

Positive Effects of Television on Social Behavior: A Meta-Analysis

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Foreword

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It is commonly held that television viewing does more harm than good, especially to young audiences. Particular attention has been focused on the negative effect watching violent programming has on social behavior — a recent article reviewed 217 studies on the link between viewing and aggression (Paik and Comstock, 1994).

Using meta-analytic techniques as the primary method for describing the research, this paper synthesizes the work on positive effects of television. Meta-analysis is a method of evaluating the empirical evidence on a particular question by combining the data from numerous studies. Although the original data are seldom available, most articles provide sufficient information to allow readers to calculate effect sizes. An effect size is a measure of the strength of a relationship. In the experiments reviewed here, the effect size is often the difference between a control group and a group exposed to prosocial content, or between a group that sees some negative content and a group that sees some positive content. In surveys, the effect size is often the correlation between how much prosocial television content children watch and how positively they behave — it can be thought of as the difference between heavy and light viewers of prosocial television content.

In a meta-analysis, effect sizes can be averaged across studies to provide an estimate of the size of the difference between those who see prosocial content and those who do not. In addition, this technique allows us to explore how the effect size varies — by age of the viewer, by the type of study, by the type of prosocial content, and so on.

Two other notions that need explanation: television viewing and positive/prosocial. Television viewing is construed in its broadest sense here. That is, studies were included whether they measured number of hours of daily viewing, or involved exposing subjects to specially constructed 5-minute videotapes of a model carrying out some particular behavior. In some of the early studies, “television viewing” really means watching a film. One of the questions to be answered in this paper is whether the effect size depends on the way television exposure was measured and conceived.

The notion of the prosocial is more difficult — it is not as easy as it first seems to sort out which behaviors are positive and which are negative. This is more than a hazy moral relativism. It is naive to assume that all groups in society place equal value on cooperation (rather than rugged individualism), tolerance of others (rather than willingness to stick up for one’s own group), nonviolent conflict resolution (rather than heroism), or ability to resist temptation (rather than ability to seize the moment). Nonetheless, all of these have been used as prosocial outcomes in research.

There are two responses to this problem. The best would be to look at the interplay between the individual’s perceptions of social norms and that individual’s reactions to specific types of content. After all, groups that value machismo will probably react differently to a “prosocial” portrayal of two men

deciding not to fight, than groups who value rational discussion as a solution to social conflict. This idea is not new to research on persuasion but it generally has not informed the research on prosocial effects of television viewing. At most, a few researchers have compared children of high vs. low socioeconomic status, or children who were initially high in aggression with those who were less aggressive. Accordingly, this paper investigates whether television has an influence on specific behaviors, with little regard for probable subgroup differences in responses.

Given this, it was necessary to make a pragmatic decision about what would be termed positive effects. In this review, four clusters of outcomes were considered. The first was positive interaction, which included friendly/nonaggressive interactions, expressions of affection, and peaceable conflict resolution. The second was altruism, which included sharing, donating, offering help, and comforting. The third set of behavioral outcomes consists of self-control variables, which included resistance to temptation, obedience to rules, ability to work independently, and persistence at a task. The final outcome was anti-stereotyping — the effects of counterstereotypical portrayals of gender and ethnicity on attitudes and beliefs.

These four categories cover most of the outcomes which have been called prosocial effects by social science researchers. For reasons of manageability I have left out certain cognitive outcomes such as the effects of television on language acquisition or imagination — there is more than enough literature in that area to warrant a separate meta-analysis.

Why Expect Positive Effects of Viewing?

Content analyses continue to find high levels of violence and criminal activity on television. Kunkel et al. (1996) conducted a content analysis of programs from 23 channels (including networks, public, and independent broadcast, and basic and premium cable). They reported that 57% of sampled programs contained at least one act of violence. Moreover, children's shows were more violent than many other types of programming — 66% of the children's programs sampled contained violence. Violence was often portrayed as justified, with little emphasis on the negative consequences of aggression.

