helping and sharing contexts. This finding is consistent with past studies (Staub, 1974; Emler & Rushton, 1974; Dreman, 1976). In addition, the present study found that the relationship between hypothetical reasoning and practical behavior remained significant even when age was partialled out. As predicted, with increasing moral cognitive level, children were more selective in their altruistic responses and were more sensitive to the specific needs of other children.

The data, however, only partially supported the cognitive hypotheses. Instead of finding increasing hypothetical moral reasoning levels to be associated with progressively greater frequencies of altruistic behavior, results showed that subjects at level 1B were no more altruistic than subjects at level 0B. Moreover, subjects at higher reasoning levels did not respond more altruistically in the past reciprocity or merit conditions than in the control.

Damon (1977b) has suggested that children's moral reasoning and behavior should become more consistent across contexts at higher cognitive levels. According to his position, young children's moral development is characterized by periods of "developmental dynamism," in which there is a great deal of variability, transition, and thus, inconsistency. With social-cognitive maturity comes greater stability. The present data support Damon's view. Subjects at level 0B responded at a low level in all conditions. Children at level 1B, although they understood certain concepts of justice, did not organize the information into a consistent thought-action pattern. Their actions were no different than those of subjects at the lowest level of hypothetical justice reasoning. Subjects at level 2B were significantly more altruistic across all conditions and were the only ones who acted on another child's claims of need and coordinated reciprocity. It was not until subjects reached level 2B that their hypothetical reasoning showed some consistency with their moral behavior. At this level, children began to coordinate and systematically relate their hypothetical and practical reasoning and behavior.

Further consistency between reasoning and behavior at level 2B was shown by examining the altruistic responses of four subgroups of subjects: (1) subjects who scored consistently at level 2B in both hypothetical and ideal reasoning, (2) those who scored at level 2B in hypothetical but at 1B in ideal reasoning, (3) those who scored at level 1B in hypothetical and 2B in ideal reasoning, and (4) those at level 1B in both hypothetical and ideal reasoning. Subjects who reasoned at level 2B on both reasoning measures were the most altruistic. Subjects who reasoned at level 2B on only one of the two measures (these may be considered

transitional subjects) and subjects who reasoned consistently at level 1B traced significantly fewer pictures than the former group. Thus, subjects who displayed both a high level of reasoning and consistency between hypothetical and ideal reasoning were the most altruistic.

It was surprising that children at levels 1B and 2B displayed no more helping or sharing behavior in the past reciprocity and merit conditions than those at level 0B. Despite the fact that they understood these concepts in the hypothetical positive-justice interview, they did not respond altruistically in the behavioral context. These findings were consistent with those of Damon (1977a) who also found that subjects who reasoned at hypothetical level 1B did not behave accordingly.

Although there were no differences in altruistic behavior among children at any hypothetical reasoning level in the merit condition, an examination of the practical and ideal reasoning showed that although the actual behavior was similar at each level, there were differences in their reasoning about the behavior. There was a tendency for subjects at higher levels of hypothetical reasoning to reason at higher levels in the helping and sharing situations. The following examples of subjects' verbal statements illustrate the reasoning of subjects at hypothetical levels 0B, 1B, and 2B in response to the questions, "Why did you give that many candies (or pictures)?" (practical reasoning) and "What do you think was the fairest thing to do?" (ideal reasoning):

Subject at level 0B who shared six candies:

Practical: "He might want a lot, I think."

Ideal: "Fairest to leave candies -- he wants some."

Subject at level 1B who shared two candies:

Practical: "I gave him two. I don't know him."

Ideal: "Divide them equally, but I can't because I have nine. (Why not give four?) I didn't think of it -- also I like them."

Subject at level 2B who shared two candies:

Practical: "Two because I have a lot. I have other friends. I may want to share with them and I need some for me, too."

Ideal: "It depends. He could get a lot of candies, 1000 if everyone leaves for him. No, it doesn't matter that he's a good artist."

