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## The effects of children teaching younger children on thoughts, feelings, and prosocial behavior.

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THE EFFECTS OF CHILDREN TEACHING YOUNGER CHILDREN  
ON THOUGHTS, FEELINGS, AND PROSOCIAL BEHAVIOR

A Dissertation Presented

By

Michael Bernstein

Submitted to the Graduate School of the  
University of Massachusetts in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 1978

Psychology

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## DEDICATION

To my mother, father, brother, sister, and my  
dog Butch.

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Children of The Fort River School

Children of The Wildwood School

## Abstract

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In his writings on the development of positive social behavior and morality, Staub has suggested that one way in which children learn prosocial values and behaviors is by actually engaging in responsible activities. The major goal of the present study was to examine the effects of engaging in one kind of prosocial activity, teaching a younger child, on the subsequent helping behavior of fifth and sixth-grade children.

A second purpose of the research was to investigate the effects of variations in the teachers' feelings of personal effectiveness and feelings of having benefited the learner. It was predicted that verbal statements to teachers either praising them for their performance or pointing out how their teaching might benefit the learner would enhance later helping. Moreover, the combination of the two kinds of verbalizations was expected to be most effective.

Most theories which predict a relationship between participation in prosocial activities and later helping assume that the relationship is mediated by cognitive and



affective reactions to the prosocial experience. Therefore, this study looked at how experimental treatments affected children's feelings and self-evaluations. Also, the study attempted to relate performance in teaching, based on observational ratings, to thoughts, feelings, and prosocial behavior.

Fifth and sixth-grade children taught a matching to symbols game to a first or second-grader of the same sex. Prior to the teaching, half of the teachers were told how learning the game might benefit the younger child (benefits descriptions). The experimenter rated the performance of both the teacher and the learner during the interaction. Following the teaching, half of the teachers were complimented for their teaching skills (effectiveness feedback). A control group learned the game but did not teach.

After the experimental sessions, subjects made ratings of the experience, made self-evaluations, and reported their mood on questionnaires. Prosocial behavior was measured by both an immediate and a delayed posttest. On the immediate posttest, subjects helped needy children by filling canvas pouches with marbles (in contrast to engaging in a nonprosocial activity). The delayed posttest gave children the opportunity to make toys for hospitalized children.

The results indicated that even though teachers tended to report a greater willingness to help others, they were

no more helpful than controls. Methodological issues which may explain the failure to confirm the major hypothesis of the study are discussed. Benefits descriptions increased helping by boys on the immediate posttest. Effectiveness feedback did not influence prosocial behavior. Surprisingly, those children who were not praised for their teaching reported greater self-esteem than those who were. The interpretation is suggested that teachers who did not receive external confirmation of their abilities may have had a greater need to represent themselves in a positive way on the questionnaire.

Children's expressions of helpful intentions were positively correlated with helping on the immediate posttest. Although girls did not make significantly more toys than boys, they did make more attractive toys. Girls' evaluations of the teaching sessions were related to prosocial behavior in a complicated way. The experimenter's ratings of the teachers' performance were somewhat associated, in a positive direction, with helping on the delayed posttest.

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## C H A P T E R     I

### INTRODUCTION

An examination of social science journals published in the past ten years will attest to the tremendous increase of interest in the positive social behaviors of both children and adults. The popularity of this area for theory and research is further evidenced by major literature reviews (Bryan & London, 1970; Krebs, 1970; Bryan, 1975) and at least three recent volumes specifically devoted to prosocial behavior (Macaulay & Berkowitz, 1970; Wispé, 1972; Staub, 1978).

Although there is no one generally accepted definition of altruism or prosocial behavior, most of the definitions that have been proposed have stressed such characteristics as help given to another party or group at some sacrifice to the helper without any clearly apparent motive of personal gain (Krebs, 1970). Much of the disagreement about the definition of altruism has centered on the issue of possible gain or reinforcement to the helper, either through reciprocation or external or internal rewards. In order to circumvent a complex, and most intriguing, philosophical problem, for the purposes of this discussion prosocial be-



havior will refer to any and all behaviors which result in a benefit to recipients.

Why the interest in prosocial behavior? Traditionally, psychology has been most concerned with antisocial, deviant, and abnormal behaviors. The recognition of positive social behaviors as the subject of inquiry, therefore, represents an extremely meaningful extension of the domain of social science. Understanding those factors which impel us towards good is certainly as important as understanding those which impel us towards evil.

The recent and rapid growth of interest in prosocial behavior is due to a variety of reasons (Krebs, 1970; Wispé, 1972). It is a paradox, however, that perhaps the major, and certainly the most dramatic, impetus was a terrible incident which occurred almost fifteen years ago in a quiet, residential neighborhood in Kew Gardens, New York. A woman named Kitty Genovese was brutally murdered while 38 of her neighbors watched from their apartment windows. Although her murderer took more than a half-hour to complete his dreadful crime, not even one of these 38 people intervened; not even one did as much as pick up a telephone to alert the police.

The great public impact of this case and the vital questions it raised about people's behavior in social

situations attracted the attention of a number of social scientists (most notably Darley and Latané--see Darley & Latané, 1968; Latané & Darley, 1970a, 1970b). Interest in rescue behavior and bystander intervention (or the lack of it) inspired interest in other kinds of helping (e.g., sharing and donating).

Children's prosocial behavior and moral development have been of particular interest to developmental psychologists. The study of children's prosocial behavior is of theoretical importance as it pertains to developmental processes in general and social development in particular. Clearly, it also has applied value: the knowledge gained will, hopefully, identify socializing practices, experiences, and influences which contribute to the development of prosocial children.

Factors which influence prosocial development. The literature has implicated a number of factors which encourage prosocial development. Some of them will be briefly discussed here.

A considerable amount of the research on children's helping behavior has been concerned with how the behavioral example of a model affects self-sacrifice (Rosenhan & White, 1967; Bryan & Walbek, 1970a, 1970b; Grusec & Skubiski,



1970; Rushton, 1975; Grusec, Kuczynski, Rushton & Simutis, 1978). Much of this research has been guided by social learning theory (Bandura, 1971). Although the precise ways in which the model influences behavior are important problems not very well understood at the present time (Bryan, 1972; Bernstein, unpublished manuscript), it is clear that the observation of a prosocial model who provides no reinforcement (at least in the usual sense of the term) increases children's generosity.

Another important factor is an affectionate, nurturant parent-child relationship (Hoffman & Saltzstein, 1967; Rutherford & Mussen, 1968; Mussen, Rutherford, Harris & Keasey, 1970; Staub, 1975a). The literature suggests that a favorable bond creates a general atmosphere conducive to positive psycho-social development. It might also enhance parents' effectiveness as models of appropriate behaviors.

Specific patterns of parental practices and disciplinary techniques have also been related to helping behavior and moral development (Hoffman, 1963, 1970; Hoffman & Saltzstein, 1967; Baurmrind, 1971, 1975; Olejnik & McKinney, 1973). In his writings and research Hoffman has emphasized the superiority of a disciplinary technique involving the use of reasoning, which he called induction, over methods based on either power assertion or love withdrawal.

Inductive reasoning is other-oriented. It points out the distress experienced by others as a consequence of the child's misdeeds. As an example of the use of induction, a parent might say the following to a child who had teased another child: "That child is crying because you said something that hurt his/her feelings." The use of induction has been shown to relate to a number of indices of children's moral development including internalized moral judgements, positive sociometric ratings, and behaviors expressing consideration for the well-being of others (Hoffman, 1963; Hoffman & Saltzstein, 1967).

Because Hoffman was primarily concerned with disciplinary techniques, that is, how parents respond to transgressions, the induction he described refers to the negative effects of children's antisocial behaviors. Staub (1971a) recognized that inductive reasoning might also be of value in promoting positive social behaviors. He made a distinction between the negative induction addressed by Hoffman and a form of induction that is more positive in orientation. Positive induction focuses on the benefits to others resulting from prosocial behavior. An example of positive induction would be a parent telling a child the following: "If you share your toys with your friends, they will enjoy them also and feel happy."

The two kinds of induction have different implications for behavior. Negative induction has as its primary focus the omission of behavior (i.e., misdeeds). Positive induction, on the other hand, encourages the commission of behavior. Staub (1975b) proposed that positive induction is most likely to be effective when it is combined with opportunities to actually engage in the kinds of behaviors implied by the inductive statements.

In fact, a number of studies have indicated that, by themselves, inductive statements and other kinds of verbalizations are often ineffective in inducing helping behavior. The results of studies using a modeling paradigm have consistently shown that while behavioral example affects children's donations to charity, the model's verbal exhortations encouraging sharing and verbal reminders of prosocial norms (e.g., "It is really good to donate to poor children") have no effect on generosity (Bryan & Walbek, 1970a, 1970b; Grusec & Skubiski, 1970; Bryan, 1972, 1975).

In a study which compared the effects of both role-playing and induction on the prosocial behavior of kindergarten children, Staub (1971a) found that role-playing was effective in increasing helping and sharing but induction was not.

In a master's thesis exploring the effects of verbalizations on prosocial behavior, Bernstein (1975) found that verbal statements highlighting the distress and boredom experienced by hospitalized children actually decreased the number of puzzles that seventh-grade boys made for these children relative to a control group who heard no such verbalizations.

Staub and Fotta (see Staub, 1978) conducted an elaborate project comparing the effects of induction and participation in responsible action on the helping behavior of fifth and sixth-grade children. In a series of four sessions, children either made puzzles for hospitalized children (prosocial activity) or listened to stories and made drawings based on the themes of the stories (neutral activity). Half of the children in each of the activity conditions also heard inductive statements which pointed out the benefits to hospitalized children of receiving the puzzles.

The results of this study revealed that inductive statements alone had no effects on either an immediate post-test (donating gift certificates) or a delayed measure (writing letters to hospitalized children). However, the combination of induction and participation in responsible action did increase the number of letters that girls, though not boys, wrote.

Responsibility assignment and participation in prosocial activities. It appears likely that the assignment of responsibility to children and their actual participation in positive social activities are, by themselves, important antecedents of prosocial behavior. With regard to this, Staub (1975a) made a distinction between direct and indirect training in prosocial behavior. Much of the current body of literature has explored rather direct efforts by socializers to affect helping (e.g., modeling, verbal exhortations, etc.). This research provided knowledge about some potential influences on positive behaviors. Children may also learn prosocial values and behaviors in more experiential ways, such as through responsibility assignment and by engaging in helpful activities.

The results of a number of studies may be interpreted as showing the influence of assigning children to responsible actions for their later prosocial development. Cross-cultural research has shown that children from cultures requiring them to perform more duties which contribute to the support of their families (e.g., taking care of farm animals) are more altruistic (Whiting & Whiting, 1969). Also, Baumrind (1971, 1975) found a positive association between child-rearing practices which included delegating household chores to children and indices of positive social



development. However, engaging in work would not be beneficial to children if they are exploited by their families or by their cultures (see Staub, 1978).

The results of a series of studies by Staub (1969, 1971b, 1971c, 1974) examining some of the factors determining whether or not children attempt to help another child in distress are also relevant to the issue under discussion. In these studies children making drawings or engaging in similar activities heard sounds of another child in distress (actually tape-recordings) coming from an adjoining room. In one study (Staub, 1969), first-graders who were told the following: "I will leave you in charge of things, O.K.? . . . If anything happens you will take care of it" (a responsibility assignment) were more helpful than children who were not left in charge.

These studies have also found that oldest siblings tend to be most helpful and youngest siblings tend to be least helpful. One possible explanation for this finding might be that older siblings had more experiences of being responsible for others, particularly younger siblings (Staub, 1978).

The results of a study by Rosenhan (1969) examining the effects of a model on the prosocial behavior of first through fifth-graders are consistent with this hypothesis. There

was an interesting developmental shift in the relationship between birth order and helping. At a younger age (six and seven-years old), first-born children were less generous than later-born children. However, among the older children (nine and ten-years old), it was the first-borns who were most generous. Rosenhan interpreted this finding by suggesting that although first-borns are initially more dependent (and, therefore, presumably less helpful) as they become older they assume responsibilities for younger children, thereby learning to be more helpful.