The above statistics indicate that 44% of children's programming contained no violent acts at all, but that does not mean they did not contain other antisocial acts. What do we know about the prevalence of prosocial content?

Early content analyses conducted during the 1970s found considerable variability in the frequency of various types of prosocial behavior. Liebert and Poulos (1975) analyzed broadcasting programming for 1974 and reported that although there were an average of eleven altruistic acts and six sympathetic

behaviors per hour of programming, resistance to temptation and control of aggressive impulses occurred less than once per hour (see also Poulos, Harvey, & Liebert, 1976). Liebert and Sprafkin (1989) concluded that children watching during the 1970s (when a number of the studies analyzed here were conducted) were exposed to a fair number of prosocial interpersonal behaviors, but few instances of self-control behaviors.

These early content analyses also indicated that when prosocial acts were shown, they often appeared in the context of aggression. Greenberg, Atkin, Edison, and Korzeny (1980) analyzed the favorite programs of a sample of fourth, sixth, and eighth graders. They found that these programs contained an average of 42.2 acts of antisocial behavior and 44.2 acts of prosocial behavior in an average hour. The prosocial behavior included displays of altruism, empathy, and discussion of feelings. Liss and Reinhard (1980) analyzed prosocial cartoons (those with moral messages apparent to the adult researchers) and standard cartoons. They found that each contained comparable amounts of aggression.

There have been few recent content analyses of prosocial depictions on television, despite the fact that content analyses of antisocial content continue to appear regularly. Content analyses of family sitcoms shown during the 1980s (Larson, 1989; Larson, 1993) found that communication between family members tended to be positive rather than negative or conflict-based. Similarly, Comstock and Strzyewski (1990) analyzed prime-time television programming during the 1987-88 season and found that characters typically resolved interpersonal problems in constructive (e.g., discussion) rather than destructive ways. Clearly, more work is needed to identify the type, frequency and context of positive behaviors shown on television (and in children's videotapes). For example, Abelman (1991) argued that depictions of prosocial behavior are often less visually and aurally explicit than depictions of violence.

If one can conclude that there are prosocial acts on television, what should one expect to be the results of viewing? Consider some of the effects which have been studied for violent content — learning how to commit violent acts, learning that it is acceptable or appropriate to commit violence, imitation of depicted aggressive acts, performance of violent acts that were not specifically depicted, and desensitization (gradually coming to be less aroused and upset by scenes of violence).

The two basic mechanisms behind these effects are 1) we learn by observation how to do things and whether it is alright to do them and 2) we have emotional responses while watching television. As Rushton (1979) pointed out, both of these mechanisms are relevant to viewing of prosocial material as well. Moreover, depictions of prosocial behavior are more likely to be in accord with established social norms than depictions of antisocial behavior. For example, Rushton argued that there is a norm to help one another.

“If we asked a stranger in the street for directions, we would expect him or her to provide the information if possible and to apologize if not. If the stranger were instead to turn to us and say ‘Yes, I do know where that place is but I can’t be bothered to tell you,’ we would be rather surprised.” (pp. 324)

This suggests that depictions of positive acts, such as generosity or comforting someone who is upset, are likely to reinforce rather widely accepted standards of behavior, whereas depictions of murder and mayhem are in opposition to those standards. Of course, there is the caveat that there is some variation in these norms of prosocial behavior and in the extent to which these norms are internalized. Research on prosocial behavior finds that individuals tend to be consistent in the degree to which they display prosocial behavior, but there is some variation between individuals (see Rushton, 1979, for a review.)

Despite this variation, it seems plausible that portrayals of prosocial content will be more in accord with social norms, and that imitation of prosocial acts depicted on television is more likely to be received positively than imitation of antisocial acts. (For instance, Grusec 1991 reported that spontaneous altruism in young children is often responded to with some form of social reinforcement such as thanks, hugs, or smiles.) Therefore, there is some reason to expect that exposure to positive content will be at least as powerful as exposure to antisocial content, other things (such as attractiveness of the models) being equal.