These statements clearly reflected the different conceptions of justice which characterize subjects at each moral reasoning level. Subjects at level 0B reflected egocentrism in their reasoning; those at level 1B most frequently gave reasons of merit and equality; and those at level 2B were the most likely to consider the needs of the other child. Thus, there was consistency across hypothetical, practical, and ideal reasoning contexts. These results were consistent with those of Haan et al. (1968) who found that although subjects at different moral reasoning levels displayed the same overt behavior, the reasons for their behavior differed.

Not all subjects were consistent across moral reasoning measures, however. Consider the responses of the following subjects, both at hypothetical reasoning level 2B. In the first example, the subject continued to reason at level 2B in practical and ideal reasoning, while in the second example, the subject's practical and ideal reasoning scores were 0B:

Subject at level 2B who traced three pictures:

Practical: "I traced because he was about to and didn't have time. He wanted to make some so I'll help him."
(Level 2A)

Ideal: "I don't like tracing. It's fairest to me to play with Etch A Sketch and fairest to him to trace, so I did both." (Level 2B)

Subject at level 2B who traced no pictures:

Practical: "Etch A Sketch -- I never had one of my own."
(Level 0A)

Ideal: "It's fairest to do what you want to do." (Level 0B)

It is interesting to note the differences between practical and ideal reasoning in all the above subjects' reasoning. There were no differences between practical and ideal reasoning for subjects at level 0B; both reflected their own desires. There was a tendency for subjects at hypothetical levels 1B and 2B to usually score at lower levels in practical than in ideal reasoning, although this was not statistically significant.

A final point illustrated by these statements was the small number of subjects at any level who offered merit or deserving as a reason for altruistic behavior, either in their practical or ideal reasoning. When subjects were asked directly, they denied that knowing the other child was a good artist influenced their decisions to respond. Subjects seem to focus, instead, on the other child's not having enough time to finish. Merit was not a compelling reason for altruism.

Coordinated Reciprocity Condition. The findings from the coordinated reciprocity condition (merit and need coordinated) were somewhat inconsistent with those from the merit and need conditions where these concepts were

presented separately. When presented with information about a poor child alone (need condition), subjects at levels OB and 1B gave little, whereas when presented with information about a poor child and a good artist (coordinated reciprocity condition), younger children gave more to the poor child than to the good artist child.

As predicted, subjects at level 2B responded to the coordinated reciprocity condition differently than those at levels OB and 1B. They gave an overall greater quantity to both children. In addition, there was a tendency for children at level 2B to give more mature reasons for their behavior. The following is an example of a response from a child at level 1B explaining his behavior: "I wanted to be nice because he's poor." This contrasts with the following explanation of a subject at level 2B: "I traced three for the poor boy since he doesn't have much and he should get a chance to have some. The good artist makes good things. He should get some too, but less than the poor boy since he's a good artist and can make his own. I'll make him two." Thus, subjects at level 2B were more likely to take into account all the information and coordinate it into a coherent solution.

Relationships Among Measures of Moral Reasoning

Most theories of children's moral reasoning (Piaget, 1965; Kohlberg, 1969) are based on children's responses to hypothetical moral dilemmas, with little concern regarding how responses in such hypothetical contexts are related to moral judgments and moral actions in practical contexts. Piaget, in his studies of moral judgment, acknowledged the differences between "verbal or theoretical judgment and the concrete evaluations that operate in action..." (1965, p. 117), and he cautioned readers that

the "verbal evaluations made by our children are not of actions of which they have been authors or witnesses, but of stories which are told to them" (p. 119).

One purpose of the present study was to further explore the consistency of moral reasoning in hypothetical and practical contexts. While other studies have compared moral reasoning in hypothetical and practical contexts (Damon, 1977a; Haan, 1975), the present study used an additional context, ideal reasoning (i.e., subjects' judgments of the "fairest" thing to do in a given behavioral condition). Similar to Damon (1977a) and Haan (1975), the present study found that subjects reasoned at more advanced levels in the hypothetical than in the practical context. Further, reasoning was more advanced in the hypothetical than in the ideal context, and ideal was more advanced than practical reasoning.

