Prosocial Television and Young Children: The Effects of Verbal Labeling and Role Playing on Learning and Behavior

Lynette K. Friedrich and Aletha H. Stein

Pennsylvania State University

Friedrich, Lynette K., and Stein, Aletha H. Prosocial Television and Young Children: The Effects of Verbal Labeling and Role Playing on Learning and Behavior. Child Development, 1975, 46, 27–38. The effects of prosocial television alone and in combination with training—verbal labeling and role playing—on learning and helping behavior were assessed. 73 kindergarten children were assigned to 1 of 5 conditions for the 4 viewing and training sessions: (a) neutral television and irrelevant training, (b) prosocial television and irrelevant training, (c) prosocial television and verbal-labeling training, (d) prosocial television and role-playing training, or (e) prosocial television and both verbal-labeling and role-playing training. 3 measures of learning were employed: a content test to measure knowledge of specific content of programs and generalization of themes to other situations, a puppet measure to assess both spontaneous speech related to program content and helping behavior in a fantasy context, and a third measure designed as a behavioral index of helping another child. The results provide support for the prediction that children learn the prosocial content of television programs and generalize that learning to other situations. Support is also found for the prediction that training enhances verbal learning and affects actual helping behavior. The verbal labeling had the greatest impact on the verbal measure of learning, particularly for girls, and role-playing training was more effective, particularly for boys, in increasing nonverbal helping behavior. The 3 diverse measures of learning, both specific and generalized, were positively related to one another. This was true for verbal as well as behavioral indices of helping.

The study described here was designed to test the effects of an educational television program that deals with social and emotional development on the learning and behavior of young children. The second purpose was to test two types of training designed to help children rehearse and learn the content of the programs.

In recent years, a body of experimental studies showing imitation of prosocial behavior has accumulated. These studies demonstrate fairly clearly that children imitate altruism, helping, delay of gratification, and high standards of performance when they are exposed to models exhibiting these behaviors (Hoffman 1970; Staub 1971a). While these studies are an important first step in demonstrating the potential of modeling for conveying prosocial behavior to children, many questions arise when one attempts to generalize their findings.

We are very grateful to the kindergarten teachers and children at Lemont School in State College, Pennsylvania, for their cooperation in the execution of the study. In particular, Mrs. Clemence Flenner, Mrs. Vonda Gertz, Mrs. Gwenn Bunnell, and Mrs. Pat Smith were very generous in their help in all phases of the study. The following people contributed to various portions of the data planning, collection, and analysis: Ann Clewett, Mary S. Thompson, Sandra Sborovsky, David Tyson, Robert Marcus, Carol Quarton, Martha Serig, Mary E. Thompson, Ann Godlesky, and Mary Maxwell; illustrations for the book and content test were made by Aalo Cutler. Francine Deutsch organized and supervised the data analysis, and Mary Long contributed in a variety of ways to the organization and execution of the study. We would like to thank the entire staff associated with “Misterogers’ Neighborhood,” particularly Elaine Lynch, for generous assistance in obtaining materials needed for the research. This research was supported by grant OCD-CB-340 from the Office of Child Development to the authors. Requests for reprints should be sent to Lynette K. Friedrich, Pennsylvania State University, College of Human Development, Human Development Building, University Park, Pennsylvania 16802.

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to the effects of television. Experimentally constructed modeling sequences are much less complex than television programs; the behavior measured is usually identical with that observed; and behavior is usually measured immediately following exposure to models in a highly controlled situation. If television has effects of real interest, it must be demonstrated that children can learn from the more complex material presented and that they generalize that learning across situations and over time.

In an earlier study (Friedrich & Stein 1973; Stein & Friedrich 1972), the present investigators studied the effects of “Misterogers’ Neighborhood” on the naturalistic behavior of preschool children in a nursery school setting. We compared children who were shown “Misterogers’ Neighborhood” with those shown “neutral” children’s films and with those shown aggressive cartoons. Observations were conducted during a baseline period before the television programs were shown, during a 4-week period in which programs were shown three times a week, and for 2 weeks following the programs. Children who saw “Misterogers’ Neighborhood” showed higher levels of self-controlling and achievement behavior (task persistence) than those in the other two groups. For children from lower-social-status families, exposure to “Misterogers’ Neighborhood” was also associated with increased prosocial interpersonal behavior (cooperation, nurturance, and verbalization of feeling) in comparison with the other treatment groups. Higher-social-status children did not show positive effects on interpersonal behavior. To some extent these effects continued during the 2 weeks after viewing ended.