A meta-analysis of the early research on effects of television found surprisingly strong, positive effects of exposure to prosocial content. Hearold (1986) reviewed 230 studies on television and social behavior published prior to 1978. She concluded that prosocial effects were stronger and more enduring than antisocial effects, both in the laboratory and in more natural conditions. Hearold included a wider range of positive outcomes than are considered here (e.g., imagination, buying books, safety activism, and “conversation activism”). This paper is intended as partial update of her work. Paik and Comstock (1993) have provided an updated meta-analysis of the effects of violent content on aggression (as opposed to Hearold’s review of a broad spectrum of antisocial effects). It should be possible to make some comparison between the effect sizes for prosocial content and violent content.

Probable Developmental Differences

Put simply, we can expect there to be age differences in response to prosocial portrayals because research indicates that many of the skills and attributes linked to prosocial behavior develop throughout childhood, even into adolescence. Prosocial behaviors such as helping, sharing, donating, and comforting have been linked with perspective-taking skills, empathy, problem-solving skills, and level of moral

reasoning. These continue to change throughout childhood and into adolescence (see Eisenberg, 1990 for a review). Younger children are less able to recognize the emotional states of others (Hoffman, 1976), and are often less sure of how to help (Barnett, Thompson, & Schroff, 1987). When younger and older children do help, their motives may be quite different. Research by Bar-Tal and Nissim (1984) and by Midlarsky and Hannah (1985) suggests that younger children tend to have more egocentric motives — they act prosocially for a reward or to alleviate their own discomfort. Adolescents are more likely to report acting for altruistic reasons.

Apart from this, young children have difficulty understanding television content, particularly if it is abstract or requires making inferences about the connections between different parts of the story. Younger children's recollections of a televised story are likely to contain memories of a concrete act, but are less likely to contain information about the motives for the act, or even the consequences of the act (Collins, Wellman, Keniston, & Westby, 1978). The link between actions and consequences is particularly tenuous for young children when the two segments of the story are separated by commercials (see Collins 1981; 1983, for reviews).

This suggests that younger children may be less affected by prosocial portrayals than older children, particularly if those portrayals are more complex than simple modeling of a specific behavior. Hearold's (1986) meta-analysis of pre-1978 studies did not contain age comparisons though she reported that after age 6, there seemed to be a stronger effect of prosocial content on girls than on boys. Age differences will be explored in this paper.

Methods

Sample of Studies

Two primary sources were used to generate the sample of studies. First was a computerized database search of PsycLIT for the years 1974 (the earliest year available on this database) through 1995, using the key words prosocial and television. Because researchers sometimes referred to altruism or sharing, rather than prosocial behavior, a broader search with the key words children and television and adolescents and television was undertaken to make sure that no studies were missed. The second primary source was a computerized data base search of the Educational Resources Information Center (ERIC) for the years 1966 (the earliest year available on this database) through 1995. In addition, studies were culled from the reference list for Hearold's (1986) meta-analysis and from an expanding search of the reference lists of all studies found on the topic.

Studies were included if they (1) involved exposure to television content deemed prosocial or positive by the researchers, (2) measured a relevant behavioral outcome of exposure, and (3) contained enough statistical information to allow for calculation of effect sizes.

As mentioned before, four clusters of outcomes were considered. Effects were included under “altruism” if they involved measures of sharing, donating, offering help, and comforting. “Positive interaction” included friendly/nonaggressive interactions, expressions of affection, and peaceable conflict resolution. Studies that simply reported on “prosocial behavior” were also put into this category. “Self-control” included resistance to temptation, obedience to rules, ability to work independently, and persistence at a task. Studies with the alarming title of “resistance to deviation” proved to be measuring ability to resist temptation to break the rules of some situation. The final outcome was antistereotyping. This consisted of the effects of viewing counterstereotypical portrayals of gender and ethnic groups on attitudes and beliefs.