The ancillary findings of research by Staub and Buswell (see Staub, 1978) further illustrates the importance of indirect socialization through responsibility assignment. In this study, the experimenters enlisted the cooperation of children to act as confederates in training other children to perform helping behaviors. In response to signals, the confederates acted out behaviors requiring assistance from the subject children (e.g., being unable to reach a book). These children, who collaborated with the experimenter, later were more responsive to the sounds of a child in distress than the children who were the subjects of the training.

The previously discussed research by Staub and Fotta (Staub, 1978) demonstrated that participating in a prosocial

activity combined with induction can enhance helping by girls. In a later study, Staub and Feinberg (see Staub, 1978) conducted an extremely elaborate experiment investigating the effects of both induction and participation in a variety of prosocial activities on the helping behavior of fourth, fifth, and sixth-grade children. The rather complicated findings showed that helping an art teacher, by making toys, increased boys' subsequent helping on both a sharing and a toy-making (for hospitalized children) posttest. Girls who helped the art teacher also shared more gift certificates. However, girls in another prosocial activities group, making toys for hospitalized children combined with induction, were most helpful on the toy-making posttest.

Teaching: A prosocial activity. Teaching others might be a particularly meaningful kind of prosocial activity. In recent years, cross-age tutoring has become an increasingly popular educational adjunct in our schools (Allen, 1976). Many of these programs are concerned with the effects of tutoring on tutors as well as tutees. Various programs have included, as tutors, middle-class children, disadvantaged children, children with remedial problems, and children with behavior problems.



Both anecdotal reports and the results of more rigorous experimental studies have indicated that tutors sometimes improve in social behaviors, attitudes, and self-esteem as well as in the school subjects they tutor (Lippett, 1968; Thelen, 1969; Gartner, Kohler & Riessman, 1971; Allen, 1976; Devin-Sheehan, Feldman & Allen, 1967).

In one study, Yamamoto and Klentschy (1972) reported that low-achieving fifth and sixth-grade children who tutored younger children scored significantly higher on measures of positive self-attitudes than matched controls who did not have the tutoring experience.

In another tutoring program (Mohan, 1972), seventh and eighth-graders, described as poorly motivated, showed favorable increases in self-concepts after tutoring younger children in math. However, well-controlled experimental research investigating the effects of tutoring on tutors has tended to involve children with school-related problems. It would be useful to have more data from children without these problems.

Nevertheless, after reviewing the literature on tutoring programs, Allen (1976) concluded the following: "It is clear that the process of helping another person results in beneficial psychological changes in the person providing the help. Unfortunately, in our society children are typically the recipients of help from others rather than the givers of help."

Furthermore, a series of studies by Staub and his associates showed that the experience of teaching others can have positive effect on children's later helping. An experiment by Staub, Leavy, and Shortsleeves (see Staub, 1978) looked at the effectiveness of indirect training in prosocial behavior. Fifth and sixth-grade girls either learned first-aid techniques (prosocial activity) or puzzle-making (neutral activity). They then either continued practicing these activities or taught them to younger children. Children in the teaching groups later wrote significantly more letters to hospitalized children. Surprisingly, however, teaching puzzle-making was more effective than teaching first-aid skills. In other words, children who taught the presumably neutral activity were subsequently more helpful than children who taught the prosocial activity.

One explanation, advanced by Staub, proposed that within the context of teaching puzzle-making was not a neutral activity: Children who taught puzzle-making may have felt that they were directly benefiting the younger children by showing them an enjoyable activity. The benefits of teaching first-aid skills may have been regarded as somewhat less direct: The potential recipients were not the children they taught but those who might some day be helped by the children who learned first-aid.

The previously discussed research by Staub and Feinberg included conditions in which children taught prosocial activities to younger children. The teaching conditions corresponded to the prosocial activities engaged in by children in nonteaching groups. For example, one group of subjects made toys for hospitalized children.

No differences were found between the teaching and the nonteaching (participation) groups. In fact, data from the two groups were combined for the analyses of this study discussed in publications (see Feinberg & Staub, 1975; Staub, 1978). Rather than disconfirming the value of teaching, I believe that this research demonstrates that participation in other kinds of prosocial activities can also promote helping.

Finally, the results of an elaborate project by Staub and Jancaterino (see Staub, 1978) did show that subjects who taught younger children (puzzle-making) later donated more gift certificates to charity than subjects in nonteaching groups.

Why does responsibility assignment and participation in prosocial activities, such as teaching, promote helping?

The results of a rather broad range of research corroborates that providing children with opportunities to engage in responsible activities, such as teaching, can enhance sub-

sequent prosocial behavior. In this section I will discuss possible reasons for this relationship and some relevant theoretical issues.

Assigning responsibility to children confers importance on them by demonstrating that their contributions are valued. Moreover, there may be elements of prestige and status associated with the roles that they are assigned. A good example of this is being a teacher. Indeed, the previously discussed tutoring literature suggests that acting as a tutor can have beneficial psychological effects.

Participating in activities which encourage feelings of self-esteem, competence, and other positive feelings can promote later helping. Deriving a sense of self-worth and effectiveness from helping others can be regarded as experiencing success. Research with both children (Isen, Horn & Rosenhan, 1973) and adults (Berkowitz & Connors, 1966) showed that success increased generosity. Isen, Horn, and Rosenhan offered an interpretation of this result emphasizing the affective component of success: Success produces a "positive-glow" (Isen, 1970) which increases the likelihood of helping others.

In another study (Kazdin & Bryan, 1971) adult subjects told that they were highly competent on a task unrelated to the helping measure were more willing to donate

blood than subjects told that they were incompetent. This finding is consistent with the "positive-glow" hypothesis. However, since there was no control group, an alternative explanation is that the incompetence manipulation may have decreased volunteering.

Providing children with opportunities to feel that they have contributed to the welfare or the enjoyment of others is an extremely meaningful aspect of participation in responsible activities. Staub (1978) proposed that feelings of competence and other positive feelings may, through helping experiences, become associated with benefiting others. This association would increase the attractiveness of prosocial behavior. Writing from the perspective of social learning theory, Rosenhan (1972) suggested that helping behavior may be "self-reinforcing" because it enhances the helpers' feelings of goodness.

An interesting study (Miller & Morris, 1974) examining the effects of being imitated on the behavior of models suggests an additional reason why certain helping activities may be reinforcing to helpers. The authors found that imitating the responses (which hole they deposited a marble in a marble-dropping task) of preschool children increased the probability of the imitated responses being repeated. Their interpretation is that being imitated is reinforcing.



Teaching often entails modeling behaviors which are imitated by learners. The Miller and Morris hypothesis predicts that children given the opportunity to teach would experience reinforcement and would, therefore, elect to continue the activity.

Also from the point of view of learning theory, by actually participating in prosocial activities children may learn that they are expected to behave in ways which demonstrate concern for the well-being of others: They may be rewarded by socializers for helping and, possibly, punished (minimally ~ receive disapproval) for not helping. Eventually, prosocial values might become "internalized" so that helping others becomes self-initiated. As a result of their helping experiences, children might make self-attributions about being the kind of people who help others. These attributions would affect the way children interpret and respond to situations in which others may need help.

Participation in responsible actions might be particularly likely to foster the internalization of prosocial values for another reason. Under certain conditions, highly direct attempts to influence children's positive behaviors might be regarded as manipulative. This could elicit psychological reactance (Brehm, 1966) militating against internalization. Psychological reactance refers to the oppositional tendencies which may be aroused when

people perceive that their freedom of choice is being threatened. Reactance might be less likely to occur as a result of participation in prosocial activities because its more indirect nature might minimize the perception of external pressure from socializers.

Purposes of study. The major purpose of this study is to further substantiate the relationship between children engaging in a meaningful prosocial activity, teaching younger children, and subsequent helping behavior.

An important issue raised by such a relationship concerns identifying the specific characteristics of the teaching experience which promote prosocial development. Therefore, a second purpose of the research is to go beyond establishing a relationship between teaching and helping by examining some of the characteristics of the teaching situation that are likely to be important.

The study will investigate the role of two factors which the foregoing discussion suggested might affect later helping: 1) Feelings of being effective, 2) Feelings of benefiting others. Children who are told that they were very effective teachers might feel more highly regarded by others, more successful, and more competent. These positive feelings could enhance later helping.

Children who feel that their teaching was of greater benefit to the learner might also derive greater satis-

faction from the experience and feel more positive about themselves. The concept of empathy is relevant. The most useful definition of empathy, in my judgement, refers to the ability to both understand and respond affectively to the feelings of others. Theorists have frequently maintained that empathy is an important mediator of helping (Aronfreed, 1968; Bryan, 1975). By focusing attention on the needs and feelings of others, pointing out the benefits to the learner of their teaching may contribute to the development of empathy.

It is predicted that articulating, by verbal statements, the effectiveness of the teachers' performance and the benefits which accrue to the learners can amplify the sense of effectiveness, the sense of benefiting others, and their association, and thereby affect children's helping. Although both statements highlighting the effectiveness of the teaching and the benefits to the learners are expected to, independently, increase later helping, the combination of the two might be most effective because it clearly identifies the association between the children's behaviors and consequences for others.

Most theories which predict that participating in responsible activities encourages later prosocial behavior assume that the helping is mediated by cognitive and affective reactions: positive self-evaluations and attribu-



tions, internalized prosocial values, positive affective states, etc. An important objective of this research is to test these assumptions by investigating how the experience of teaching younger children affects thoughts and feelings and how these relate to behavior. For example, do teachers report feeling more positive about themselves and more inclined to help others than control children? How are these feelings related to actual helping?, etc. Therefore, questionnaire data will be collected.

Finally, the study will attempt to relate performance measures, based on observational ratings, to thoughts, feelings, and helping behavior. For example, do children rated as being better teachers make more favorable self-evaluations? Do they help more on posttests?, etc.

## C H A P T E R    I I

### METHOD

Brief overview of study. In this study, fifth and sixth-grade boys and girls learned a board game, involving a matching to symbols task. They were then given the opportunity to teach the game to first and second-grade children of the same sex. A control group learned the game but did not teach. Prior to their teaching the game, half of the children in the teaching group were told how learning the game might be of benefit to the younger children.

During the teaching sessions, observational data was collected: The experimenter rated the performance of both older and younger children. In order to examine the role of feelings of effectiveness in a balanced factorial design, half of the teachers were told that they did a particularly good job of teaching.

The subjects reported their thoughts and feelings on a questionnaire that they filled out. The prosocial behavior of the subjects was measured by both an immediate and a delayed posttest. The immediate posttest was the number of pouches they filled with marbles for needy children during a four-minute period. The delayed test was administered at

least a day later by a second experimenter. It entailed making toys, at home, for children in a state school for the retarded.

Experimental design. The experimental design was 2x2x2: benefits described-no benefits described; effectiveness feedback-no effectiveness feedback; sex). In addition, there was a control group of children not given the opportunity to teach.

Subjects. Subjects were 90 fifth and sixth-grade children attending two predominantly middle-class public schools located in Amherst, Massachusetts. Boys and girls were equally represented. Also, 72 first and second-grade children (36 boys and 36 girls) from the same schools participated in the study.

Letters were mailed to parents describing the researchers' interest in children's positive social behaviors and requesting permission for their children to participate in a project concerned with how the experience of teaching others affects children. Only those children whose parents returned consent forms were included in the study.

Assignment to treatments. The assignment of older children to each of the four teaching groups (benefits descriptions only; effectiveness feedback only; both treatments; neither treatment) or to the control group was predetermined ac-

cording to a randomly ordered schedule which assured an equal number of boys and girls in each experimental condition. There were nine boys and nine girls in each of the teaching groups and in the control group.

Subjects participated individually, one at a time. Teachers taught the game to only one younger child. In order to simplify the design and the analyses, teaching pairs were of the same sex.

Location of the study. The study was conducted at a table in the schools' libraries. Besides serving as a library facility, these rooms were used for a number of other purposes: meetings, conferences with teachers and guidance counselors, remedial instruction, individual activities, small group projects, etc. Therefore, although the setting for the research was not private, it was the most appropriate and natural location for these activities to take place. In the experimenter's judgement, this setting did not impinge on the participants in any way.

Task. The game used in the study was a somewhat simplified version of a task developed by Garbarino (1975). Materials consisted of a 12" by 6" gameboard divided into 18 2" by 2" squares and 18 plastic buttons. The buttons differed from each other along three dimensions: size (large or small), color (blue, green, or brown), and presence or absence of a

red felt dot at the center.