The present study was designed to assess both acquisition and performance (Bandura 1969) of prosocial television content. It was also designed to determine whether the children could generalize the program content to situations in their own lives. Four programs were chosen which formed a story sequence focused on understanding the feelings of others, expressing sympathy, and helping. Helping was chosen as the behavioral area in which performance was assessed.

The second purpose of the study was to explore methods of training that might enhance the effects of the television programs. Due to the complex nature of the program content, children may benefit from additional rehearsal or other learning techniques. The training methods were chosen with two major considerations in mind: (1) they had a foundation in imitation theory and had some empirical support, and (2) they appeared to have potential for translation into methods that could be used in group settings with children.

Verbal labeling was one type of training used. Verbal labeling and questioning of the child is likely to provide the child with a means of coding and representing material cognitively that will be considerably more efficient than the methods he generates on his own. Preschool children do not readily produce verbal labels to code their experience, though they often can use such labels if someone else provides them (Flavell, Beach, & Chinsky 1966). For example, 4-year-old children learned and recalled more of a model’s behavior when an adult labeled the behavior verbally than they did through observation alone (Coates & Hartup 1969). Bandura and his colleagues have also demonstrated that children and adults learn observed materials more efficiently when they have useful verbal labels for what they observe (Bandura 1969). As television stimuli are more complex and more numerous than modeling sequences used in the laboratory, such devices for understanding and storing material are probably quite important. Verbal labeling may also enable the child to generalize television content appropriately to new situations. For example, if several incidents in a program are labeled “helping,” the child may be better able to engage in helping in new situations.

Role playing was the second training method used. Staub (1971b) found that role playing (without modeling) was an effective method of increasing helping and sharing behavior, though the effects depended partially on the sex of the child. On the basis of social-learning theory, role playing would be expected to increase learning because it is a personally involving form of rehearsal of program content. Finally, to the extent that young children are egocentric, asking them to take the role of another may be a particularly effective way of increasing their understanding of others’ feelings and behavior.

Method

Overview

Seventy-three kindergarten children were shown a series of four television programs, each of which was followed by a training session. Four groups saw prosocial programs from
“Misterogers’ Neighborhood.” One of these groups received activity that was irrelevant to the program; one received verbal-labeling training in which the themes from the program were labeled in storybooks; one group received role-playing training in which the themes were rehearsed using hand puppets; one group received both verbal-labeling and role-playing training. The fifth condition was a control group who saw neutral television programs and received irrelevant activity. Three measures were administered following the television sessions. The content test was designed to tap knowledge of the specific content of the programs and generalization of the themes of the programs to other situations. The puppet measure was designed to elicit spontaneous verbal and nonverbal production of the material from the programs, to test generalization of that material, and to measure helping in a fantasy context. The third measure was designed as a behavioral index of helping another child.

Subjects
The subjects were 38 boys and 35 girls enrolled in kindergarten in a small city. Ages ranged from 5-3 to 6-3. The study was conducted in May and June. The children were white, and most came from middle- or lower-middle-class families.

Pretest Data Collected on Subjects
Because the small number of children in each experimental condition might result in initial group differences even after random assignment, three types of information were collected before the experimental treatments were administered. Teachers rated the children on helping and verbal fluency, and a brief test of knowledge of the “Misterogers’ Neighborhood” program was administered.

Helping and verbal fluency.—Four scales dealing with helping and three with verbal fluency were constructed to be as specific as possible. These scales were:

1. The child will share what he has when another child needs something.
2. The child will seek out someone or something to help another child.
3. The child will provide comfort and sympathy to another child.
4. The child will actively engage in an activity to help another child with a project or task.
5. The child engages in role-playing games such as playing house, fireman, cowboys, and the like.
6. The child is verbally fluent. That is, he or she speaks readily, especially to an adult, and talks a great deal.
7. The child has an extensive vocabulary. He or she knows many words and uses them in a meaningful way.