In calculating effect sizes, decisions were made about how to divide up the reported data. The goal was to divide the study’s subjects into samples as homogenous as possible, in order to make as fine-grained comparisons as possible later. Therefore, different age groups and different sexes were treated as separate samples and an effect size was calculated for each sample within the study. In addition, studies sometimes reported on more than one variable of interest, e.g., both altruism and friendly play. A separate effect size was calculated for each of these variables for all the samples within a study. However, when the study reported on multiple measures of the same variable, those measures were averaged to form one effect size for that variable.

The result was 39 usable sources, 185 effect sizes.

Coding the Studies

The complete coding sheet is included in Appendix A, but the major categories are explained here.

Source information. Each paper was coded in terms of the year of publication, the source (journal, book chapter, unpublished convention paper), the country in which the data were collected, and the total number of effect sizes for that reference.

Sample information. The sample for each effect size was coded in terms of age range, mean age, sex, ethnicity, whether they were institutionalized (and type of institution), socioeconomic status, academic ability, and prior levels of aggression. In many cases, the socioeconomic status, academic ability, prior aggression were not reported which means that the ability to explore these variables as media-

tors of the effects of prosocial content is limited. In some studies, ethnicity was not reported at all, and the data were never reported separately for different ethnic groups, so this variable is not used in the analyses below. In some studies, data for males and females were not reported separately, so they had to be coded as “both”.

Comparison information. Each effect size was coded to indicate the comparison it represented. The simplest comparison is between a group that saw prosocial content and a control group which did not see anything. However, many studies did not have a control group and made different comparisons.

For experimental and field experimental studies, effect sizes were computed for comparisons between

1. prosocial vs. control (or pretest scores)
2. prosocial vs. neutral content
3. prosocial vs. antisocial content.

Some experimental designs allowed for examination of the effects of specific types of prosocial content or the combination of prosocial content with additional material such as role playing or discussion.

4. prosocial + discussion/roleplaying vs. neutral
5. aggressive prosocial vs. neutral
6. nonaggressive prosocial vs. aggressive prosocial

Aggressive prosocial refers to content that shows some conflict and then shows a positive solution to it. So, in comparison 6, we can investigate whether it is more effective to show a conflict and a positive resolution or simply to show peaceful interaction with no conflict.

In survey research, the effect sizes were also calculated. Again, effect sizes in the survey research reported here can be thought of as a comparison between those who watch more of the content and those who watch less of it. Unlike experiments in which individuals were assigned to watch different types of content, survey research reported on self-selected exposure in daily life. On the one hand, this has the advantage of external validity — the data reflect real world events; on the other, it is more difficult with survey research to be sure of the causal relationship between viewing and prosocial behaviors.

7. self-selected exposure to prosocial content
8. total self-selected exposure to television content.

Comparison 8 allows us to investigate whether overall exposure to television is related to prosocial outcomes.

Treatment information. Codes were created to indicate that content that had been used as an exemplar of prosocial, antisocial, and neutral television. For example, the prosocial content might have come from “Mr. Rogers’ Neighborhood” or “Sesame Street” or could have been a videotape of modeled behavior. For experimental designs, the treatment information was also coded in the following ways:

1. whether it was animated, live, or a mix
2. whether it consisted of whole television programs, edited programming, or was produced especially for the research project.
3. the total viewing time in minutes
4. duration of the treatment in days
5. whether the prosocial behavior depicted was rewarded

Outcome information. Codes were created for

- (1) the type of outcome (e.g., sharing, donating, and offering help).
- (2) The measurement technique (e.g., questionnaire, peer reports, observation).
- (3) The realism of the measurement (observation or reports of everyday behaviors vs. performance on an experimental task).
- (4) Similarity between the treatment and the outcome measure.
- (5) Number of days between the treatment and the outcome measure.

Design information. Codes were created for

- (1) assignment to treatment (random, pre-post, uncontrolled, or matched).
- (2) the type of study (experiment, field experiment, or survey).

Statistical information. Codes indicated which statistics were used from the study to create the effect size, and whether the statistics had been significant.