The highest correlations among forms of moral reasoning were between practical and ideal reasoning, $r = .62$ in the helping context and $.83$ in the sharing context. Hypothetical reasoning was more highly correlated with ideal reasoning than with practical reasoning, $r = .40$ and $.29$ in the helping context and $r = .30$ and $.21$ in the sharing context. In addition, correlations between practical reasoning and altruistic behavior were higher than between hypothetical reasoning and altruistic behavior, $r = .59$ and $.37$ in the helping context and $r = .39$ and $.36$ in the sharing context.

Thus, measures of moral reasoning and behavior within a practical context were more closely related than those between hypothetical and practical contexts. This finding is consistent with Baumrind's (1978)

position that practical reasoning is a better predictor of moral behavior than hypothetical reasoning, as the latter excludes the subjective and affective interests of the actor in a moral dilemma. In contrast to previous studies that have compared hypothetical reasoning in one content domain with social behavior in a totally different content domain and found either modest or no relationships (Grinder, 1964; Nelson et al., 1969; Harris et al., 1976; Emler & Rushton, 1974; Leming, 1974), the present study found that children's practical and ideal reasoning were more consistent with their altruistic behavior within the same content domain.

Children's moral reasoning and behavior, then, may not be as inconsistent as was suggested by findings of previous studies. The low correlations may have reflected, in part, the differences in the content of the hypothetical and practical situations rather than the differences in moral reasoning levels.

The present findings are consistent with those of Haan (1975) and Damon (1977a) reporting higher levels of moral reasoning in the hypothetical compared to practical contexts. The findings are in contrast to Piaget's (1965) position which predicts that practical is more advanced than hypothetical judgment. Within the domain of moral reasoning, there appears to be a consistent bias toward lower levels of reasoning in the practical context since it necessarily involves consideration of one's own self interest, often in conflict with moral principles. When one's own needs and desires are considered, moral reasoning scores are lowered. In other contexts such as interpersonal persuasion, however, the self interest that operates in practical contexts can enhance social reasoning

(Bearison and Gass, 1979). In their study, subjects whose task it was to persuade the experimenter to give them \$2.00 reasoned at higher levels than subjects who were presented a similar task but in a hypothetical context.

It is interesting to note the different patterns of reasoning for subjects at each moral-reasoning level. Subjects at levels 1B and 2B reasoned at higher levels in the hypothetical than in the practical and ideal contexts. Subjects at level OB, however, displayed a different pattern, often reasoning at equivalent or lower levels in the hypothetical than in the practical or ideal contexts. These findings suggest that children at level OB may not differentiate between decisions about their own actions and those of people in hypothetical situations; they respond from an egocentric perspective regardless of the context. It may not be until children reach higher social-cognitive levels that they take into account the specific situation and, thus, begin to reason at more mature levels in the hypothetical context.

Relationship Between Helping and Sharing (Contexts of Altruism)

The present study included two contexts of altruistic behavior: helping another child trace pictures and sharing candies with another child. To the extent that there is an underlying organization in children's thinking, there should be general patterns of behavior occurring across social-behavioral contexts. The findings, however, did not demonstrate as great a degree of generality as expected. This section will present a discussion of the findings regarding the two contexts of altruism and speculation as to the possible explanations for these results.

There were several differences between the helping and sharing situations. First, the physical activity involved in giving candies is simpler than in tracing shapes. Sharing requires neither motor skills nor drawing ability nor physical effort. Thus, some children may not have attempted the helping task because of the perceived physical demands involved. Furthermore, since the time limit in the helping task was three minutes, there was a limitation as to the number of tracings which could be completed. Many children who spent all their time tracing were only able to complete three or four shapes, while in the sharing task they had nine candies with less time restriction. Thus, there was a more limited range of responses in the helping situation.

One potential problem in the helping task was the use of the number of pictures traced as a measure of helping behavior. Tracing pictures required a certain degree of motor skill which may have varied across individuals. It was possible that children who had more difficulty in tracing may have spent more time completing one picture than children skilled in tracing who may have spent less time tracing while completing more pictures. It is questionable, then, which of these children were the more altruistic, the children who traced more pictures or those who spent more time tracing. To determine if this occurred in the present sample, an additional measure of helping behavior was obtained: the time the subject spent tracing pictures for the other child. The correlation between the amount of time spent tracing and the number of pictures traced was .89. Those who spent more time tracing were more likely to have traced more pictures. Therefore, it was not likely in this sample to find children spending more time tracing while completing fewer pictures.