Television Conditions
Four programs from “Misterogers’ Neighborhood” which formed a dramatic sequence were shown. A jealous crisis arises in which one of the characters fears she will be replaced by a fancy new visitor. Much of the action centers on the attempts of friends to understand her feelings, reassure her of her uniqueness, and help her. The programs were edited by 5–12 minutes so the total time for each was about 20 minutes.
The neutral programs were children's films about nature, a visit to the post office, and other topics unrelated to interpersonal relationships or feelings. The films were transferred to videotapes and shown on a television monitor. The films lasted 15-20 minutes each day.

**Training Conditions**

**Verbal labeling.**—For the verbal-labeling condition, a book was constructed to follow each program. The first section of the book was concerned with the events in the program. Illustrations of these events were shown beside a text in which the feelings and actions of the characters were labeled. At the end of the story, the children were asked to repeat the labels from the story and to give examples of the behaviors or feelings labeled (e.g., "When Henrietta sees Collette's picture, she feels . . . what?").

The second part of each book was designed to promote generalization of the concepts to situations involving children. A story about children was constructed to parallel the story from "Misterogers' Neighborhood." In the programs, the major characters were female, but the characters in the generalization section were both male and female in order to increase the appeal for boys. Again, behaviors were labeled and rehearsal questions were presented at the end.

**Role playing.**—For the role-playing condition, hand puppets were constructed to represent the principal characters from the "Misterogers' Neighborhood" programs. The adult trainer and children used puppets in a structured rehearsal of key events and dialogue from the program they had just seen. The second part of each session involved training for generalization to situations with children. Puppets representing children were used, and action and dialogue parallel to those in the television program were rehearsed. In the initial sessions, the trainer modeled the role play before the children participated; in later sessions, the children and trainer interacted with puppets from the outset. During pretesting we found that children, especially boys, were reluctant to use puppets of the opposite sex; therefore, boys used male puppets and girls used female puppets.

**Irrelevant activity.**—In the irrelevant-activity condition, the children received several commercially produced games and books. For each day, there was one game and one book which the adult read to the children. The content of the books was unrelated to the themes of the "Misterogers' Neighborhood" programs, and the games were designed primarily for individual activity rather than group cooperation or competition.

**Procedures**

The combination of television viewing with the three types of training resulted in the following five conditions: (1) prosocial television–verbal-labeling and role-playing training, (2) prosocial television–role-playing training only, (3) prosocial television–verbal-labeling training only, (4) prosocial television–irrelevant activity, and (5) neutral television–irrelevant activity. The children were randomly assigned to one of the five experimental conditions with the restriction that the conditions were balanced for sex, teacher ratings of helping and verbal fluency, and initial knowledge about "Misterogers' Neighborhood."

After assignment to experimental conditions, subjects within each condition were placed in groups of three or four children. The groups contained both males and females in as balanced proportions as possible. These groups saw the television programs together and received training immediately following each program. The programs were shown to a given group on Wednesday, Thursday, Monday, and Tuesday. (There was no school on Friday.) If a child was absent on one of these days, he or she was reassigned to another group in the same experimental condition that began after the original group was finished. When this occurred, the subject was usually included in a repeat of the last session in which he or she had participated before absence, plus the sessions that remained. The training sessions for the combined condition lasted about 25 minutes; the other conditions lasted 15 minutes. Two female adults served as trainers.

**Dependent Measures**

**Content test.**—The content test had 39 items consisting of two alternatives. The 39 items were grouped in three sections: (1) specific content of the "Misterogers' Neighborhood" programs (program specific, e.g., "Henrietta knocked down Collette's picture. Did Handiman Negri: [A] Tell Henrietta to pick it up? [B] Help get it back?"); (2) generalization to situations involving the characters from the "Misterogers' Neighborhood" programs that were similar to those occurring in the program (program general, e.g., "X, the owl, loses Lady
Elaine Fairchild’s ball. Would Handiman Negri: [A] Help X find the ball? [B] Tell X to find the ball?”, and (3) generalization to situations similar to those in the program involving children (general, e.g., “Tom loses Sam’s ball. Would Mr. Rogers: [A] Tell Tom to find it? [B] Help Tom find the ball?”). The two alternatives for each item were illustrated on one page of a loose-leaf notebook. For each item, the experimenter read a stem, then read a brief description of the two alternatives. The child was asked to point to the correct alternative. The program-specific items were presented first, then the program-general items, then the general items. Within each section, the parallel items were arranged in different random orders.