Statistical Analysis

The effect size computed for each of the measures was d . This measure is defined as the mean for one group minus the mean for another group, divided by the pooled within-group standard deviation. Positive values of d indicate that the group which saw the prosocial content scored higher on the measure of positive outcome (e.g., were more altruistic) than the comparison group. In surveys, this

meant that those who watched more prosocial television scored higher than those who watched less. Negative values of d indicate that the comparison group scored higher than the prosocial group. For the comparison between nonaggressive prosocial content and aggressive prosocial content, positive values of d indicate that the nonaggressive prosocial group scored higher than the aggressive prosocial group.

Formulas provided by Hedges and Becker (1986) were used for the computations of d , depending on the statistics reported in a given study. In addition, d values were first corrected for bias in estimation of the population effect size, using the formula provided by Hedges (1981).

Results

Table 1 shows effect sizes for each of the four types of outcomes, averaged across study types (i.e., experiment, field experiment, survey). It also shows the overall effect size for four outcomes combined.

Overall

Averaged across the four outcomes, the effect size for the comparison of prosocial groups with “other” (e.g., control group) was .28. The effect size for the comparison of those who saw prosocial content with those who saw antisocial content was .40. How should these values be interpreted?

There is considerable controversy about assigning qualitative descriptions to effect sizes. A small change in behavior may be of critical importance or it may be trivial. Nonetheless, it is useful to have some guide to interpretation. The rule of thumb suggested by Cohen (1988) is that a d value of .20 should be considered small, d of .50 is medium, and d of .80 is large.

So, what does this mean about the overall effect of prosocial content? It suggests that there is a small-to-medium improvement in prosocial behavior for those who see prosocial content compared to those who do not. There is a moderate improvement across behaviors when we compare those who watch prosocial content with those who watch antisocial content.

These effect sizes are smaller than those found in Paik and Comstock’s meta-analysis of the effects of violent television. They reported that the overall effect of watching violent television was .65. Taken together, **these results suggest that there can be positive results of television as well as negative ones, but that the negative effects of violent depictions are more powerful.** This may be because, as Abelman (1991) argues, violent depictions are often more visually salient and explicit. It may also be because antisocial content is more arousing or interesting.

The effect sizes found here are also smaller than those found by Hearold (1986). Hearold found effect sizes ranging from .26 to .54 for prosocial outcomes. An obvious explanation was that studies published prior to 1978 found stronger effects. This, in turn, could be due to a greater proportion of laboratory studies involving modeling of specific behaviors in the pre-1978 sample. The effect size for pre-1978 papers included in this meta-analysis was .33; the effect size for papers published in 1978 or after was .30. Another explanation is the broader range of behaviors included as positive outcomes in Hearold's meta-analysis.

Positive Interaction

Positive interaction was a broad variable used to capture measures such as “friendly play” or “peaceful conflict resolution.” In a typical study, (e.g., Friedrich & Stein, 1973; Coates, Pusser & Goodman, 1976) children were assigned to watch “Mister Rogers’ Neighborhood”, or some neutral content. Afterwards, observers rated the children’s play behavior, counting the number of aggressive acts, friendly behaviors, expressions of affection, etc.

As shown in Table 1, children who saw prosocial content tended to behave more positively toward one another than those who did not see the content, or those who saw antisocial material. The effect size is moderate. This is not surprising given that the measures of positive interaction usually indicate how well children could generalize from the prosocial content depicted to the different situation of their own school or daycare center (rather than how often they imitated specific behaviors from the program).

Some studies involved explicit modeling of behavior to be imitated, but these were generally not included in the meta-analysis because there was insufficient information to compute effect sizes. For example, O’Connor (1973) worked with “social isolates” from nursery school populations. The children either watched a 23-minute film of people interacting positively or a control film. Children who watched the modeling film subsequently became more social.

Altruism

In a typical study of altruism (e.g., Bryan and Walbek, 1970) children were brought into the laboratory and told that they would learn how to play a new game by watching a video. The children watched one of several versions of the video, in which the model played the game, was rewarded by tokens which could be used to win a prize, and then decided whether to behave altruistically (giving some of the tokens to charity or another child) or selfishly (cashing in all the tokens for a big prize).