Results demonstrated both consistencies and inconsistencies in subjects' responses in the two behavioral contexts. On one hand, there was a similarity in the pattern of results between tasks. Frequencies of both helping and sharing behavior were related to hypothetical moral reasoning levels. Furthermore, the same pattern among types of moral reasoning was displayed on the two tasks; that is, hypothetical was more advanced than either practical or ideal reasoning.

On the other hand, there were differences between the two contexts. There were differences in levels of reasoning used in the two tasks. In measures of practical reasoning, subjects employed more advanced levels in the sharing than in the helping context, while for ideal reasoning there was no correspondence between contexts. There was a significant interaction between hypothetical reasoning and condition of altruism for helping but not for sharing. Subjects at level 2B helped more in the need and coordinated reciprocity conditions. Children discriminated among conditions in the helping context. The findings suggested that children reason at higher levels and donate with greater frequency in the sharing situation, whereas they display greater variability in their responses to the helping context.

Gerson and Damon (1978) have suggested that different moral situations may elicit different types of responding, depending upon the specific characteristics of that situation. They have distinguished between situations which elicit (1) deliberative consideration, which requires the individual to understand in depth the various details of the situation, and (2) habitual consideration, which is determined by past experiences, is automatic, and requires little interpretation. In the present study, sharing may have involved habitual while helping may have involved

deliberative processing. This explanation is supported by the data in a number of ways. First, there was a lack of variability in response to the sharing situation. Children did not respond differentially to the different conditions. It appeared that telling the children they could "share" was enough to trigger a response. It was noted, in fact, that many subjects began to give candies as soon as the experimenter uttered the word "share," and had to be reminded to hear the rest of the instructions. This willingness may have been, in part, due to the nature of the school, which was structured as an open classroom environment. Social interaction, especially giving to others, was an integral part of the curriculum in activities such as bringing soda cans from home for a recycling project, bringing old clothes for the weekly rummage sale, and bringing materials from home for the science room. This social attitude was apparent in responses to the moral justice interview. In response to an item asking how money from an art sale should be divided, 42% of children stated that it should be used to buy something for the school. On another item in which children were asked why it is a good thing to share, few children at any moral reasoning level answered the questions with a thoughtful, or "deliberative" response. Responses fell into five categories: You have friends if you share (44%), it's nice (24%), others will share with you (16%), you make people happy (8%), and don't know (8%). There was little elaboration even with probing by the experimenter. Answers to these questions seem to reflect an automatic, nonreflective approach to the situation. In the helping task, on the other hand, children (especially at level 2B) seemed to give greater thought as evidenced by the differential responses to the various conditions and the

greater involvement the task required.

Relative Influence of Moral Reasoning and
Perspective Coordination on Altruistic Behavior

The relationship between perspective coordination and moral development continues to be an important issue in social-cognitive research. One view, represented by Kohlberg (1969), maintains that moral judgment is the process of accommodating to the perspectives of others. An alternative view, offered by Selman and Damon, 1968, and Hoffman, 1977a, suggests that perspective coordination is a skill which is important to the understanding of moral situations, but is neutral in its social content, and, thus, is not sufficient for mature morality.

A number of different methodologies have been developed as attempts to resolve this issue. Most previous studies have either employed correlational analyses among measures of perspective coordination, moral reasoning, and moral behavior to determine the degree of relationship among them, or have examined the developmental sequence of moral reasoning and perspective coordination (Selman, 1971) to determine the order of emergence of these two factors. The findings from the present study were consistent with past studies reporting significant positive correlations between perspective coordination and moral reasoning (Rubin & Schneider, 1973; Damon, 1975b; Marsh & Serafica, 1977) and between perspective coordination and altruistic behavior (Iannotti, 1975; Olejnik, 1975; Staub, 1974). With age partialled out, the significant correlations between perspective coordination and moral reasoning were upheld; however, the correlations between perspective coordination and altruistic behavior

(helping and sharing) were not, thus indicating that age accounted for the most significant amount of the variance in the latter relationship.