Each square of the gameboard contained three symbols corresponding to the dimensions of the buttons. The object of the game was to place the buttons on the correct squares by matching the dimensions of the buttons to the symbols written in the squares. An illustration of the gameboard and a chart revealing the code for matching are shown in Appendix A.

Procedure. An older child was escorted from the classroom to the library by the experimenter, a male graduate student. Introducing himself as coming from the University, the experimenter told the child that "We have some things for you to do today, and I hope that you are going to enjoy yourself this morning/afternoon." In order to establish a positive rapport with the child, the experimenter asked about his/her plans for the upcoming summer vacation (e.g., "What are some of the things you are going to do this summer?"; "Do you like to go swimming?," etc.

After the child in the teaching group was comfortably seated at a table in the library the experimenter made the following statement:

We have a game that we made up. We made this game for young children, about first and second-grade age. I would like to show you how to play the game so that afterwards you can teach it to a younger boy/girl (same sex as child). O.K.? We want to find out about how younger children learn the game and they may enjoy learning it from an older child.



We also want to know whether you think it's a good game for first and second-graders."

Children in the control group heard a somewhat different introduction:

We have a game that we made up. We made this game for young children, about first and second-grade age. However, there are some games that both younger and older children, as well as adults, like to play (cite some examples--checkers, baseball, etc.). We would like to know if this game is also a good game for older children. I would like to show you how to play this game so that afterwards you can tell me what you think of it. O.K.?"

Teaching the game to older children. The strategy for teaching the game was adopted from the procedures described by Garbarino (1975). The specific instructions are a modified version of those used by Garbarino.

1. Describe object of task: "Let me show you how to play the game now. We have this gameboard (point to gameboard) and these buttons (empty buttons from plastic cup to table). The object of this game is to place the buttons on the right squares of the gameboard. As you can see, these buttons differ from each other in three ways: size--large or small; color--blue, green, or brown; and also some of them have a red dot in the center.

"Each one of these symbols on the board tells you something about a button. The bottom symbol in each box refers to the size of the button: this (pointing) means large and this means small. The top symbol in each box refers to the color of the button: this means blue, and this means green,

and this one means brown. And if the box has an 'X' in the corner, that means that the button that goes there should have a red dot."

2. Place several buttons (three or four) while articulating the dimensions of the match. For example, "This button is large and green and it doesn't have a red dot, so it goes here."
3. Ask the child to place a few buttons on the gameboard-- "O.K. Would you like to try one? . . . How about this one?"
4. Encourage the child to articulate the dimensions of the match. Acknowledge correct placements with positive feedback. For example, "Yes, that's right or "Good."
5. When placements are incorrect, call the child's attention to the meaning of the symbols. For example, "Which one means brown?" or "Does that box have an 'X' in the corner?"
6. Reinforce corrections of errors with positive feedback. For example, "You got it right, now."

Criteria for mastery of the game were filling the gameboard without any errors on the last six placements and correctly articulating the dimensions of the placements. In addition, children were asked if they knew what all the symbols meant. If they either reported that they did not or they were not sure, they were allowed to continue to play the game until they felt that they had mastered it.

After they had mastered the game, children in the teaching groups were given the opportunity to teach it to a

younger child. These children in the control group filled out a questionnaire after learning the game.

Statement that younger children might not master task. The game was designed to be interesting to first and second grade children without being too difficult for them. Nevertheless, it was recognized that some of the younger children might not master the game in the allotted time of fifteen minutes. The purpose of the following statement was to prepare older children for this possibility in order to minimize the likelihood of their making negative inferences about their teaching: "We only have about 15 minutes for you to teach. Sometimes it takes young children a longer while than that to get the hang of this game. So maybe the child you're going to teach might not get all of it. However, (s)he might learn it and will probably get some of it. You will see how much."

Criterion of mastery by younger children. The experimenter also made the following statement to the teachers: "You're the teacher and it is up to you to decide when the child you're teaching has learned the game. However, a good way of telling, I think, is to see if (s)he can fill a whole row (six squares) without making a mistake."

Benefits to younger children. In order to examine how specifying the possible benefits to the younger children of



learning the game might affect their prosocial thoughts and behaviors, half of the teachers heard the following statement emphasizing the possible entertainment and educational value of the game:

We think that young children will enjoy learning this game and have fun playing it. Discovering where the buttons go will make them feel pleased with themselves.

Learning the game might also be useful to children because some of what you need to know to get it right is similar to some of the things you need to know to do well in certain subjects in school. For example, you have to learn rules about what things go together, and how they go together. Like, for instance, that this symbol (pointing to the gameboard) means blue. In school you also have to learn rules about what things mean. For example, that a plus sign means to add and a minus sign means to subtract.

So, not only do we think that this is a fun game for first and second-graders, but we also think that they may learn some things from playing it."

Presentation of task to younger children. The experimenter escorted the younger child to the library. While they were walking, he asked him/her about what (s)he had been doing in class. Asking the child to take a seat adjacent to the subject, the experimenter introduced the two children. He then made the following statement: "We showed (older child's name) how to play a game that we made up and I would like him/her to show you how to play it. The game is about finding out where these buttons go on this board."

The children were further told that they could play the game for as long as they wanted to--up to fifteen minutes, and that they would be reminded when this time was up.

Teaching session. During the teaching session the experimenter sat at the far end of the table casually observing the interaction. The experimenter covertly rated the performance of both the teacher and the learner. Also, an effort (which was not successful) was made to establish inter-rater reliability: A female confederate who was seated at another table pretending to read a book rated fifteen of the teaching sessions. A list of the rating categories and criteria for scoring is presented in Appendix B.

The session concluded when teachers reported that the younger child had learned the game or the fifteen-minute time limit was up. When the teaching was finished, the younger child was thanked for participating and returned to the classroom.

Effectiveness feedback. The influence of praise for effective teaching on children's thoughts and behaviors was examined by the experimenter making the following statement to half of the children in the teaching group:

"I'd like to tell you that I thought that your teaching was very good. You explained things very clearly, and you gave good directions for playing the game. And you did it in an interesting way."

Questionnaire ratings. Following the teaching, older children filled out a questionnaire comprised of items with seven-point rating scales. Questionnaires completed by both teachers and controls contained nine items permitting children to relate their opinions about the game, express their mood, report how they felt about themselves, and indicate how much they felt like helping others. Theoretical speculations have suggested that these kinds of thoughts and feelings mediate helping behavior (see Introduction). The nine items are presented in Table 1.

Table 1

Questionnaire Items  
(presented with seven-point rating scales)

Item

1. How easy was it for you to learn the game?
2. How much did you like the game?
3. How much would you enjoy teaching this game or some other things to other children?
4. People feel better or worse at different times. How good (pleasant) do you feel right now?

Table 1 (continued)

5. Do you feel better or worse than usual right now?
6. I'm pretty sure of myself.
7. I'm easy to like.
8. I can be depended on.
9. How much do you feel right now that you would like to help other people?

The teaching groups' questionnaires contained four additional items examining both teachers' own feelings about their performance and their assessments of the learner. The items pertaining to the teaching experience are listed in Table 2. Appendix C contains a copy of the questionnaire specifying the directions, items, and rating scales.

Table 2

Teachers' Questionnaire Items  
(presented with seven-point rating scales)

Item

1. How much did you like teaching the game?
2. How much did the child you taught like the game?
3. Do you think you did a good job teaching the game?
4. How good a learner was the child you taught?

Immediate behavioral posttest. The immediate behavioral posttest was administered after the child finished the questionnaire. The experimenter explained that there was

another form to be completed which he had left outside in his car. Telling the child that he would return in a few minutes, (s)he was given the opportunity to engage in either or both of two activities during the experimenter's absence.

One of these was the prosocial activity. The experimenter placed a cardboard box and two opaque plastic bags on the table. The box was filled with approximately 500 marbles. One of the bags contained about 40 empty canvas pouches. The other bag held 15 pouches filled with marbles. If (s)he elected to, the child could help "children who, for one reason or another, don't have many toys" by filling canvas pouches with 12 marbles and putting them in the bag with the completed pouches. The reason for preloading the bag was to make attention to how much children helped appear less obvious.

The alternative activity was non-prosocial. It involved working, with a pencil, on a booklet containing interesting word games and anagrams. Both of these activities were presented as voluntary.

After exactly four minutes had elapsed, the experimenter returned with a form asking children to list their favorite books, television programs, and recreational activities. On completion of this form, the child was thanked for participating and returned to the classroom.

The measure helping behavior on this posttest was, of course, the number of pouches that children filled with marbles during the four-minute period.

Delayed behavioral posttest. The delayed behavioral posttest was administered to all of the older children who participated in the study. Although it was to occur on the day following the experimental session, for a variety of reasons this could not always be accomplished. Therefore, the policy was to schedule the posttest as close to one day after the experimental session as possible. Table 3 shows the frequency distribution for the number of days between the experimental sessions and the delayed behavioral posttests.

Table 3

Frequency Distribution: Number of Days  
Between Experimental Session and Delayed Posttest

| <u>Number of days between<br/>experimental session<br/>and delayed posttest</u> | <u>Number of children</u> |
|---|---------------------------|
| 1 . . . . .   | 42                        |
| 2 . . . . .   | 15                        |
| 3 . . . . .   | 15                        |
| 4 . . . . .   | 11                        |
| 5 . . . . .   | 04                        |
| 6 . . . . .   | 02                        |
| 7 . . . . .   | 01                        |

This posttest was administered by a second male experimenter not associated with the initial sessions. Depending on their availability for testing, children either



received the posttest individually or in small groups of up to four members. They were escorted from their classrooms to the schools' libraries by the experimenter who introduced himself as representing a group from the university interested in helping "children who for some reason need help." He explained that the purpose of his visit was to ask them to help mentally retarded children living at a state school by making toys for them with materials supplied by the experimenter. The helping activity was to be performed at home and was completely voluntary.

Children were told that they could make up to three toys: either puppets or fishing games, depending on their preference. The experimenter displayed an example of each toy. Describing how to make the toys, he showed them the materials that would be supplied. If they elected to, children could choose envelopes containing directions and materials for the construction of either three puppets or three fishing games. (By allowing children to select the kind of toy they wanted to make, we hoped to heighten feelings of involvement in the project as well as make the helping somewhat less restrictive.) The voluntary nature of the project was emphasized by telling children "You will do it only if you want to . . . you can make as few or as many as you wish" (up to three).

Completed toys and/or unused materials were to be returned, in their envelopes, to a box located in the school's

central office. The experimenter suggested that the envelopes be returned within three days. Although ostensibly the helping activity was anonymous, unobtrusive code numbers printed on the envelopes permitted the identification of children who made toys.

After finishing the instructions, the experimenter asked the children if they had any questions. They were then thanked and returned to their classes. Appendix D includes descriptions of the toys, materials provided, and directions for completing the toys.

One dependent measure was the number of toys that children made. The possible range of this measure was from zero to three. In addition, a second measure of helping was derived from the toy-making. This task was designed to permit considerable initiative in the amount of effort required for completing the toys. Children could decorate the toys as much or as little as they wanted. Differences in the quality of the finished toys might reflect differences in efforts devoted to helping others. In order to obtain a measure of helping sensitive to effort and quality, the toys were rated on a four-point scale. Inter-rater reliability was greater than 90%. The possible range of the resulting scores were from zero to twelve (number of toys by number of rating points for each toy). Details of the toy-rating procedure, including rating criteria and inter-rater reliability, are presented in Appendix E.

## CHAPTER III

### RESULTS

Factor scores. A factor analysis was performed on responses to the nine questionnaire items common to both teaching subjects and controls. This procedure identified three factors. An examination of how the items loaded on the factors suggested that the three factors represent, respectively, the following three kinds of thoughts and feelings: 1) Feelings of helpfulness, 2) Positive-mood, 3) Self-esteem. Table 4 presents the varimax rotated factor matrix.

Helpfulness: As shown in the table, the two questionnaire items concerned with helping others load particularly high on this factor: Item #3 - "How much would you enjoy teaching this game or some other things to other people?" Item #9 - "How much do you feel right now that you would like to help other people?"