The children then played the game, won a fixed number of tokens, and were given the opportunity to donate some tokens. The measure of altruism was the number of tokens given.

As can be seen from this example, studies of altruism generally involved explicit modeling of very specific behaviors. In addition, children's altruistic behavior was usually measured immediately, rather than over a period of weeks. This is reflected in the medium-to-large effect size. As Table 1 shows, children who saw prosocial content behaved rather more altruistically than those who saw neutral or antisocial content.

If the altruistic behavior was not explicitly modeled, but required generalization from one context to another, there was a smaller effect. Friedrich and Stein (1975) showed children episodes of "Mister Rogers' Neighborhood" in which one of the characters was afraid that she would be replaced by a fancy new visitor. The prosocial content of the program focused on the character's friends reassuring her. Friedrich and Stein found no effect on viewing this material on children's tendency to help fix another child's torn collage.

One striking feature of the research on altruism is how seldom the need for children's altruistic behavior was made salient. In most cases, children had no contact with the person to whom they were supposedly donating the tokens, (or whose collage needed repairing...) In one of the few exceptions (Sprafkin, Liebert, & Poulos, 1975), children watched different versions of an episode of "Lassie" and were then given the opportunity to help some puppies who were whimpering for help in another room. More work is clearly needed to explore the effects of modeling altruism when the need for help is salient rather than abstract or remote.

Self-Control

Self-control covers a range of behaviors such as ability to resist temptation or ability to follow rules explicitly. As with altruism, studies generally involved exposure to a videotaped model, followed by a chance to imitate the model. In one study (Stein & Bryan, 1972), third- and fourth-grade girls watched a tape to "learn the rules" of the bowling game. The model in the tape either broke the rules (taking more nickels than she deserved for her score) or followed the rules strictly. Other measures have included ability to resist playing with a forbidden toy (Wolf & Cheyne, 1972; Walters, Leat, & Mezei, 1963) and ability to wait seven days for a larger reward rather than taking a small reward immediately (Yates, 1974). In all these studies, children exposed to the positive model showed higher levels of self-control.

One example is the Wolf and Cheyne (1972) study of resistance to temptation. Seven- and eight-year-old boys were taken to a games room and allowed to play with toys, but they were forbidden to play with one particular (very attractive) toy. They were left alone, and the researchers covertly

observed how long it would take the children to play with the forbidden toy. Children who had previously seen a film in which a boy did not touch the forbidden toy, typically waited for eight minutes before they gave in and started playing with it. Children who had not seen a model gave in after five minutes, and children who had seen a boy who played with the forbidden toy usually gave in after three minutes.

In one of the few naturalistic studies of self-control, Friedrich and Stein (1973) showed 4-year-old children “Mister Rogers’ Neighborhood”, aggressive cartoons (“Superman” and “Batman”) or neutral content for 4 weeks. Their free-play behavior during and after the four weeks was coded for obedience to rules, tolerance of delay, and persistence at tasks. Friedrich and Stein found that children who had seen “Mister Rogers’ Neighborhood” showed more persistence and obedience to rules. They were no better than children in the neutral group at tolerating delay (though children in the aggression-viewing group were significantly worse).

Table 1 shows the effect size across these different studies. There is a moderate, positive effect of prosocial depictions on self-control behaviors, compared to control or neutral groups. There is a larger effect compared to groups which saw antisocial content (usually modeling of the forbidden behavior).