In addition, the present study directly compared the effects of perspective coordination and moral reasoning on altruistic behavior in order to determine which was the more powerful predictor of altruism. Findings demonstrated that the effect of moral reasoning level was significant with perspective coordination and age held constant; but that the effect of perspective coordination was not significant with moral reasoning and age held constant; and, further, the effect of age was not significant with perspective coordination and moral reasoning level held constant. Thus, moral reasoning was a better predictor of altruistic behavior than measures of perspective coordination or chronological age. These findings supported the positions of Selman and Damon (1968) and Hoffman (1977a) who suggested that perspective coordination is a component of mature moral action, but that moral reasoning is a separate skill and more closely related to altruistic behavior.

Conclusion

The results of the present study indicated that there are both consistencies and inconsistencies in children's sociomoral knowledge. There appears to exist an underlying cognitive structure or organization which becomes increasingly more consistent with social-cognitive development. Children at the most mature hypothetical moral reasoning level (2B) were able to understand a wide range of moral information, coordinate this information, and be guided by these principles in their actions. Children at this level began to integrate and systematically relate their hypothetical and practical reasoning and behavior. Children at lower levels did not.

The findings from the present study emphasized the importance of the relationship between moral reasoning and altruistic behavior. As the results indicated, hypothetical moral reasoning was a better predictor of altruistic behavior than cognitive perspective coordination, recursive role taking, and age. In addition, these findings were important in demonstrating that specific types of moral reasoning were highly consistent with moral behavior. Moral reasoning about a practical altruistic situation was more closely related to altruistic behavior than was moral reasoning about a hypothetical altruistic situation. Further social-cognitive research should focus on children's reasoning about their own behavior in practical situations rather than on reasoning about hypothetical people engaging in hypothetical social acts.

Appendix APositive-Justice Interview

A. Distribution of property and rewards

All of these boys and girls are in the same class together. One day their teacher let them spend the whole afternoon making paintings and crayon drawings. The teacher thought that these pictures were so good that the class could sell them at the fair. They sold the pictures to their parents, and together the class made a whole lot of money.

Now all the children gathered the next day and tried to decide how to split up the money.

1. What do you think they should do with it? Why?
2. Kathy said that the kids in the class who made the most pictures should get the money. What do you think?
3. Andy says the kids who made the best ones should get the most. What do you think?
4. There was a lazy kid in the class, Rebecca, who didn't draw very much in comparison to the others. What about her?
5. Jim says that the best behaved kids should get more than the rest.
6. Lisa says that the poor kids should get the money, because they don't have much.
7. Bill, here, comes from a very poor family and doesn't get an allowance. What should the class do about him?
8. Someone said the teacher should get the money, because it was her idea to sell the pictures. What do you think?
9. What's the fairest way to divide up the money?

10. Should the teacher decide? What if she decides to give it all to Melissa, because Melissa is her favorite? Does she have the right to decide that?
11. What should the kids do?
12. Should anyone get more than anyone else?

Remember Billy, -he's the poor kid who never gets any allowance. Sometimes he asks Miss Townsend, the teacher, for a free candy bar at school. Some of the kids tell Miss Townsend that she shouldn't give Billy a free one, because they have to pay a dime for theirs, and it's not fair that he should get one free.

13. What should Miss Townsend do?
14. Someone else suggested that Billy should do a chore or some extra work to earn the free candy bar. Is that fair?
15. What about having a contest to give Billy a chance to win it?
16. What's the fairest thing to do about Billy? Is that fair to the other kids who have to pay ... to Billy ... to the teacher?

Remember there was a lazy kid in class - Rebecca. Now Rebecca is very smart. She never studies, or does her homework, because she is so lazy. But she always gets all the answers right on tests (or, for younger subjects, when Miss Townsend asks her questions). Peter, here, is just the opposite. He works real hard, but he's not so smart and usually makes lots of mistakes.