The names and characters used in the items were divided equally between males and females. The “Mr. Rogers says” format was used for the general items to make them parallel in structure to earlier items.

The 39 items of the content test were submitted to an item analysis that provided correlations of each item with the total score and the subscore of the section in which it belonged. On the whole, the items correlated well with total score. Three parallel items, one in each section, were eliminated because of zero-order or negative correlations. Of the remaining 36 items, 10 had correlations with total score above .71, 15 had correlations between .51 and .70, eight were correlated between .31 and .50, and three were below .30. The latter three were retained because parallel items showed higher correlations, and the total scores of the subparts would be unbalanced if one item were removed without deleting the parallel items.

The reliability of the total score (Kuder-Richardson 20) was .87, and the reliabilities of the subscores were .69 for program specific, .72 for program general, and .67 for general.

The content test was administered to all children on the last day of television viewing and training. Five female experimenters administered the tests. All were blind to the conditions in which the children had participated. The test took approximately 20 minutes.

Scoring categories for verbal and nonverbal behavior were constructed initially on the basis of theoretical criteria and were modified and refined by a detailed examination of the data. The process of refining and scoring was carried out with the information about experimental conditions removed from the protocols. Verbal responses were classified as Rogers prosocial (themes from the programs), general prosocial (positive or socially responsive remarks that were not directly related to the program content), neutral, or hostile. Nonverbal behavior that involved helping other programs, and (2) to measure helping behavior in a fantasy context.

In the program-related section, the experimenter manipulated a Henrietta puppet on the stage of a puppet theater. Initially, Henrietta discussed her jealousy of Collette. She knocked down a picture of Collette and a string of beads belonging to Collette, then made a series of four remarks with pauses of 10 seconds between them. Helping was scored if the child picked up the picture and the beads and restrung the beads. Scores were weighted more heavily the earlier in the sequence the helping acts occurred. Replacing the picture had appeared in a television program and in training, but the episode with the beads had not been seen or rehearsed previously. The remainder of the program-related section consisted of verbal probes by the Henrietta puppet designed to tap the themes of the prosocial programs. Some of the probes were directly from the programs (e.g., “Do you think that they would send me away?”); others required reformulation or more general application of content (e.g., “How do friends show they like you?”).

In the generalization section, the experimenter and child each used a puppet of the child’s sex. The experimenter presented a brief story that was parallel to the last two television programs. Again, the probes consisted of specific questions parallel to those in the program and training (e.g., “My mad wishes made the cake fall, didn’t they?”) and more general questions that had not been seen or rehearsed (e.g., “Why did you come to my house?”).

The puppet measure was administered by one of two female adults. A second female adult recorded all speech and nonverbal behavior. The speech was also tape recorded. The session took approximately 15 minutes.

Puppet measure.—The puppet measure consisted of two sections—a program-related section and a generalization section. The purpose of the measure was twofold: (1) to tap the child’s spontaneous production of verbal and nonverbal content from the prosocial programs, and (2) to measure helping behavior in a fantasy context.
than picking up the picture and beads, or was imitative of the television program content, was scored prosocial. Other nonverbal behavior was classified as neutral, distracted, or hostile. The placement of particular types of responses in these categories was discussed by both authors before the final scoring of individual protocols.

**Behavioral helping measure.**—The behavioral helping measure was constructed through extensive pretesting after determining that previously used procedures were inappropriate for this study. A female experimenter seated the child at a table on which two portable easels rested. On one easel there was a collage that was torn, with five of the pieces falling off. The experimenter told the child that another child had made the collage but had torn it and knocked the pieces down accidentally. The other child had been especially sad and angry because the collage was for his (her) mother's birthday.

Following the presentation of this sad story, the experimenter left the child seated for 1 minute saying she would gather materials for him to make a collage. After the child finished his own collage, there were three probes, timed approximately 1 minute apart, designed to be increasingly explicit in facilitating helping behavior (e.g., "Is there anything you can think of that would make the other boy [girl] feel better?"). Finally, an opportunity to share was presented by giving the subject five shiny gold stars for his collage and saying, "You can take as many as you want for yourself and give as many as you like to the other boy [girl]."