Positive-mood: The highest loadings on this factor are the two items which express how good the child felt following the treatment session: Item #4 - "People feel better or worse at different times. How good (pleasant)

Table 4  
Varimax Rotated Factor Matrix

| <u>Item #</u> | <u>Factor 1<br/>Helpfulness</u> | <u>Factor 2<br/>Positive-mood</u> | <u>Factor 3<br/>Self-esteem</u> |
|---------------|---------------------------------|-----------------------------------|---------------------------------|
| 1             | .04390                          | .25244                            | .20791                          |
| 2             | .38373                          | .44660                            | .09583                          |
| 3             | .81880                          | .20365                            | .16905                          |
| 4             | .37250                          | .79017                            | .11416                          |
| 5             | .26134                          | .65446                            | .05828                          |
| 6             | .29994                          | .14101                            | .60847                          |
| 7             | .00683                          | .13503                            | .85089                          |
| 8             | .15288                          | .04780                            | .69143                          |
| 9             | .71442                          | .25815                            | .11846                          |

Item #

1. How easy was it for you to learn the game?
2. How much did you like the game?
3. How much would you enjoy teaching this game or some other thing to other children?
4. How good (pleasant) do you feel right now?
5. Do you feel better or worse than usual right now?
6. I'm pretty sure of myself
7. I'm easy to like
8. I can be depended on
9. How much do you feel right now that you would like to help other people?

do you feel right now?" Item #5 - "Do you feel better or worse than usual right now?" Furthermore, Item #2 - "How much did you like the game?" - also loads high on this factor.

Self-esteem: The three items which ask children to describe their positive feelings about themselves are highly represented on this factor: Item #6 - "I'm pretty sure of myself," Item #7 - "I'm easy to like," and Item #8 - "I can be depended on."

Factor scores for each of the three factors were computed for all of the children in the study. These factor scores were included in many of the subsequent analyses exploring the results of the study.

Behavioral measures. Intercorrelations: The intercorrelations between the behavioral measures of helping are listed in Table 5.

Table 5

Pearson correlation coefficients between measures of helping behavior

|                | <u>Pouch</u> | <u>Toys</u> | <u>Toy-rate</u> |
|----------------|--------------|-------------|-----------------|
| <u>Pouch</u> : |              | .0294       | .0642           |
| <u>Toys</u> :  |              |             | .8704*          |

\* p<.001, two-tailed

As shown in the table, helping on the immediate posttest was not related to the later measures of helping behavior. However, the two delayed measures were highly correlated with each other. This finding is to be expected as both measures were derived from the same toy-making task and the toy-rating scores encompassed the number of toys measure.

Time between experimental session and delayed posttest: As reported in the methods section, there was some variation in the number of days between the experimental sessions and the administration of the delayed posttests. The correlations presented in Table 6 indicate that helping on the delayed measures was not affected by the length of this interval.

Table 6

Pearson correlation coefficient experimental  
session-delayed posttest interval and  
helping behavior

|  | <u>Toys</u> | <u>Toy-rate</u> |
|--|-------------|-----------------|
| Number of days between<br>experimental session<br>and delayed posttest | -.0803      | -.0951          |

#### Affective and cognitive effects.

Teachers versus controls: In order to determine how the teaching experience affected thoughts and feelings, teaching groups were compared to controls, who played the



game but were not given the opportunity to teach: Treatment groups by sex analyses of variance were performed using a 5x2 design (both treatments--benefits only--effectiveness only--neither treatment--controls; sex) on the three factor scores: helpfulness, positive-mood, and self-esteem.

Analysis of variance yielded a main effect for treatment groups on the helpfulness factor scores ( $F=2.745$ ,  $df=4/76$ ,  $p<.034$ ). The means of the treatment groups are listed in Table 7.

Table 7

Mean helpfulness scores by treatment groups

|                            | <u>Helpfulness</u> |
|----------------------------|--------------------|
| <u>Both Treatments:</u>    | -.0022             |
| <u>Benefits Only:</u>      | .9780              |
| <u>Effectiveness Only:</u> | -.0529             |
| <u>Neither Treatment:</u>  | .4402              |
| <u>Control:</u>            | -.4938             |

A posteriori tests of differences between pairs of group means revealed that children not given the opportunity to teach reported feeling less inclined to help others than teachers in both the benefits only group ( $t=2.02$ ,  $df=33$ ,  $p<.05$ , two-tailed) and the group receiving neither treat-

ment ( $t=3.30$ ,  $df=33$ ,  $p<.01$ , two-tailed). Moreover, to some extent (marginal) they felt less like helping than teachers who received both treatments ( $t=1.68$ ,  $df=31$ ,  $p<.10$ , two-tailed). Although the mean helpfulness score for controls was numerically lower than the score for the effectiveness only group, the difference was not significant.

It is interesting to note that the mean helpfulness score obtained by the group receiving neither benefits nor effectiveness treatments was numerically highest. However, it was not significantly different from the other teaching groups' scores.

There were no differences in either feelings of positive-mood or self-esteem detected by these treatment group by sex analyses. Despite this,  $2 \times 2$  analyses of variance contrasting the controls with the teaching group which received neither benefits descriptions nor effectiveness feedback (controls--neither treatment; sex) did indicate that teachers experienced enhanced self-esteem relative to control subjects ( $F=4.568$ ,  $df=1/31$ ,  $p<.041$ ): means of .3607 for the neither treatments group and -.2738 for controls.

Not surprisingly, this smaller analysis (i.e.,  $2 \times 2$ ) replicated the finding that, afterwards, teachers felt more helpful than controls ( $F=12.883$ ,  $df=1/31$ ,  $p<.001$ ).

The effects of treatments on teachers: In order to examine how the treatments provided to the children in the teaching groups affected their thoughts and feelings 2x2x2 (benefits described--no benefits described; effectiveness feedback--no effectiveness feedback; sex) analyses of variance were performed on the three sets of factor scores.

These analyses revealed that those children who were not praised for their teaching (i.e., no effectiveness group) reported greater feelings of self-esteem than those children who were praised ( $F=4.357$ ,  $df=1/61$ ,  $p<.041$ ): a mean of .2845 versus -.1693. That is, not only did the effectiveness treatment fail to heighten feelings of self-esteem, but it had a negative impact relative to the no effectiveness group. It should be noted, however, that the mean self-esteem scores of both groups were numerically higher than the score, previously reported, of the control group.

Also, a marginally significant main effect for sex suggested that boys experienced a more positive-mood following the teaching session ( $F=3.556$ ,  $df=1/61$ ,  $p<.064$ ): the mean positive-mood score for boys was .2540, for girls it was -.1261. Neither treatments nor sex affected the teaching groups' feelings of helpfulness.

Behavior effects.Did teaching increase helping relative to controls?

The helping behavior of teaching groups relative to controls was examined by analyses of variance which included the controls (i.e., 5x2 treatment groups by sex design). No significant effects on either the immediate posttest or the number of toys measure were demonstrated.

With the toy-rating scores, however, there was a significant main effect for sex which favored girls ( $F=4.196$ ,  $df=1/80$ ,  $p<.045$ ): a mean of 4.18 for girls versus 2.76 for boys.

The possibility of differences between teaching and nonteaching children was further investigated in 2x2 analyses of variance comparing controls with the teaching group receiving neither treatment (and by sex). Concordant with the larger analyses (i.e., 5x2), no differences appeared.

Teaching groups: A 2x2x2 analysis of variance by treatments and sex on the number of pouches completed by those children given the opportunity to teach yielded a significant interaction between sex and benefits ( $F=4.874$ ,  $df=1/64$ ,  $p<.031$ ). The means from these groups are presented in Table 8.

Table 8

Mean number of pouches by sex and benefits

|               | <u>Benefits</u> | <u>No Benefits</u> |
|---------------|-----------------|--------------------|
| <u>Boys:</u>  | 7.39            | 5.50               |
| <u>Girls:</u> | 5.06            | 7.06               |

The interaction suggests an inverse relationship between sex and benefits: Telling boys that their teaching would benefit a younger child increased their helping on a posttest which followed the teaching session but had an opposite effect on girls. Contrasts between pairs of cell means revealed that boys in the benefits group tended to make more pouches than boys in the no benefits group ( $t=1.68$ ,  $df=34$ ,  $p<.103$ , two-tailed). A second marginally significant difference suggested that boys in the benefits group also tended to help more than girls in that group ( $t=1.96$ ,  $df=34$ ,  $p<.059$ , two-tailed). An a post hoc test revealed no differences between girls in the benefits and no benefits groups.

Similar analyses on the two delayed measures showed no effects for either treatments or sex.

How effective were the treatments? Except for the greater number of pouches made by boys in the benefits group, the experimental treatments did not have the intended effects.

Some indication of whether or not the children "accepted" the information communicated in the benefits and effectiveness treatments can be gained through analyses of variance (2x2x2 design) on the four questionnaire items pertaining to the teaching experience. As shown in Table 9, a marginally significant interaction between sex and benefits on the rating "How much did the child you taught like the game?" ( $F=2.783$ ,  $df=1/62$ ,  $p<.10$ ) suggested that the benefits treatment did affect the judgements of boys relative to girls. Boys in the benefits group tended to feel that the children they taught liked the game more than did girls given the same treatment ( $t=1.68$ ,  $df=33$ ,  $p<.10$ , two-tailed). Although an a posteriori test failed to detect any differences, the mean rating of boys in the benefits group was numerically higher than boys in the no benefits group.

Table 9

Item: How much did the child you taught like the game?  
Mean rating on seven-point scale by sex and benefits

|               | <u>Benefits</u> | <u>No Benefits</u> |
|---------------|-----------------|--------------------|
| <u>Boys:</u>  | 5.28            | 4.78               |
| <u>Girls:</u> | 4.59            | 5.06               |

There was neither a main effect nor an interaction with effectiveness on the item "Do you think you did a good job teaching the game?" However, as shown in Table 10, sex



and benefits did marginally interact ( $F=3.435$ ,  $df=1/62$ ,  $p<.069$ ). Boys in the benefits group rated themselves as better teachers than boys in the no benefits group did ( $t=1.98$ ,  $df=34$ ,  $p<.05$ , two-tailed).

Table 10

Item: Do you think you did a good job teaching the game?  
Mean rating on seven-point scale by sex and benefits

|               | <u>Benefits</u> | <u>No Benefits</u> |
|---------------|-----------------|--------------------|
| <u>Boys:</u>  | 5.39            | 4.83               |
| <u>Girls:</u> | 5.00            | 5.18               |

Children's ratings of "How much did you like teaching the game?" were unaffected by either treatments or sex. There was, however, another marginally significant interaction between sex and benefits on the ratings of "How good a learner was the child you taught?" ( $F=3.564$ ,  $df=1/62$ ,  $p<.064$ ). Boys in the benefits group were more impressed with the younger children's abilities than boys in the no benefits group were ( $t=2.34$ ,  $df=34$ ,  $p<.02$ , two-tailed): see Table 11.

Table 11

Item: How good a learner was the child you taught?  
Mean rating on seven-point scale by sex and benefits

|               | <u>Benefits</u> | <u>No Benefits</u> |
|---------------|-----------------|--------------------|
| <u>Boys:</u>  | 6.50            | 5.67               |
| <u>Girls:</u> | 6.18            | 6.29               |

Feelings about the teaching and other thoughts and feelings. Correlations between the four questionnaire items pertaining to the teaching experience (seven-point scales) and the three factor scores are presented in Table 12. The table also shows separate correlations by sex. Children who rated themselves as superior teachers expressed a more positive-mood. Girls who felt that they did a better job teaching also reported greater self-esteem and were somewhat (marginally) more inclined to help others.

Boys who indicated that the younger children enjoyed the game more expressed greater self-esteem and (marginally) more helpful feelings. Moreover, teachers' favorable assessments of the younger children were associated with increased feelings of self-esteem and, for boys, with helpfulness. Finally, children who reported that they enjoyed the teaching more also felt more disposed towards helping others and experienced a more positive-mood.