17. Miss Townsend has to decide who she should give the best mark to for schoolwork (or, for younger subjects, whose paper she should put the most stars on) - Rebecca or Peter. What should she do?

18. Why does a teacher give marks (put stars on papers)? Is that a good reason?
19. What should Miss Townsend do? What's fairest to Rebecca and Peter? How should she decide?

B. Sharing and friendship

1. Who's your best friend? Why is he/she your friend? Why do you like him/her? Are there kids that you don't like? Why? How should you act with friends?
2. Do you let your friend play with your toys? Why? (Why not?) What about kids who are not your friend? What should you do?
3. What would happen if you said, "No _____, you can't play with my toys." Is that fair? How come?
4. What would you do if _____ said to you, "You can't play with my toys?" Would that be fair? How come? What if you didn't let him play with your toys? Then, would it be fair? What if you did let him/her play?
5. Do your friends have to let you play even if they don't want to? What would happen if they didn't? What should happen?
6. What if _____ didn't let you play with his toys last week? Should you let him/her play with your toys today? How come? What if you want to let him play with your toys, anyway? Is that fair? Even if you want him to?
7. Why is it a good thing to share?

8. Should friends always share with each other? Should you share with kids you don't like? With everybody? Should you share some things or everything?
9. Does your mommy tell you to share your toys? Is that why you do it? What would you do if your mommy told you, "You can't let _____ play with your toys anymore"? Is that fair? What should you do?
10. What if she said, "You can't be Jimmy's friend anymore"? What should you do? Does she have the right to tell you who to like and not to like? How do you pick your friends?
11. (optional) What if you have one toy and two friends who want it? What should you do? How do you decide who gets it? Your best friend?
12. Here are some toys (poker chips). Let's pretend your best friend is sitting right here. Now I'm going to give you all these toys to play with. Would you give _____ any of them? Which ones would you give him? Which ones would you keep yourself? What if he wanted all these -- what would you say to him?

Appendix B
Bystander Cartoon Measure

I am going to show you some cartoons, like the comics in the newspaper, which I will ask you to describe to me. I will show you the cartoons one at a time and ask you to describe what is going on. You will have all the time you need, so go slowly and look at every picture in the cartoon before you decide what the whole thing is about. I am very interested in what the people in the cartoons are thinking and feeling so pay special attention to those parts of the story. When you finish studying each cartoon and know what it is about, I will ask you to describe what is happening in each picture.

Here's the first cartoon. It's about a boy and his sand castle. There's also a girl and a little child in the story. Study it carefully. Look at each picture and remember to pay special attention to what the people in the pictures are thinking and feeling. In this story, the people do not talk to each other. There is no talking in this cartoon. The people in this story just look at each other; they don't talk to each other. Take a few moments to look at the whole thing before starting your story and tell me when you have decided what the whole thing is about. Ready? What is happening in this cartoon?

Story:

- Frame 1. The boy is starting to build a sand castle.
2. The boy finishes.
 3. A girl comes along and destroys the sand castle.
 4. The boy is crying.
 5. The boy goes home.

6. He sees the cardhouse that the little child made.
7. The boy blows over a little child's cardhouse.
8. The child's cardhouse is ruined and the boy walks away.

Now I want you to begin again with this card (frame 6) and tell me what's happening here, except this time I want you to tell me what the little child thinks is going on. Remember they don't talk to each other. They just look at each other; they don't talk to each other. Pay special attention to what the little child thinks the boy is thinking and feeling. Begin here (frame 6) and tell me what the little child thinks is going on with the boy in these pictures.

Here's the next cartoon. It's about a boy and his kite. His mother is in the story too. Study it carefully. Look at each picture and remember to pay special attention to what the people in the pictures are thinking and feeling. In this story, the people do not talk with each other. There is no talking in this cartoon. The people in this story just look at each other; they don't talk. Take a few moments to look at the whole thing before starting your story and tell me when you have decided what the whole thing is about. Ready? What is happening in this cartoon?