The number of pieces repaired (frequency), time spent helping (duration), and latency before the first helping act were the principal scores derived. For frequency and duration, weighted scores were also calculated by weighting responses that occurred before the probes more heavily than those that occurred following the probes.

The behavioral helping measure was administered by one of three females who were blind to the experimental condition assignments of the children. A second female recorded the child's behavior. The puppet measure and behavioral helping measure were administered in counterbalanced order. For most children, both measures were given within 2 days following the last television and training session (normally Wednesday and Thursday). Due to scheduling problems or absences, some children received one or both measures at the beginning of the week following the last television session. The maximum time interval between television and testing was 1 week.

**Results**

The basic analysis for measures was analysis of variance of sex × conditions using the procedures described by Winer (1971, pp. 468-473) for a factorial experiment with a single control group. First, all five conditions were compared for condition differences. Then, the neutral condition was compared with all the prosocial television conditions combined. The four prosocial conditions were analyzed in a factorial design including verbal-labeling training and role-playing training.

**Content Test**

The content test scores were submitted to an analysis of variance of sex × conditions × subscore. There was a significant difference among conditions, \( F(4,62) = 6.71, p < .01 \). The interaction of sex × conditions was of borderline significance, \( F(4,62) = 2.37, p < .10 \). The means for males and females in the five conditions appear in Table 1.

Children in the prosocial conditions scored significantly higher than those in the neutral conditions, \( F(1,62) = 8.21, p < .01 \). It is also noteworthy that there was little difference between the three subsections of the content test. There was some tendency for the groups who had seen the prosocial program to perform better on the program-specific items, \( F(2,98) = 2.81, p < .10 \), but this difference was minimal. They showed significantly higher scores than the children in the neutral condition on program-general and general items as well.

**Table 1**

<table>
<thead>
<tr>
<th></th>
<th>Role-Playing Treatment</th>
<th>Verbal-Labeling Treatment</th>
<th>Neutral Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>No RP</td>
<td>29.01</td>
<td>25.56</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>28.38</td>
<td>30.72</td>
</tr>
<tr>
<td>Female</td>
<td>No RP</td>
<td>25.44</td>
<td>33.99</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>28.68</td>
<td>29.49</td>
</tr>
<tr>
<td>Both</td>
<td>No RP</td>
<td>27.21&lt;sup&gt;ab&lt;/sup&gt;</td>
<td>29.79&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>28.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>30.06&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

*Note.*—Means that include the same superscript are not significantly different. RP = role playing; VL = verbal labeling.
When individual conditions were compared with the neutral group, all groups that received verbal-labeling or role-playing training had significantly higher scores than the neutral group. The effects of the two types of training varied, however, for boys and girls. There was a significant interaction of sex \( \times \) verbal labeling \( \times \) role playing, \( F(1,49) = 4.99, p < .05 \), and a borderline interaction of sex \( \times \) verbal labeling, \( F(1,49) = 2.38, p < .10 \). For boys, there was little difference between the group that saw the prosocial program with irrelevant activity and those who were trained. The means indicate that the lowest scores were in the verbal-labeling condition and the highest scores in the combined verbal-labeling and role-playing condition. However, girls who had been exposed to verbal labeling alone performed better than those with irrelevant activity. The difference is of borderline significance, \( F(62) = 1.64, p < .10 \), partly because of the small numbers in the subgroups. The means indicate that the girls who had irrelevant activity had lower scores than those in the training condition, but the differences are not significant for role playing or the combined training.

On the content test, then, exposure to the prosocial programs led to better performance than exposure to neutral programs. Children who saw the programs apparently learned their content. Perhaps of more importance, they generalized the ideas in the programs to new situations closely related to everyday life. Verbal-labeling training produced slightly greater learning for girls than exposure to the programs without such training, but neither type of training enhanced learning for boys.

### Puppet Measure

**Rogers verbalization.**—The total Rogers verbalization score represents the sum of single-word responses and longer utterances that reflected program content. The results for the program-related and the general sections of the puppet measure were quite similar, so only the analyses of totals across both sections are presented.

The children who saw the prosocial television programs had higher Rogers verbalization scores than those in the neutral condition, \( F(1,61) = 7.40, p < .05 \). Within the prosocial television conditions, the effects of training differed for boys and girls—sex \( \times \) verbal labeling, \( F(1,48) = 4.53, p < .05 \). The means appear in table 2.