Antistereotyping

One of the major goals of “prosocial” programs such as “Sesame Street”, “Big Blue Marble” and “Vegetable Soup” is to counter ethnic and gender stereotypes. The most thorough investigation of the effectiveness of television content in reducing stereotypes was carried out by Johnston and Ettema in their evaluation of “Freestyle”. Several thousand 9-12 year old students watched Freestyle in their classrooms once a week for 13 weeks. Their beliefs and attitudes about gender roles were assessed before and after viewing. Johnston and Ettema found substantial effects of exposure, but the size of the effect depended on the context of viewing. The strongest effects were observed when viewing was accompanied by extra classroom activities designed to expand on the points made in the program. Follow-up testing after nine months showed that the program continued to affect attitudes and beliefs, with relatively little drop-off in effect size. Moderate effects came from simply watching the programs in the classroom. The weakest effects were observed among children who chose whether to watch the program at home. This points to the importance of encouraging viewing and discussing the material rather than assuming that children will watch and absorb the positive content by themselves.

Other research has focused on simple short-term effects. Gorn, Goldberg, & Kanungo (1976) showed children 12 minutes of “Sesame Street” programming with multicultural themes. They found strong effects on interest in playing with nonwhite hypothetical playmates but, not surprisingly, these

effects tended to be very short-lived. Goldberg and Gorn (1979) found that the effects had disappeared by the next day.

Overall, there was a moderate positive effect of the prosocial programming featuring counter-stereotypical themes. Children exposed to this type of programming became less stereotyped or prejudiced in their attitudes and beliefs. The importance of this is made more salient by Hearold's (1986) finding of strong negative effects of stereotyped portrayals.

Viewer Characteristics

Effects of sex of viewer. In many cases, the results were not broken down by sex, so the effect sizes had to be put into the "mixed" category. For those cases where results were reported separately by sex, a correlation was calculated between sex and effect size. The results indicated that prosocial content was somewhat more effective with females than with males ($r=.27$; $n=78$). This may be due to the different norms of behavior for boys and girls. The stronger effect for females is consistent with the results of Hearold's (1986) analysis of papers published prior to 1978. It is also consistent with the results of Paik and Comstock's meta-analysis showing that the effects of antisocial content were slightly stronger for males.

Effects of age. It was suggested that the effects of prosocial television might depend on the age of the viewer. Specifically, younger children were expected to be less positively affected than older children because of developmental changes in cognitive and affective processes relevant to prosocial behavior. To illustrate age differences, three groups were created: children aged five and under; 6-10 year olds, and 11 plus. Age differences could not be meaningfully compared for each behavioral outcome separately because in some cases the number of effects in each cell was very small. This reflected the tendency for altruism and self-control to be primarily studied with children under 10. Table 2 shows the effect size for "prosocial vs. other" across the four outcomes. It also shows the effect size for "prosocial vs. antisocial" though these should be interpreted with more caution because there are few effect sizes in each cell.

Looking at the "Prosocial vs. Other" comparisons, it is clear that there were positive effects of exposure to prosocial content for all age groups, but the effects were weakest for adolescents and strongest for grade school children. Contrary to expectations, the effect size was moderate for preschool children. This indicates that prosocial content can be effective even with very young children. In fact, for the "Prosocial vs. Antisocial comparison" effects were strongest for children aged five or less.

Treatment Characteristics

Correlations were run between effect size and several characteristics of the treatment.

Similarity of treatment and measure. The correlation between effect size and similarity of treatment and measure was .33 ($n=117$), indicating that effects are strongest when the outcome measured is similar to the behavior portrayed. (Similarity was coded as a dichotomous variable: behavior explicitly modeled or not.) This is not surprising, but it highlights the need to be specific in attempts to bring about behavioral change. This finding is consistent with Hearold's (1986) report that antisocial behaviors were more likely to be generalized from one context to another than prosocial behaviors.

Type of material used for treatment. Effect sizes were calculated for studies using real television programming vs. those that used specially created videotapes or films. The effect size for real programming (averaged across the four behavioral outcomes) was .31. The effect size for the created videotapes was .50.

Two Special Cases

Combining prosocial television with other activities. Some studies suggest that prosocial television content is most effective when combined with discussion about the material in the content. For example, Johnston and Ettema (1987) found that the effects of "Freestyle" were strongest when the program was shown in the classroom and combined with teacher-led discussion of the material.