Table 12

Pearson correlation coefficients between teachers' questionnaire ratings and factor scores

|   | <u>Helpfulness</u>   | <u>Positive-mood</u> | <u>Self-esteem</u>   |
|---|----------------------|----------------------|----------------------|
| <u>Do you think you did a good job teaching the game?</u> |                      |                      |                      |
| All Teachers (n=67)                                       | .2009 <sup>*</sup>   | .4568 <sup>***</sup> | .2374 <sup>*</sup>   |
| Girl Teachers (n=33)                                      | .2623 <sup>*</sup>   | .5061 <sup>***</sup> | .5153 <sup>***</sup> |
| Boy Teachers (n=34)                                       | .1676                | .4275 <sup>**</sup>  | .0413                |
| <u>How much did the child you taught like the game?</u>   |                      |                      |                      |
| All Teachers (n=67)                                       | .1986                | .0207                | .3349 <sup>***</sup> |
| Girl Teachers (n=33)                                      | .0154                | -.0346               | .1458                |
| Boy Teachers (n=34)                                       | .3297 <sup>*</sup>   | .0486                | .4558 <sup>***</sup> |
| <u>How much did you like teaching the game?</u>           |                      |                      |                      |
| All Teachers (n=67)                                       | .4559 <sup>***</sup> | .3753 <sup>***</sup> | .0349                |
| Girl Teachers (n=33)                                      | .5058 <sup>***</sup> | .3738 <sup>**</sup>  | .0533                |
| Boy Teachers (n=34)                                       | .4342 <sup>***</sup> | .4139 <sup>**</sup>  | .0221                |
| <u>How good a learner was the child you taught?</u>       |                      |                      |                      |
| All Teachers (n=67)                                       | .3286 <sup>***</sup> | -.0785               | .4258 <sup>***</sup> |
| Girl Teachers (n=33)                                      | .0673                | -.0714               | .4950 <sup>***</sup> |
| Boy Teachers (n=34)                                       | .4361 <sup>***</sup> | -.0719               | .4008 <sup>**</sup>  |

<sup>\*</sup> p<.10, <sup>\*\*</sup> p<.05, <sup>\*\*\*</sup> p<.01, two-tailed

Feelings about teaching and later helping behavior.

Correlational data obtained for girls, though not boys, offers some support of the hypotheses that the teachers' feelings of being effective and of having benefited the learner do influence later helping behavior. These correlations between children's ratings of the teaching sessions and helping behavior are displayed in Table 13.

Girls' own ratings (on a seven-point scale) of how good a job they did teaching the game was marginally correlated in a positive direction with the number of pouches they filled. However, the correlation with the number of toys was negative. A test of the difference between correlations indicated that this shift from a positive correlation on an immediate posttest to a negative correlation on a delayed posttest was significant ( $t=2.69$ ,  $df=32$ ,  $p<.02$ , two-tailed).

With regard to feelings of having contributed to the learner, the correlations suggest that girls who felt that the younger children liked the game more were also more helpful on the toy-making task.

Also, teachers' reports of how much they liked teaching the game predicted helping on the immediate posttest though not on the delayed measures. However, judgements about how well the younger children learned the game were not related to helping behavior.

Table 13

Pearson correlation coefficients between teachers' questionnaire ratings and behavioral measures

|   | <u>#Pouches</u> | <u>#Toys</u> | <u>Toy-rate</u> |
|---|-----------------|--------------|-----------------|
| <u>Do you think you did a good job teaching the game?</u> |                 |              |                 |
| All Teachers (n=70)                                       | .2197*          | -.2605**     | -.1593          |
| Girl Teachers (n=34)                                      | .3056*          | -.3520**     | -.2977*         |
| Boy Teachers (n=36)                                       | .1275           | -.1747       | -.0013          |
| <u>How much did the child you taught like the game?</u>   |                 |              |                 |
| All Teachers (n=70)                                       | .1678           | .2119*       | .2431**         |
| Girl Teachers (n=34)                                      | .2544           | .3137*       | .2921*          |
| Boy Teachers (n=36)                                       | .0846           | .1322        | .2423           |
| <u>How much did you like teaching the game?</u>           |                 |              |                 |
| All Teacher (n=70)  | .2304**         | -.0214       | .0706           |
| Girl Teachers (n=34)                                      | .2500           | .1208        | .0804           |
| Boy Teachers (n=36)                                       | .2144           | -.1496       | .0616           |
| <u>How good a learner was the child you taught?</u>       |                 |              |                 |
| All Teachers (n=70)                                       | .0807           | .0372        | .1074           |
| Girl Teachers (n=34)                                      | .1883           | .0441        | .0402           |
| Boy Teachers (n=36)                                       | .0287           | .0360        | .1486           |

\*p<.10,    \*\*p<.05, two-tailed

Affective and cognitive reactions and helping behavior.

Evidence concerning the relationship between feelings, thoughts and helping behavior can be obtained by looking at the correlations between each of the three factor scores and the behavioral indices. These correlations are displayed in Table 14 (Helpfulness), Table 15 (Positive-mood), and Table 16 (Self-esteem). In addition to correlations with all of the children who participated in the study, the tables list separate correlations for teachers and controls as well as correlations by sex.

A comparison of these tables shows that the strongest (and most interpretable) associations were between the helpfulness factor scores and the immediate posttest. Few of the other correlations were significant, and most of those that were marginal were in the negative direction.

Helpfulness: Correlations with the entire sample and with all subgroups except control girls indicated that children who stated a greater willingness to help others also completed more pouches. The correlation coefficient between helpfulness and number of pouches was particularly high for boys in the control group (a correlation of .8361).

Positive-mood: The correlations presented in Table 15 suggest that while children who reported feeling better following the experimental sessions were more helpful at that time, they were somewhat less likely to help on the



Table 14

Pearson correlation coefficients between behavior and  
factor score helpfulness

|                      | <u>Helpfulness</u> |              |                 |
|----------------------|--------------------|--------------|-----------------|
|                      | <u>#Pouches</u>    | <u>#Toys</u> | <u>Toy-rate</u> |
| All Children (n=86)  | .3825****          | .0272        | -.0077          |
| All Girls (n=43)     | .3283**            | -.1998       | -.2458          |
| All Boys (n=45)      | .4575****          | .2130        | .1873           |
| All Teachers (n=69)  | .3212***           | -.0051       | -.0514          |
| Girl Teachers (n=35) | .3828**            | -.1465       | -.2613          |
| Boy Teachers (n=34)  | .3022*             | .1185        | .0983           |
| All Controls (n=17)  | .5982**            | .2098        | .2205           |
| Control Girls (n=8)  | .1388              | -.0834       | .0471           |
| Control Boys (n=9)   | .8361****          | .5060        | .4772           |

\*  $p < .10$ ,    \*\*  $p < .05$ ,    \*\*\*  $p < .01$ ,    \*\*\*\*  $p < .005$

two-tailed

Table 15

Pearson correlation coefficients between behavior and  
factor score positive-mood

|                      | <u>Positive-mood</u> |                     |                      |
|----------------------|----------------------|---------------------|----------------------|
|                      | <u>#Pouches</u>      | <u>#Toys</u>        | <u>Toy-rate</u>      |
| All Children (n=86)  | .2044 <sup>*</sup>   | -.1837 <sup>*</sup> | -.1558               |
| All Girls (n=43)     | .2630 <sup>*</sup>   | -.2028              | -.2337               |
| All Boys (n=43)      | .1100                | -.1472              | .0431                |
| All Teachers (n=69)  | .2541 <sup>**</sup>  | -.2161 <sup>*</sup> | -.1997 <sup>*</sup>  |
| Girl Teachers (n=35) | .2561                | -.3084 <sup>*</sup> | -.3383 <sup>**</sup> |
| Boy Teachers (n=34)  | .2570                | -.1180              | .1215                |
| All Controls (n=17)  | .0169                | -.0481              | .0311                |
| Control Girls (n=8)  | .3375                | .1761               | .1819                |
| Control Boys (n=9)   | -.3513               | -.4854              | -.3072               |

<sup>\*</sup>p<.10,      <sup>\*\*</sup>p<.05, two-tailed

Table 16

Pearson correlation coefficients between behavior and  
factor score self-esteem

|                      | <u>Self-esteem</u> |              |                 |
|----------------------|--------------------|--------------|-----------------|
|                      | <u>#Pouches</u>    | <u>#Toys</u> | <u>Toy-rate</u> |
| All Children (n=86)  | -.0515             | .0272        | .0609           |
| All Girls (n=43)     | .1899              | -.2174       | -.1579          |
| All Boys (n=43)      | -.2505*            | .2137        | .2327           |
|                      |                    |              |                 |
| All Teachers (n=69)  | -.0557             | .0225        | .0687           |
| Girl Teachers (n=35) | .1535              | -.1575       | -.0925          |
| Boy Teachers (n=34)  | -.2493             | .1703        | .2084           |
|                      |                    |              |                 |
| All Controls (n=17)  | -.0781             | .0875        | .0700           |
| Control Girls (n=8)  | .3650              | -.4267       | -.4499          |
| Control Boys (n=9)   | -.3288             | .3533        | .3297           |

\* p<.10, two-tailed

delayed task. Separate correlations by sex show that this trend was representative of girls rather than boys.

A test of the difference between the correlation with the number of pouches and with the toy-rating scores for girls revealed a significant shift:  $t=2.29$ ,  $df=41$ ,  $p<.05$ , two-tailed. A test limited to those girls in the teaching groups also demonstrated this shift:  $t=2.62$ ,  $df=33$ ,  $p<.02$ , two-tailed.

Self-esteem: The correlations with the self-esteem factor scores are weaker. Generally, there was a tendency for boys who scored higher on self-esteem to make fewer pouches but to be somewhat (though not significantly) more helpful later on.

Experimenter's ratings of teachers. Analyses were performed to assess the effects of differences in the quality of the actual teaching performance, and the manner in which it may have interacted with treatments on thoughts, feelings, and subsequent helping behavior. Teachers were divided into high or low groupings at the median of the experimenter's ratings, on a five-point scale, of overall teaching performance. This rating was a rather general, impressionistic assessment of the teaching (see Appendix B).

This division of teachers on the basis of the experimenter's ratings resulted in a  $2 \times 2 \times 2 \times 2$  design (benefits-no benefits; effectiveness-no effectiveness; high teacher

rating-low teacher rating; sex).

Before presenting the findings, it is advised that because an effort to establish inter-rater reliability was not successful, all analyses involving observational ratings must be regarded with caution. One possible reason for this failure might be due to the second raters efforts to remain unobtrusive. As explained in the methods section, during the teaching sessions, the second rater sat at a nearby table pretending to read a book. This distance may have limited her ability to observe the teaching and hear what the children were saying.

Thoughts and feelings: Analyses performed on the factor scores detected no effects on either helpfulness or positive-mood. However, the main effect on self-esteem favoring the no effectiveness group, reported for the 2x2x2 analysis, was repeated ( $F=4.334$ ,  $df=1/53$ ,  $p<.042$ ): a mean of .2845 for the no effectiveness group versus -.1693 for the effectiveness group.

Moreover, an interaction between the presence or absence of effectiveness feedback and high or low teacher ratings, set forth in Table 17, suggests that the difference in self-esteem scores between the no effectiveness group and the effectiveness group was attributable to children rated as poorer teachers. Of the teachers rated below the

median, those who were not complimented for their skills expressed stronger feelings of self-esteem ( $t=3.01$ ,  $df=39$ ,  $p<.01$ , two-tailed). On the other hand, presence or absence of effectiveness statements did not affect the self-esteem scores of high rated teachers ( $t<1$ ).

Table 17

Mean self-esteem scores by effectiveness and teacher rating

|                          | <u>Ratings of Teacher Performance</u> |            |
|--------------------------|---------------------------------------|------------|
|                          | <u>High</u>                           | <u>Low</u> |
| <u>Effectiveness:</u>    | .1143                                 | -.3536     |
| <u>No Effectiveness:</u> | -.0196                                | .5018      |

In addition, correlational data indicated a positive relationship between the teaching performance of boys and their feelings of self-esteem. For boys, self-esteem scores were significantly correlated with the overall ratings ( $r=.3477$ ,  $df=32$ ,  $p<.044$ , two-tailed), as well as ratings of how responsive teachers were to the younger children ( $r=.3811$ ,  $df=32$ ,  $p<.026$ , two-tailed). Also, self-esteem scores were marginally correlated with ratings of how relaxed the teachers appeared to be during the teaching ( $r=.3078$ ,  $df=32$ ,  $p<.076$ , two-tailed).