Girls who received verbal-labeling training—whether or not it was combined with role playing—had higher Rogers verbalization scores than those who did not receive verbal-labeling training. While boys’ scores were highest in the combined training condition, neither type of training produced significant improvement over the scores of boys who saw the programs with no additional training.

In order to control for overall amount of verbalization, the Rogers verbalization scores were divided by total verbalization for each child. The resulting proportions fell in a pattern similar to that obtained with the raw scores (see table 2). Children who saw the prosocial programs had higher proportions of Rogers verbalization than those in the neutral condition, \( F(1,63) = 17.37, p < .001 \). There was also a significant main effect of verbal-

### TABLE 2

**MEAN VERBALIZATION SCORES ON PUPPET MEASURE**

<table>
<thead>
<tr>
<th></th>
<th>Total Rogers Verbalization</th>
<th>Proportion of Total Verbalization Related to Rogers Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Role-playing Treatment</td>
<td>Verbal-labeling Treatment</td>
</tr>
<tr>
<td></td>
<td>No VL</td>
<td>VL</td>
</tr>
<tr>
<td>Male</td>
<td>No RP</td>
<td>4.25</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>1.13</td>
</tr>
<tr>
<td>Female</td>
<td>No RP</td>
<td>9.71</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>6.33</td>
</tr>
<tr>
<td>Both</td>
<td>No RP</td>
<td>12.13abc</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>9.07abc</td>
</tr>
</tbody>
</table>

**Note.**—Means that include the same superscript are not significantly different. RP = role playing; VL = verbal labeling.
labeling training, $F(1,50) = 6.41, p < .05$, but no significant interaction of sex with either type of training.

However, it is clear from an inspection of the means that verbal labeling by itself did not produce elevated scores for the boys' group. Only the combined role-playing and verbal-labeling training group showed a higher proportion of Rogers verbalization. For girls, verbal-labeling alone, or in combination with role-playing training, was effective.

It is evident from the proportion scores that the effects of conditions on the raw scores were not due simply to an increase in overall amount of verbalization following training.

There were no significant effects of conditions on verbalization classified as generally prosocial, neutral, or hostile.

In summary, the verbalization scores on the puppet measure are consistent with the content test in indicating that children exposed to the prosocial television programs learned the specific content of those programs and were able to generalize that learning to new situations. The learning was demonstrated in both a multiple-choice format and in production of spontaneous verbalization.

Children who received both types of training generally had the highest scores of any group. For girls, the verbal-labeling training by itself was also very effective. Boys showed elevated scores only in the combined training condition. The role-playing condition alone was generally not effective.

**Prosocial nonverbal behavior.**—In the program-related section of the puppet measure, helping was scored when the child picked up the picture and the beads and restrung the beads. There was a borderline effect of sex $\times$ condition, $F(4,63) = 2.39, p < .10$, on helping. The comparison of the four training conditions indicated a significant sex $\times$ verbal labeling interaction, $F(1,50) = 5.95, p < .05$. The means appear in table 3.

The second prosocial nonverbal behavior category was imitation and generalized helping. This behavior differed significantly by condition, $F(4,63) = 2.66, p < .05$, and there were no interactions with sex. The means appear in table 4.

In summary, exposure to the prosocial programs resulted in some increase in imitative and helping behavior in the puppet situation.

**TABLE 3**

<table>
<thead>
<tr>
<th>SEX</th>
<th>ROLE-PLAYING TREATMENT</th>
<th>VERBAL-LABELING TREATMENT</th>
<th>NEUTRAL CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>No RP</td>
<td>11.50&lt;sup&gt;a&lt;/sup&gt;</td>
<td>9.13&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>15.25&lt;sup&gt;a&lt;/sup&gt;</td>
<td>9.86&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td>Female</td>
<td>No RP</td>
<td>5.86</td>
<td>9.00</td>
</tr>
<tr>
<td></td>
<td>RP</td>
<td>6.00</td>
<td>13.00</td>
</tr>
</tbody>
</table>

Note.—Means that include the same superscript are not significantly different. RP = role playing; VL = verbal labeling.