Friedrich-Cofer, Huston-Stein, Kipnis, Susman, and Clewett (1979) examined the effects of prolonged exposure to "Mister Rogers' Neighborhood" among children in urban Head Start centers. They found that children who simply watched the programs showed no significant increase in prosocial behavior compared to children who watched neutral films. When viewing was supplemented with TV-program-related materials such as puppets and books, children's scores on measures of social interaction, imaginative play increased, but so did their levels of aggression. In the final condition, where children watched the program, received the materials, and had teacher-directed activities related to the content, positive behaviors increased but aggression did not.

There are instances when discussion can backfire. Rubinstein and Sprafkin (1982) conducted a study with adolescents who were institutionalized in a psychiatric setting, the majority of whom had serious problems in their social functioning. The adolescents were assigned to watch two weeks of prosocial television programming (e.g., "Fat Albert and the Cosby Kids"), or to a control group. A third condition involved watching the prosocial programming, combined with discussion of the themes in the programs. Rubinstein and Sprafkin found positive effects of exposure to the prosocial content, but they

also found that adolescents in the viewing-discussion group became more aggressive. Adolescents with lower IQs became less altruistic in the discussion conditions. The authors suggested that this population of adolescents tended to be rebellious and nonconformist. As such, they may have rejected an adult's direct support of altruistic, peaceful behaviors, but responded positively to the less moralistic messages presented in the programming.

Mixing prosocial and aggressive content. What happens if aggressive and prosocial content are combined — showing a struggle in which good ultimately prevails? Only a few studies have been done to untangle these effects, but the results suggest that the combination may have more negative than positive impact. Silverman (1976) found that 3-year-old children became less cooperative after watching segments from “Sesame Street” which contained conflict followed by resolution of the conflict. Liss and Reinhardt (1979) found that the combination of prosocial and antisocial acts in the cartoon series “Superfriends” led to more aggressive behavior than either antisocial or prosocial depictions alone. They suggested that the prosocial characters lent an aura of moral justification to their violence which was particularly pernicious.

Summary

The results of this review indicate that prosocial content does have positive effects.

1. Children exposed to prosocial content have more positive social interactions, show more altruistic behavior and self-control, and have less stereotyped views of others.
2. The strongest effects of prosocial content were found for measures of altruism.
3. Relying on children's ability to pick out the moral messages from programs which feature violence or conflict and some prosocial resolution may backfire, leading to more aggression than merely showing the conflict.
4. Effects of prosocial content are often strongest when viewing is combined with discussion.
5. The effect sizes overall ranged from small to medium.
6. Effects of prosocial content were strongest for pre-school and grade-school children, diminishing in adolescence.
7. Effects are somewhat stronger for girls than for boys.

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Table 1

Effect Sizes for Prosocial Content

Overall		
Prosocial vs. Other	.28	104
Prosocial vs. Antisocial	.40	59
Positive Interaction		
Prosocial vs. Other	.27	41
Prosocial vs. Antisocial	.30	14
Altruism		
Prosocial vs. Other	.61	25
Prosocial vs. Antisocial	.56	25
Self-Control		
Prosocial vs. Other	.23	12
Prosocial vs. Antisocial	.53	14
Antistereotyping		
Prosocial vs. Other	.29	26
Prosocial vs. Antisocial	—	—

Note: The “Prosocial vs. Other” comparison is an average of effect sizes for comparisons of prosocial vs. neutral, prosocial vs. control, and correlations of exposure to prosocial content with the outcome measure. There were too few cases to examine the effect size for “Prosocial vs. Antisocial” for antistereotyping.

Table 2

Age Differences in the Effects of Prosocial Content

Age	Prosocial vs. Other		Prosocial vs. Antisocial	
	d	(N)	d	(N)
5 and under	.31	(40)	.59	(15)
6-10	.43	(31)	.44	(22)
11+	.22	(33)	.17	(15)

Note: These effect sizes are averaged across prosocial vs. control, prosocial vs. neutral, and correlations of exposure to prosocial content with the outcome measure.