However, there were no relationships between the experimenter's ratings of teacher performance and the factor scores of helpfulness and positive-mood.



Helping behavior: Analyses of variance were also performed on the behavioral posttests with teachers divided into high or low groupings at the median of the experimenter's ratings of overall teaching ability. These analyses yielded no effects on either the immediate or the delayed measures.

Despite this, correlational data does advance, however tentatively, some relationship between teaching performance and helping behavior. As shown in Table 18, the experimenter's overall rating was marginally correlated with girls' toy-rating scores. Furthermore, for boys, the pattern of correlations between the delayed measures and other, more specific experimenter ratings (use of praise, responsiveness to younger children, and relaxed rather than tense demeanor) suggest some positive relationship between teaching performance and later prosocial behavior.

Experimenter's ratings and teachers' ratings of teachers.

Of related interest are the correlations between the experimenter's ratings and the children's own reports about their teaching experience (see Table 19). Although children's estimates of how good a job they did were not correlated with experimenter ratings, children who liked teaching the game more were judged as being better teachers on three of the four ratings. In addition, the teachers' appraisals of the younger children's abilities were positively correla-

Table 18

Pearson correlation coefficients between experimenter's ratings of teacher performance and behavior

|                             | <u>#Pouches</u> | <u>#Toys</u> | <u>Toy-rate</u> |
|-----------------------------|-----------------|--------------|-----------------|
| <u>All Teachers (n=72)</u>  |                 |              |                 |
| Overall Rating              | .1582           | .1909        | .2312**         |
| Use of Praise               | .1748           | .1503        | .1817           |
| Responsiveness to Learner   | .1541           | .1225        | .1564           |
| Relaxed                     | .1726           | .0666        | .0521           |
| <u>Girl Teachers (n=36)</u> |                 |              |                 |
| Overall Rating              | .1743           | .2573        | .2996*          |
| Use of Praise               | .1699           | .0898        | .1448           |
| Responsiveness to Learner   | .2110           | .0094        | .1245           |
| Relaxed                     | .1852           | -.1376       | .0752           |
| <u>Boy Teachers (n=36)</u>  |                 |              |                 |
| Overall Rating              | .1357           | .1263        | .1807           |
| Use of Praise               | .1773           | .2076        | .2763*          |
| Responsiveness to Learner   | .0892           | .2238        | .2432           |
| Relaxed                     | .1462           | .3405**      | .2989*          |

\*  $p < .10$ , \*\*  $p < .05$ , two-tailed

Table 19

Pearson correlation coefficients between experimenter's ratings and teachers' ratings

| <u>Experimenter Ratings</u> | <u>Teacher Ratings</u>                                    |   |
|-----------------------------|---|---|
|                             | <u>Do you think you did a good job teaching the game?</u> | <u>How much did the child you taught like the game?</u> |
| <u>All Teachers (n=70)</u>  |   |   |
| Overall Ratings             | -.0599  | .1686   |
| Use of Praise               | -.0516  | .0733   |
| Responsiveness              |   |   |
| to Learner                  | -.0593  | .1675   |
| Relaxed                     | .0500   | .1754   |
| <u>Girl Teachers (n=34)</u> |   |   |
| Overall Ratings             | -.2158  | .0804   |
| Use of Praise               | -.1729  | .0471   |
| Responsiveness              |   |   |
| to Learner                  | -.2852  | .1492   |
| Relaxed                     | -.0292  | .1572   |
| <u>Boy Teachers (n=36)</u>  |   |   |
| Overall Ratings             | .0803   | .2308   |
| Use of Praise               | .0480   | .0777   |
| Responsiveness              |   |   |
| to Learner                  | .1207   | .1660   |
| Relaxed                     | .1483   | .1937   |

Table 19 continued

Teacher RatingsHow much did you  
like teaching the  
game?How good a learner  
was the child  
you taught?Experimenter RatingsAll Teachers (n=70)

|                 |                    |                     |
|-----------------|--------------------|---------------------|
| Overall Ratings | .2482 <sup>*</sup> | .3856 <sup>**</sup> |
| Use of Praise   | .2733 <sup>*</sup> | .2641 <sup>*</sup>  |
| Responsiveness  |                    |                     |
| to Learner      | .2567 <sup>*</sup> | .3671 <sup>**</sup> |
| Relaxed         | .0799              | .2531 <sup>*</sup>  |

Girl Teachers (n=34)

|                 |        |                    |
|-----------------|--------|--------------------|
| Overall Ratings | .0803  | .2417              |
| Use of Praise   | .0799  | .2011              |
| Responsiveness  |        |                    |
| to Learner      | .1579  | .4194 <sup>*</sup> |
| Relaxed         | -.0826 | .1407              |

Boy Teachers (n=36)

|                 |                     |                     |
|-----------------|---------------------|---------------------|
| Overall Ratings | .3973 <sup>*</sup>  | .4941 <sup>**</sup> |
| Use of Praise   | .4365 <sup>**</sup> | .3215 <sup>*</sup>  |
| Responsiveness  |                     |                     |
| to Learner      | .3390 <sup>*</sup>  | .3754 <sup>*</sup>  |
| Relaxed         | .2749               | .3909 <sup>*</sup>  |

<sup>\*</sup> p<.05,      <sup>\*\*</sup> p<.01, two-tailed

ted with all four experimenter ratings. Finally, separate correlations by sex indicate that this pattern was representative of boys rather than girls.

Experimenter's ratings of learner. During the teaching sessions, the experimenter also rated the younger children on a five-point scale representing a general impression of how well they did. In order to determine how the older children's thoughts, feelings, and helping behavior might have been affected by the younger children's performance, teachers were assigned to either high or low groupings at the median of the experimenter's rating of the learner. This permitted analyses of variance with a  $2 \times 2 \times 2 \times 2$  design (benefits-no benefits; effectiveness-no effectiveness; high learner rating-low learner rating; sex). Again, the failure to establish inter-rater reliability makes it necessary to consider the results of these analyses as tentative.

Thoughts and feelings: These analyses showed no effects on feelings of helpfulness. There was, however, a three-way interaction between sex, effectiveness, and younger children's performance on positive-mood scores ( $F=5.960$ ,  $df=1/53$ ,  $p<.018$ ). The cell means of the interaction are displayed in Table 20.

Table 20

Mean positive-mood scores by sex, effectiveness, and learner rating

| <u>Ratings of Learner Performance</u>  |             |            |
|--|-------------|------------|
|  | <u>High</u> | <u>Low</u> |
| <u>Boy:</u> <u>Effectiveness:</u>      | -.0596      | .4601      |
| <u>No Effectiveness:</u>               | .4334       | -.0537     |
| <br><u>Girl:</u> <u>Effectiveness:</u> | <br>.0680   | <br>-.2482 |
| <u>No Effectiveness:</u>               | -.3568      | .3121      |

Related to this finding, the previously reported marginally significant main effect for sex indicating a more positive-mood for boys was replicated ( $F=3.477$ ,  $df=1/53$ ,  $p<.068$ ): a mean of .2540 versus -.1261. A posteriori investigation of the interaction suggested that this result favoring boys was due to sex differences between teachers in the no effectiveness group who taught high rated children ( $t=2.26$ ,  $df=21$ ,  $p<.05$ , two-tailed) as well as (marginally) teachers in the effectiveness group who taught low rated children ( $t=1.89$ ,  $df=18$ ,  $p<.10$ , two-tailed).

Again, the main effect indicating that the no effectiveness group felt enhanced self-esteem was demonstrated in this analysis ( $F=4.428$ ,  $df=1/53$ ,  $p<.04$ ). An interaction, shown in Table 21, between effectiveness and younger children's performance ( $F=6.341$ ,  $df=1/53$ ,  $p<.015$ ) suggested that



this finding was due to differences between teachers who taught low rated children ( $t=3.19$ ,  $df=31$ ,  $p<.01$ , two-tailed). Presence or absence of effectiveness feedback did not influence the self-esteem scores of teachers of high rated children ( $t<1$ ).

Table 21

Mean self-esteem scores by effectiveness and learner rating

|                          | <u>Ratings of Learner Performance</u> |            |
|--------------------------|---------------------------------------|------------|
|                          | <u>High</u>                           | <u>Low</u> |
| <u>Effectiveness:</u>    | .1541                                 | -.3795     |
| <u>No Effectiveness:</u> | .0944                                 | .6209      |

In addition, correlations were computed between the experimenter's ratings of the younger children and the three groups of factor scores. Besides the overall rating, the experimenter also rated how responsive younger children were to the teachers and how relaxed they appeared.

Correlations with the data obtained from girls were not significant. However, boys who taught better overall learners felt increased self-esteem ( $r=.3726$ ,  $df=32$ ,  $p<.03$ , two-tailed). Boys' self-esteem scores were also marginally associated with the ratings of how relaxed the younger children were ( $r=.3215$ ,  $df=32$ ,  $p<.064$ , two-tailed). Also, boys who taught more responsive learners tended to express greater willingness to help others ( $r=.3003$ ,  $df=32$ ,

$p < .084$ , two-tailed).

Helping behavior: Analyses of variance ( $2 \times 2 \times 2 \times 2$  design) on the measures of helping behavior revealed a significant interaction between benefits and younger children's performance on the number of pouches ( $F = 4.531$ ,  $df = 1/56$ ,  $p < .038$ ). The interaction is presented in Table 22.

Table 22

| Mean number of pouches by benefits and learner ratings |                                       |            |
|--|---------------------------------------|------------|
|  | <u>Ratings of Learner Performance</u> |            |
|  | <u>High</u>                           | <u>Low</u> |
| <u>Benefits:</u>                                       | 5.80                                  | 6.75       |
| <u>No Benefits:</u>                                    | 7.65                                  | 5.05       |

Post hoc comparisons of pairs of means revealed that for children in the no benefits group, those who taught better learners made more pouches ( $t = 2.06$ ,  $df = 34$ ,  $p < .05$ , two-tailed). However, the younger children's performance did not influence the helping of children in the benefits group.

There was also a three-way interaction between sex, benefits, and younger children's performance on the toy-rating scores ( $F = 6.683$ ,  $df = 1/56$ ,  $p < .012$ ). This interaction is shown in Table 23.

Table 23

Mean toy-rating scores by sex, benefits and learner ratings

|              |                     | <u>Ratings of Learner Performance</u> |            |
|--------------|---------------------|---------------------------------------|------------|
|              |                     | <u>High</u>                           | <u>Low</u> |
| <u>Boy:</u>  | <u>Benefits:</u>    | 2.80                                  | 3.00       |
|              | <u>No Benefits:</u> | 4.14                                  | 1.73       |
| <u>Girl:</u> | <u>Benefits:</u>    | 5.40                                  | 3.00       |
|              | <u>No Benefits:</u> | 2.60                                  | 4.62       |

Interpretation of this interaction is very difficult. There were no main effects or two-way interactions associated with this finding. Furthermore, pair-wise comparisons of cell means failed to detect any significant differences. There was, however, a tendency for girls in the benefits group who taught highly rated children to be more helpful on this delayed measure than girls in the no benefits group who also taught highly rated children ( $t=1.91$ ,  $df=18$ ,  $p<.01$ , two-tailed).

None of the correlations between the experimenter's ratings of the younger children's performance and the measures of helping were significant.

Experimenter's and teachers' ratings of learners. Table 24 lists the correlations between the experimenter's ratings and the teachers' ratings of the younger children. As

Table 24

Pearson correlation coefficients between experimenter's ratings and teachers' ratings of younger children's performance

|  | <u>Teachers' Ratings</u>                                |   |
|--|---|---|
|  | <u>How much did the child you taught like the game?</u> | <u>How good a learner was the child you taught?</u> |
| <u>Experimenter Ratings</u>                    |   |   |
| <u>All Teachers (n=70)</u>                     |   |   |
| Overall Ratings                                | .2997 <sup>***</sup>                                    | .3885 <sup>***</sup>                                |
| Responsiveness to Teacher                      | .2476 <sup>**</sup>                                     | .2688 <sup>**</sup>                                 |
| Relaxed  | .2671 <sup>**</sup>                                     | .2631 <sup>**</sup>                                 |
| <u>Girl Teachers (n=34)</u>                    |   |   |
| Overall Ratings                                | -.0965  | .1450   |
| Responsiveness to Teacher                      | .1378   | .1878   |
| Relaxed  | .1004   | .1788   |
| <u>Boy Teachers (n=36)</u>                     |   |   |
| Overall Ratings                                | .5004 <sup>***</sup>                                    | .4413 <sup>***</sup>                                |
| Responsiveness to Teacher                      | .3288 <sup>**</sup>                                     | .3176 <sup>*</sup>                                  |
| Relaxed  | .3820 <sup>**</sup>                                     | .2915 <sup>*</sup>                                  |
| * p<.10,    ** p<.05,    *** p<.01, two-tailed |   |   |

apparent in the table, there was a pattern of associations for boys though not girls. Boys' impressions of how well children learned the game were correlated with the experimenter's overall ratings as well as ratings of how responsive and relaxed the children were. Younger children who, according to their teachers, liked the game more also obtained higher scores on all three experimenter ratings.