For males, the neutral condition was lower than the prosocial television conditions, although the difference was significant only for the group that received role-playing training by itself. Males were more helpful when they were not exposed to verbal labeling than when they were exposed. Females were more helpful with verbal-labeling training than without, but the combined training condition was highest and was, in fact, the only condition in which helping exceeded the neutral group. The strongest effect of training, then, was role playing for boys.

In summary, exposure to the prosocial programs resulted in some increase in imitative and helping behavior in the puppet situation.

**TABLE 4**

<table>
<thead>
<tr>
<th>ROLE-PLAYING TREATMENT</th>
<th>VERBAL-LABELING TREATMENT</th>
<th>NEUTRAL CONDITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>No RP</td>
<td>1.07</td>
<td>1.14</td>
</tr>
<tr>
<td>RP</td>
<td>1.57</td>
<td>2.60</td>
</tr>
<tr>
<td>RP + no RP</td>
<td>1.31</td>
<td>1.90</td>
</tr>
</tbody>
</table>

Note.—Means that include the same superscript are not significantly different. RP = role playing; VL = verbal labeling.
Where training effects occurred, role playing by itself was effective for boys. The combination of role playing and verbal labeling resulted in some increase in helping for boys and girls.

Other nonverbal behavior.—There were significant sex differences independent of conditions on a combined index of distraction (irrelevant verbalization and distracted behavior like fidgeting and leaving the chair; \( F(1,63) = 4.27, p < .05 \)). In all instances males were higher than females. Nevertheless, as there were no sex differences on the prosocial categories, the greater distraction shown by males did not appear to impair their performance.

Behavioral Helping Measure

The three main indices of helping were frequency, duration, and latency. As these three dependent variables were highly correlated, they were analyzed in a multivariate analysis of sex \( \times \) condition. The results for the weighted scores are reported; the unweighted scores produced similar results. The means for the three variables appear in table 5. On the multivariate analysis, there was a significant effect of conditions, \( F(12,159) = 2.66, p < .01 \).

Children of both sexes showed the highest level of helping in the role-playing condition without previous verbal labeling. Comparisons of each prosocial television group with the neutral group indicated that the role-playing condition without verbal labeling was significantly different from the neutral condition. The other three prosocial television groups were not significantly different from the neutral group. Although the interaction of sex \( \times \) condition was not significant on the multivariate analysis, there was a borderline main effect of sex—girls tended to be more helpful than boys, \( F(3,60) = 2.54, p < .10 \).

For the four prosocial television conditions, there were main effects of verbal labeling, \( F(3,48) = 3.49, p < .05 \), and role playing, \( F(3,48) = 4.96, p < .01 \), as well as interactions of sex \( \times \) verbal labeling, \( F(3,48) = 3.29, p < .05 \), and verbal labeling \( \times \) role playing, \( F(3,48) = 2.95, p < .05 \). Overall, children who received verbal-labeling training were slightly less helpful than those who did not receive verbal-labeling training. Inspection of the means for the two sexes separately indicates that this result is due to the boys. Girls were somewhat more helpful with verbal-labeling training than without. This was especially true for those who received role-playing training. That is, both boys and girls were helpful in the role-playing condition without verbal labeling, but girls tended to be even more helpful in the combined condition.

When the individual components of helping are viewed, the effect of role-playing training for boys is clear. Boys showed higher frequency of helping, spent more time helping, and did so with greatly reduced latency. Girls in this group differed from other groups only in reduced latency. However, while the effects of training are clearer for boys, this may be due in part to the generally higher helpfulness of girls in the neutral condition.

In summary, on the behavioral helping measure, exposure to the prosocial program, plus role-playing training, was associated with helping behavior in a situation that was very different and far removed from the television and training. Verbal-labeling training did not enhance helping for boys, but, when added to the role-playing condition, it led to greater helping behavior for girls. There were no ef-

<table>
<thead>
<tr>
<th>TABLE 5</th>
<th>MEAN WEIGHTED HELPING SCORES ON BEHAVIORAL HELPING MEASURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td>No VL</td>
</tr>
<tr>
<td>Frequency:</td>
<td></td>
</tr>
<tr>
<td>No RP</td>
<td>3.94</td>
</tr>
<tr>
<td>RP</td>
<td>15.50</td>
</tr>
<tr>
<td>Duration:</td>
<td></td>
</tr>
<tr>
<td>No RP</td>
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</tr>
<tr>
<td>RP</td>
<td>206.5</td>
</tr>
<tr>
<td>Latency:</td>
<td></td>
</tr>
<tr>
<td>No RP</td>
<td>570.0</td>
</tr>
<tr>
<td>RP</td>
<td>175.6</td>
</tr>
</tbody>
</table>

Note.—VL = verbal labeling.
effects of conditions on verbal suggestions for helping or on sharing.