Story:

- Frame 1. The boy is flying his kite.
2. It falls into the sewer.
 3. The boy tries to pull it out.
 4. The boy tugs angrily at the kite.
 5. He walks home angry with a broken kite.
 6. He arrives home.

7. He stomps angrily on the kite. His mother enters and watches the boy.
8. He crumples the broken kite while the mother watches.
9. He kicks the chair.

Now I want you to begin again with this card (frame 7) and tell me what's happening here, except this time I want you to tell me what the mother thinks is going on. Remember, they don't talk to each other. They just look at each other; they don't talk to each other. Pay special attention to what the mother thinks the boy is thinking and feeling. Begin here (frame 7) and tell me what the mother thinks is going on with the boy in these pictures.

O.K., now here's the last cartoon. It's about a boy playing baseball near a stranger's car. The boy's father is also in the story. Study it carefully. Look at each picture and remember to pay special attention to what the people in the pictures are thinking and feeling. In this story, the people do not talk with each other. There is no talking in this cartoon. The people in this story just look at each other; they don't talk. Take a few moments to look at the whole thing before starting your story and tell me when you have decided what the whole thing is about. Ready? What is happening in this cartoon?

Story:

- Frame 1. The boy is playing baseball.
2. He hits the ball very hard.
 3. It smashes the window of a parked car.
 4. The boy is scared and runs home.
 5. The boy hides in his house.

6. The boy is looking nervously out the window, afraid the owner of the car will come to his house. The father watches.
7. There was a knock at the door.
8. The boy is very scared and tries to stop his father from opening the front door.
9. The boy is very upset and he starts to run away.

Now I want you to begin again with this card (frame 6) and tell me what's happening here, except this time I want you to tell me what the father thinks is going on. Remember the boy and father do not talk to each other. There is no talking in this cartoon. The people in this story just look at each other; they don't talk to each other. Pay special attention to what the father thinks the boy is thinking and feeling. Begin here (frame 6) and tell me what the father thinks is going on with the boy in these pictures.

Appendix C

Recursive Role-Taking Test

Now we're going to do something different.

Here are pictures of a boy, a girl, a father, and a mother (E shows).

I want you to draw some cartoons with these people. Let me show you how we are going to do it.

This is the way you will draw someone thinking about something. You draw a wavy balloon like this (E demonstrates).

I am going to read a sentence and then I want you to use the pictures of the people to make a cartoon. You will be able to read along with me when I read the sentence.

Here, I am going to read it:

1. Practice: The boy is thinking of the girl.

Now watch me make a cartoon of this (E demonstrates). Do you understand? Any questions? Good. Why don't you practice making one wavy balloon under my picture?

Here's the next sentence, and I want you to make a cartoon of it all by yourself. Read along with me.

2. The boy is thinking of the girl and the father.

Now make the cartoon. (E corrects if necessary and explains the error).

Good, now I want you to draw this next one:

3. The boy is thinking of himself. (E does not correct).

Now I am going to show you how we will draw someone talking to someone (E demonstrates). See, you draw a plain balloon to show that someone is talking and a wavy balloon to show someone is thinking.

Now I'll read the next sentence, you follow along, and then I'll make

a cartoon of the sentence;

4. Practice: The boy is thinking that the girl is talking to the father (E demonstrates). Is that clear? Any questions? (E corrects if necessary.)

Now I'll read the next one and you draw it:

5. The boy is thinking that the girl is talking to him.
(No correction.)

Now let's look at the next sentence. I'll read it and you draw it. It's a little longer and a bit confusing. Think about the sentence before you draw the cartoon.

6. The boy is thinking that the girl is thinking of the father.
(No correction.)

Good, now I'll read the next one, you follow along, and then make the cartoon:

7. The boy is thinking that the girl is thinking of him. (No correction.)
O.K., now I'll read the next one. It's a long one so be sure to follow along and then make the cartoon when I am finished.

8. The boy is thinking that the girl is thinking of the father thinking of the mother. (No correction.)

Here's the next one. It's also long so be sure to follow along when I read it so you can make the cartoon.

9. The boy is thinking that the girl is thinking of the boy thinking of her. (No correction.)

That was great; we're all finished with the cartoon game.

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