## C H A P T E R      I V

### DISCUSSION

#### The effects of teaching.

Thoughts and feelings: The results indicated that the experience of teaching younger children did have some effect on children's positive feelings and dispositions relative to children in the control group. Teachers in the benefits only group, the neither treatments group, and to an extent (marginally) the group receiving both treatments expressed a greater inclination to help others than did controls. Also, the analysis contrasting the controls with the teaching group receiving neither benefits descriptions no effectiveness feedback revealed that the teachers reported enhanced feelings of self-esteem.

Helping behavior: However, there were no differences in actual helping behavior between teachers and controls. Contrary to expectations, children given the opportunity to teach were no more helpful, on either immediate or delayed measures, than control children who just learned the game.

Despite this, I think that it would be unwarranted to conclude, based on the results of this study, that



teaching does not promote subsequent prosocial behavior. An examination of some of the particulars of the present study might be of value in elucidating why this positive relationship, demonstrated by other research (see Staub, 1978), was not found here.

First of all, for the teaching to be regarded by the teachers as a helping activity, it seems necessary that they derive a sense of having contributed to the welfare of another person. However, the teaching experience in this study might have been relatively weak. It was of rather short duration, occurring only once and for a maximum of fifteen minutes. This might not have been a sufficient amount of time to enable teachers to feel that they had engaged in a very meaningful prosocial activity.

Moreover, teachers might not have regarded the game, entailing the matching of colored buttons to written symbols, as being of genuine value to the younger children. It was not the kind of game that one can anticipate much future enjoyment from playing. After learning the rules for matching, there might be little reason for continued interest in this game. Also, the game might not have appeared likely to develop other skills useful to the children (e.g., school-related). Furthermore, if as suggested, the teaching experience was lacking in depth or intensity, it might not have markedly fostered teachers' feelings of competence

(feelings hypothesized to enhance helping behavior).

There is another possible reason, relevant to the above-mentioned arguments, why teachers were no more helpful than controls. Comments made during the course of the study by both the children and their classroom teachers indicated that peer tutoring as well as other interactive teaching and learning exercises often take place in Amherst public schools (where the research was conducted). Children who have had prior experience teaching other children might not have found this rather brief session to have much impact.

It is also possible that completing the questionnaires may have had a direct effect on children's behavior on the posttests, thereby interfering with or reducing the effects of the experimental treatments. Doing the ratings required children to focus attention on their own thoughts and feelings. This introspection may have influenced their thoughts, mood, and behavior.

The strong relationship between reports of helpful feelings and actual helping on the immediate posttest might, to some extent, be attributable to children feeling a need to demonstrate consistency between their words and their deeds. Children who indicated that they wanted to help others may have felt a commitment to do so when the

opportunity presented itself. Some of the questionnaire items may have also affected the inferences that children made about the purpose of the project (e.g., "They're asking me how much I want to help people--maybe that's what they're really interested in"). These kinds of inferences could affect behavior.

A goal for future research might be to investigate whether or not rating instruments, such as the one used in this study, actually do influence performance on behavioral posttests. Studies could include groups of subjects who either do not receive questionnaires or receive them after behavioral posttests.

#### Benefits descriptions and effectiveness feedback.

Thoughts and feelings: The experimental treatments provided to the teaching groups did not affect their feelings of either helpfulness or positive-mood. Surprisingly, children in the no effectiveness group reported feeling more self-esteem than children in the effectiveness group. Furthermore, this difference between the no effectiveness group and the effectiveness group was particularly striking for those children who were rated by the experimenter as doing a poorer job or who taught children rated by the experimenter as poorer learners.

That this difference was not attributable to the effectiveness treatment having a negative influence on

feelings of self-esteem is apparent from the finding that the mean self-esteem scores of both the no effectiveness group and the effectiveness group were numerically higher than the mean score of the control group. Possibly a more tenable explanation might be that those teachers who did not receive reassurances of competence from the experimenter, and who perhaps could not draw upon their teaching experience for support, felt a greater need to represent themselves in a positive manner.

Helping behavior: For the most part, the experimental treatments did not increase the helping behavior of children in the teaching groups. Children told that they were interesting and effective teachers proved to be no more helpful than children who were not praised for their teaching. Furthermore, telling girls that their teaching would be of benefit to learners had not effect on later pro-social behavior.

Boys, however, who heard the benefits descriptions were more helpful on the immediate posttest than boys in the no benefits group. This finding at first appears to be inconsistent with the results of a number of studies indicating that not only are verbal communications intended to promote helping more effective with girls, but they sometimes actually decrease helping by boys (Bernstein, 1975; Feinberg and Staub, 1975a; Staub, 1978).

For example, in an unpublished master's thesis, Bernstein found that while verbalizations emphasizing the distress experienced by hospitalized children tended to increase (though not significantly) the number of puzzles that seventh-grade girls made for these children, the statements decreased the number made by seventh-grade boys.

In a study with fourth, fifth, and sixth-grade children employing verbalizations of a somewhat different nature, Feinberg and Staub (1975) found that statements elaborating the benefits of helping decreased the number of gift certificates that boys shared with other children.

In order to account for the negative effects of verbal communications on the prosocial behavior of boys, Staub (1975a) has proposed that these statements might, because they are perceived as being somewhat coercive, elicit oppositional tendencies or psychological reactance (Brehm, 1966) antithetical to helping.

However, the benefits descriptions included in the present study were relatively mild. These statements only suggested that younger children might enjoy playing the game and that learning it might be of some use to them in their school work. There was no implication, however tacit, that failure to help would either cause or fail to relieve suffering.



With respect to this point, the previously cited study by Feinberg and Staub included a condition in which children were asked to make toys to help an art teacher find out what kinds of toys children were interested in. Although quite different in specific content, this treatment shared the rather low-pressure, non-exhortative orientation of the benefits descriptions. Consistent with the present findings, boys asked to help the art teacher were later more helpful on both a donating of gift certificates and a toy-making posttest.

Apparently, for verbal communications to increase the prosocial behavior of boys, they must, at least under certain circumstances (e.g., in situations where there is little likelihood of either enforcement of compliance or punishment for non-compliance), not be so forcefully stated that they sound like moral imperatives. When the degree of the recipients' stated need is great, which also exerts pressure to help, boys tend to respond less helpfully.

Why, with the exception of the behavior of boys in the benefits group on the immediate posttest, did the verbal communications presented to teaching subjects fail to have the intended effects? In the first place, if the teaching, itself, was not a particularly striking event, it follows that concomitant statements referring to that



experience might not be very influential.

Furthermore, in order for the experimental treatments to have promoted helping behavior by heightening positive feelings possibly generated by the teaching, it was necessary that they be accepted or internalized by the children. In other words, teachers given the effectiveness feedback should have, if their behavior was to be affected by these verbalizations, believed that they did a better job than teachers in the no effectiveness group. Similarly, children who had possible benefits of teaching pointed out to them should have believed that learning the game was of greater value to the younger children than the teachers in the no benefits condition.

One kind of evidence for the internalization of the information communicated in the verbal treatments, available in this study, was the teachers' own reports about the teaching sessions. According to these assessments, children in the effectiveness group did not feel that they were better teachers than the children in the no effectiveness group. Also, none of the other three ratings they made of the teaching was different from those made by the no effectiveness group.

It is of considerable interest to note, however, that there was some indication that the benefits descriptions were accepted by boys. This was, of course, the only group whose

helping (on the pouches task) was enhanced by the treatments. Marginally significant interactions between sex and benefits on both of the questionnaire items pertaining to the learner ("How much did the child you taught like the game?" and "How good a learner was the child you taught?") suggested that the benefits descriptions did elevate the positive feelings of boys towards the younger children. Moreover, a third marginally significant interaction between sex and benefits indicated that boys in the benefits group rated their teaching more favorably than boys in the no benefits group did.

Children's ratings of the teaching sessions. Nevertheless, a more direct examination by means of correlations failed to establish a strong relationship between teachers' ratings of the sessions and their later prosocial behavior. In fact, even though boys' expressions of helpful feelings were correlated with their reports of how much they liked teaching, their judgements of the learners' performance, and (marginally) with their estimates of how enjoyable the game was to the learners, none of the correlations between boys' ratings and their actual helping behavior were significant. Again, if the teaching experience was not a powerful one, a high association between feelings regarding the teaching and behavior would not be expected. Although some children

might have felt more positive about their participation than others, the intensity of these feelings were not great enough to have a differential effect on behavior.

Girls' self-reports about the teaching were somewhat related to helping in a rather complicated manner. There was a tendency (marginal) for girls who indicated that they did a better job of teaching to also complete more pouches. However, they were less helpful on the toy-making task.

An admittedly highly speculative explanation can be offered to account for why girls' responses to this questionnaire item were associated with more helping first and less helping later. The estimations of how good a job one did were self-oriented in nature, emphasizing feelings of personal effectiveness. The finding that girls' ratings of their teaching performance were highly correlated with their expressed feelings of self-esteem support this contention. This rating was also correlated with girls' reports of positive-mood and (marginally) with feelings of helpfulness.

Perhaps the higher scores on the performance rating reflected boosted feelings capable of having some immediate influence on helping but too short-lived to have a delayed positive impact. The negative correlation between girls' teacher ratings and performance on the toy-making posttest

is problematic. Possibly, girls who thought that they were less competent teachers may have experienced a relatively greater need to demonstrate their self-worth on the delayed helping task. Another possibility is that girls who responded more strongly in a self-oriented fashion on the teacher ratings, while temporarily affected by positive-mood, were more self-oriented and hence less prosocial when the mood wore off.

Interestingly, girls who reported that the learners liked the game more were, to a marginal extent, more helpful on the delayed test. These judgements were more other-oriented, focusing on the beneficial effects of one's own behavior (as the teacher of the game) for others. Perhaps these kinds of cognitions served as mediators which did have some delayed impact on behavior.

This interpretation is consistent with the results reported by Staub and Fotta (see Staub, 1978). In that study, fifth and sixth-grade girls who made puzzles for hospitalized children and had the benefits of their helping pointed out to them (possibly inspiring other-oriented feelings) were later more helpful on a delayed measure though not an immediate one.

Positive thoughts, feelings and helping behavior. An interesting result to emerge from this study was the positive relationship between expressions of willingness to help

others and actual helping behavior on the immediate post-test. Although this demonstrates that helping behavior can be predicted from a paper and pencil measure, the potentially more useful association would be between feelings of helpfulness and delayed participation in prosocial activities.

However, other research has also indicated that such measures might be of little value for predicting behavior at a later time. Studies by both Bernstein (1975) and Staub and Jancaterino (see Staub, 1978) employing a somewhat different measure of helpful feelings, estimates of how many puzzles children intended to make for hospitalized children, also failed to establish an association between expressions of helpfulness and delayed helping. Stated feelings of helpfulness may reflect a temporary mood or disposition. Apparently, such declarations of intention have predictive validity only when the opportunity to follow through on them is proximate.

The results indicated that some relationship was present between feelings of positive-mood and helping on the immediate posttest. Nevertheless, correlations indicated that girl teachers who reported a more positive-mood were somewhat less helpful on the delayed task. Although, as previously maintained, positive affect generated by a particular situation would not be expected to promote helping



at a later time (unless elements of the new situation and/or cognitive reminders elicited positive feelings), the negative correlation is not readily interpretable.