Effects of Pretest Levels of Helping, Verbal Fluency, and Knowledge about the Prosocial Program

Some subsidiary analyses were performed to determine whether the impact of the television conditions varied as a function of the pretest variables. Boys and girls were divided at their respective medians on the basis of teacher ratings of helpfulness, ratings of verbal fluency, and, finally, scores on the test of familiarity with "Misterogers’ Neighborhood." Each of these variables was included with conditions in an analysis of variance of the dependent variables to which it might logically be related.

There were no consistent or meaningful interactions of teacher-rated helpfulness with conditions for the helping measures in the study. Similarly, teacher-rated verbal fluency did not interact with conditions on the verbal measures. Finally, initial knowledge about the programs had neither main effects nor consistent interactions with television condition on the learning measures. Thus, the effects of the television and training did not differ for children of different levels of verbal fluency, classroom helpfulness, or initial familiarity with Mr. Rogers.

Intercorrelations of Measures

The content test and verbalization responses on the puppet measure were considered indices of learning of the program content, while helping on the puppet measure and the behavioral helping measure were considered indices of performance or modeling behavior. Correlations among the most general measures in each of these categories provide some information about the consistency both within and between measures of learning and performance.

The content test score was positively related to total Rogers verbalization on the puppet measure, \( r = .42, p < .01 \). All measures of helping on the puppet measure and the behavioral measure were positively related. Nine of the 10 correlations were significant at the \( .01 \) level or higher. The correlations ranged from \( .37 \) to \( .80 \). Within the indices designed to measure learning and performance, then, there were consistent positive relationships between the indices designed to measure learning and among those designed to measure performance. Thus it appears that these diverse techniques did in fact measure the same dimensions.

It might also be expected that learning and performance would be correlated. Rogers verbalization on the puppet measure was positively related at the \( .01 \) level and higher to helping behavior on both the puppet measure and the behavioral helping measure. The correlations ranged from \( .27 \) to \( .56 \). Content test scores were unrelated to helping behavior.

Discussion

The first purpose of the study was to investigate the effects of prosocial television on children's learning and behavior. The results provide clear evidence that children learned the prosocial content of the television programs and generalized that learning to a number of real-life situations. The results also provide some support for the prediction that the prosocial programs would lead to increased helping behavior, both in situations similar to the program and in situations very different from the program. These conclusions apply equally to boys and girls.

Another principal area of interest was the development of training procedures to enhance learning of the prosocial content of the programs and increase the child's ability to include this content in his behavioral repertoire. Two different types of training were used—verbal labeling and role playing. Both boys and girls responded to training with increased prosocial verbalization and helping behavior on a fantasy measure and on a helping task far removed from the television stimuli. However, the effects of the two types of training were somewhat different.

The verbal-labeling training, which involved listening to a story and rehearsing the labels, had the greatest impact on verbal measures of learning and generalizing program content, particularly for girls. Although this training by itself did not affect verbal learning for boys, it did lead to high levels of learning when combined with role playing.

Role-playing training, which involved rehearsing selected dialogue and actions with puppets, increased helping behavior, particularly for boys. Girls also showed some increase in helping behavior in response to role playing by itself, but they tended to be even more helpful when they received both kinds of training.

In the framework of observational learning
Although generalization was built into both types of training, the measures of generalization were not identical with the situations used in the training. The measures of learning—the content test and spontaneous speech on the puppet measure—required reformulation and generalization of verbal material rehearsed. The behavioral helping measure was quite different from any situation or action presented in the television or training.

The clear effects of television and training in this relatively small-scale study suggest that this type of prosocial television can have a strong impact on children who watch it in naturalistic contexts where viewing can occur over a much longer period of time than 1 week. These results appear to be readily applicable to naturalistic settings because the children generalized both learning and behavior to situations quite different from those to which they were exposed in the television and training, and because this generalization occurred in measures administered 2 or 3 days after the television viewing.

References