Finally, the pattern of correlations between boys' self-esteem scores and helping behavior suggested that while high self-esteem boys may have had less need to be helpful during the experimental sessions (perhaps less need to make a favorable impression), they were somewhat (though not significantly) more helpful later on.

Experimenter's ratings and teachers' ratings. It is difficult to determine why the only significant correlations between the experimenter's ratings and the teachers' ratings of the sessions were with boys. Furthermore, as previously cited, the fact that inter-rater reliability was not established means that the experimenter's ratings must be regarded as suspect.

These problems notwithstanding, positive correlations between the experimenter's ratings and boys' ratings, particularly those referring to the learners' performance, suggest that the experimenter's ratings did have some validity. Also, these correlations indicate that the boy teachers' impressions of the younger children were influenced by the learners' performance. Moreover, the better teachers, according to the experimenter's ratings, made more favorable



judgements of the younger children's abilities. This underscores the importance of considering the learners' behaviors in evaluating the effects of teaching on teachers. However, there was no association between either the experimenter's or the teachers' ratings of the learners' performance and teachers' scores on the helping posttests.

Furthermore, correlations revealed that children rated as being better teachers reported that they liked the teaching more. Moreover, the results do suggest, albeit tentatively, a positive relationship between teaching performance and helping behavior on the delayed posttest. Perhaps the superior teachers found the teaching experience to be more enjoyable and were later more disposed to engage in other helping activities.

A sex difference found in the study deserves comment. Although there were no differences in the number of toys that children made, girls' toy-rating scores were significantly higher. Even though girls did not make more toys than boys, the toys they made were more decorated and more attractive. Evidently, girls devoted greater efforts to this task.

Does this behavioral difference reflect a generally more altruistic orientation (i.e., motivation to help others) on the part of girls? Although this is plausible,

a more tenable explanation might be that girls found the toy-making task, which entailed cutting, pasting, and (for puppets) sewing felt material, to be more engaging. Possible differences in children's intrinsic interest in various prosocial activities is, itself, an important issue.

The results of this study help to elucidate the manner in which verbal communications affect the prosocial behavior of boys. When considered with the findings of other research, the present study suggests that statements intended to increase helping can have a positive effect on boys provided that the verbalizations are relatively mild (i.e., not so strongly worded that they elicit oppositional tendencies) and are combined with actual participation in prosocial activities. Moreover, it may be necessary that the prosocial activity be one which allows boys to "test their competence" such as by teaching or, in the Staub and Feinberg study (see Staub, 1978), assisting an art teacher. Determining the specific attributes of communications that are congenial to helping, as well as those that are detrimental, is a worthwhile objective for future research.

Nevertheless, the failure to demonstrate, and to clarify, the effects of teaching on teachers' subsequent prosocial behavior, the major focus of the study, does point to an important methodological implication for future research: The teaching experience should be a meaningful

one, permitting rich participation and contributing to genuine needs of the learner if it is to have a strong impact on teachers' positive feelings and behaviors.

If I were to further investigate the issues addressed in this study in another psychological experiment, I would make a number of changes in the methodology. Older children would be given the opportunity to teach basic academic skills, perhaps math or reading, to younger children in a multi-session program. I believe that a more meaningful teaching content would also give greater validity to benefits descriptions. Moreover, the experimenter could describe successful cross-age tutoring programs in other schools.

An improvement in the effectiveness variable would be to contrast very positive feedback with mildly positive feedback (rather than feedback versus no feedback). In these kinds of situations children probably expect some evaluation and they may be confused or upset when they don't receive it. Also, teaching sessions might be videotaped. This would permit the development of more sophisticated procedures for rating children's performance during the interaction. Finally, to determine if reporting their thoughts and feelings influences children's helping, the design should be enlarged to include variations in the order of presentation of questionnaires and behavioral posttests.

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## Appendix A

## The Game Board and Coding Chart

|  |   |   |   |   |   |
|--|---|---|---|---|---|
|  X  |  X |      |  X |  X   |      |
|  X |   |  X  |   |     |     |
|   |  |  X |  |  X |  X |

## Coding Chart

Color:  = Green       = Blue       = Brown

Size:  = Large       = Small

X = Red Dot

## Appendix B

Teaching session: observational rating categories  
and criteria for rating

Teacher performance

1. Overall impression of teaching
  - 5... very positive
  - 4... positive
  - 3... neutral
  - 2... negative
  - 1... very negative
2. Use of praise, encouragement, positive feedback
  - 3... three or more instances
  - 2... one or two instances
  - 1... no instances
3. Responsiveness to younger child--how well teacher relates to learner, responds to questions, gives directions
  - 3... responsive
  - 2... neutral
  - 1... unresponsive
4. Is teacher relaxed (comfortable) or tense (uncomfortable)?
  - 3... relaxed
  - 2... neutral
  - 1... tense

Learner performance

1. Overall impression of learning
  - 5... very positive
  - 4... positive
  - 3... neutral
  - 2... negative
  - 1... very negative

## Appendix B continued

2. Responsiveness to older child--how well learner relates to teacher, follows directions, responds to questions, indicates understanding
  - 3... responsive
  - 2... neutral
  - 1... unresponsive
3. Is learner relaxed (comfortable) or tense (uncomfortable)?
  - 3... relaxed
  - 2... neutral
  - 1... tense

Appendix C  
Questionnaire

Note: Questionnaires given to children in the control group did not include the four items referring to the teaching experience.



Please put a check ( ) mark on the line next to what you think.

How easy was it for you to learn the game?

- ☐ extremely easy
- ☐ very easy
- ☐ pretty easy
- ☐ fairly easy
- ☐ somewhat easy
- ☐ a little bit easy
- ☐ not at all easy

How much did you like the game?

- ☐ extremely much
- ☐ very much
- ☐ pretty much
- ☐ a fair amount
- ☐ somewhat
- ☐ a little bit
- ☐ not at all

How much did you like teaching the game?

- ☐ extremely much
- ☐ very much
- ☐ pretty much
- ☐ a fair amount
- ☐ somewhat
- ☐ a little bit
- ☐ not at all

How much did the child you taught like the game?

- ☐ extremely much
- ☐ very much
- ☐ pretty much
- ☐ a fair amount
- ☐ somewhat
- ☐ a little bit
- ☐ not at all

Do you think you did a good job teaching the game?

- ☐ extremely good
- ☐ very good
- ☐ pretty good
- ☐ fairly good
- ☐ somewhat good
- ☐ a little bit good
- ☐ not at all good

How good a learner was the child you taught?

- ☐ extremely good
- ☐ very good
- ☐ pretty good
- ☐ fairly good
- ☐ somewhat good
- ☐ a little bit good
- ☐ not at all good

How much would you enjoy teaching this game or some other things to other children?

\_\_\_\_\_ extremely much

\_\_\_\_\_ very much

\_\_\_\_\_ pretty much

\_\_\_\_\_ a fair amount

\_\_\_\_\_ somewhat

\_\_\_\_\_ a little bit

\_\_\_\_\_ not at all

People feel better or worse at different times.  
How good (pleasant) do you feel right now?

- ☐ extremely good
- ☐ very good
- ☐ pretty good
- ☐ fairly good
- ☐ somewhat good
- ☐ a little bit good
- ☐ not at all good

Do you feel better or worse than usual right now?

- ☐ much better
- ☐ a fair amount better
- ☐ a little better
- ☐ the same as usual
- ☐ a little worse
- ☐ a fair amount worse
- ☐ much worse

How You Feel Now

We are interested in how you feel about yourself right now.  
For each statement, please put a check ( ) mark to show how  
much each statement describes how you feel right now.

I'm pretty sure of myself.

- ☐ extremely much like me
- ☐ very much like me
- ☐ pretty much like me
- ☐ a fair amount like me
- ☐ somewhat like me
- ☐ a little bit like me
- ☐ not at all like me

I'm easy to like.

- ☐ extremely much like me
- ☐ very much like me
- ☐ pretty much like me
- ☐ a fair amount like me
- ☐ somewhat like me
- ☐ a little bit like me
- ☐ not at all like me

I can be depended on

- ☐ extremely much like me
- ☐ very much like me
- ☐ pretty much like me
- ☐ a fair amount like me
- ☐ somewhat like me
- ☐ a little bit like me
- ☐ not at all like me

How much do you feel right now that you would like to help other people?

\_\_\_\_\_ extremely much

\_\_\_\_\_ very much

\_\_\_\_\_ pretty much

\_\_\_\_\_ a fair amount

\_\_\_\_\_ somewhat

\_\_\_\_\_ a little bit

\_\_\_\_\_ not at all



## Appendix D

## Toymaking

Puppets

Puppets were approximately 6" by 8" and were made out of felt. They were decorated with shapes cut out of felt and pieces of yarn.

Each puppet envelope contained materials for three puppets and an instruction sheet. The materials are listed below:

1. Six pieces of felt, for the front and back, pre-cut in the shape of a puppet. In addition, holes were punched along the top and sides for sewing the puppets together.
2. Yarn for sewing the puppets together and for decorating them.
3. Pieces of felt in a variety of colors for decorating the puppets.
4. A plastic bottle filled with glue for attaching the decorations.

## Instructions for making puppets:

First you sew the front and the back pieces together.

You can use the extra pieces of felt and yarn to make eyes, ears, mouth, or whatever you need for what you want your puppet to be--a rabbit, a boy, a girl--or whatever you think of.

When you cut out the pieces you want to use, glue them on the puppet.

Then you are done.

Please: Return all unused material and the glue.

## Fishing games

Fishing games were approximately 3" by 6" and were made of felt glued to construction paper. A small magnet was attached at the mouth, and felt was used for decoration. Playing the game involved trying to "catch" the fish by "hooking" the magnet with a paper clip dangling from a piece of yarn.

Each fishing game envelope contained materials for three fishing games and an instruction sheet. The materials are listed below:

1. Three pieces of construction paper with the outline of a fish drawn on them.
2. Six pieces of felt for front and back pieces.
3. Pieces of felt in a variety of colors for decorating the fish.
4. Three small magnets, paper clips, and yarn.
5. A plastic bottle filled with glue for attaching the felt to the construction paper and for gluing the magnet and decorations to the fish.

### Instructions for making fishing games:

First you need to cut out the fish drawn on the construction paper.

Then you need to trace the construction paper fish onto two pieces of felt--first onto one piece and then onto another.

Next you cut out each felt fish.

Then you put glue on the construction paper, just one side. One piece of felt is stuck on it. Then you put glue on the other side and stick the second piece of felt on it.

Paste the magnet to the fish where the mouth will be.

You can use the extra pieces of felt to cut out and stick on eyes, fins, stripes, scales, mouth--whatever you want.

Tie the paper clip to the end of the string.

Then you're done. Using the string with the paper clip on the end, you can try to catch the fish.

Please: Return all unused material and the glue.

## Appendix E

## Toy Rating

Because children returned the toys they made (and unused materials) in a single manilla envelope, all toys made by the same child shared a code number. Therefore, to avoid possible biasing effects, new individual code numbers were assigned to all toys as a preliminary step to the rating.

The criteria used to evaluate the toys are listed in Table 25. A score of one point was given merely for completing a toy. Higher ratings required more elaborate decorations. Toys receiving the highest rating of four points were well made, elaborately decorated, and attractive. Since children could make up to three toys, the possible range of this measure was from zero to twelve.

The reliability of this rating system was established by randomly selecting twelve puppets and twelve fishing games. These toys were then independently rated by the experimenter and a second rater previously unassociated with the study. Reliability for the rating of the puppets was 100%. The raters agreed on eleven of the twelve fishing games: resulting in a reliability of 91.67%. The single disagreement, a difference of one point, was discussed in order to refine judgements based on the criteria. The re-

mainder of the toy-ratings were done by the experimenter.

Table 25  
Criteria for Toy-Rating

| <u># Points</u> | <u>Criteria</u>  |
|-----------------|--|
| 1               | <u>For Puppets:</u> Sewn with simple face<br><u>For Fishing Games:</u> Cut and pasted with eyes and mouth      |
| 2               | Minimally decorated--one felt addition   |
| 3               | More elaborately decorated--at least two felt additions  |
| 4               | Very elaborate decoration--more than two felt additions, good craftsmanship, attractive and imaginative design |

A "felt addition" refers to a section of felt cut into a form or design and pasted on the toy.





