

## Television and Sex-Role Stereotyping<sup>1</sup>

LESLIE ZEBROWITZ MCARTHUR<sup>2</sup> AND SUSAN V. EISEN<sup>3</sup>

*Brandeis University*

The possible influence of television on sex-stereotyped behavior was investigated in three studies. In Study I the portrayal of male and female central characters on children's Saturday morning television programs was examined, and a number of differences consistent with current sex-role stereotypes were found. Males and females were portrayed in different roles, they manifested different behaviors, and their behaviors were followed by different consequences. In addition, male characters were more frequent than females, and they exhibited higher rates of behavior. Similar differences in the portrayal of males and females in the commercial announcements accompanying these programs were found in Study II. The sexes differed in their frequency of appearance, their location, their roles, their expertise, and the consequences of their behavior. In Study III the effects on children's behavior of exposure to sex-stereotyped vs. non-stereotyped behavior by adult televised models were examined. It was found that children manifested greater imitation and recall for the behavior of a same-sex model with the result that boys exposed to "stereotyped" behavior by a male and female model manifested and recalled relatively more "masculine" behavior than those exposed to "non-stereotyped" behavior, while the opposite trend obtained for girls. Implications of these three studies for television's contribution to sex-stereotyped behavior are discussed.

Practically since television's inception, people have pondered its influence on social and intellectual development of children. In recent years, concern over

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Requests for reprints should be sent to Dr. L. Zebrowitz McArthur, Department of Psychology, Brandeis University, Waltham, Mass. 02154.

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possible adverse effects has culminated in a five volume report to the Surgeon General's Scientific Advisory Committee on Television and Social Behavior. Violence has captured most of the attention in this report, and investigations of the relationship between violent programming and aggression fill more than three of its volumes with the bulk of the evidence indicating that children will indeed imitate televised violence (see Liebert, 1972). If television can influence the expression of antisocial aggression, it undoubtedly has the capacity to affect other behavior patterns as well. One likely target of influence is sex-role behavior, since social learning theorists (e.g., Mischel, 1966) have argued that observational learning from symbolic models (i.e., films, television, and books) constitutes an important step in the acquisition of sex-typed behavior. Given the growing concern in our society over undesirable consequences of stereotyped sex-roles, it would seem important to investigate television's potential for influencing such behavior. Two kinds of data are needed. First, the degree of sex-stereotyping in the behavior of male and female television models must be assessed; second, it must be determined whether children will model their own behavior after that of same-sex televised models.

Although the report to the Surgeon General on television and social behavior contains little data relevant to effects on sex-role behavior, there is some recent research evidence bearing on this question. Analyses of the portrayal of males and females in the 10 most popular children's commercial television programs (Sternglanz & Serbin, 1974) and in adult television commercials (McArthur & Resko, 1975) have revealed a number of significant sex differences which are consistent with current sex-role stereotypes. While these findings indicate that there is a high degree of sex-stereotyping for televised models, it would seem desirable to have further documentation of such portrayal of the sexes, and one purpose of the present investigation was to provide such evidence. To this end, the portrayal of males and females in children's Saturday morning television programs was examined in Study I. In addition, since approximately 17% of TV air time goes to commercials (Barcus, 1971) with the estimated consequence that by age 17 the average viewer has seen some 350,000 of them, the commercials accompanying these children's programs were analyzed in Study II.

In addition to broadening the sample of programming upon which a conclusion about television's stereotyped portrayal of the sexes can be based, the present investigation sought to determine whether young viewers would actually model their own sex-role behavior after that of like-sex television models. Prior research has revealed that people are more likely to *learn* the behavior of a same-sex model than an opposite-sex one (Hetherington & Frankie, 1967; Maccoby & Wilson, 1957; Maccoby, Wilson, & Burton, 1958). It has also been shown that children are more likely to *imitate* the behavior of

a same-sex model presented "live" (Kobasigawa presented in a storybook (McArthur & Eisen, 1974) present investigation, these findings were extended to "stereotyped" and "non-stereotyped" play following models manifesting such behavior.

## STUDY I

### Method

#### Sample

Twenty-two television programs on the three major networks—NBC, CBS, and ABC—between the hours of 8 a.m. and 12 p.m. on Saturdays in July, 1974, were recorded on videotape. Programs during these times were eliminated—two because they had no major human characters and one because it was not

#### Coding

*Central characters.* Before coding was begun, scenes in which individuals were within each 3-min segment of a program were appearing in more than 5 of the total of 10 scenes in that segment were considered central characters. If the number of characters per half-hour was six or less, all of them were qualified as central characters, the most frequent being coded anyway. If more than six central characters were female, one (or both) of the females was always coded. Characters to be coded were randomly chosen up to

*Procedure.* No more than two central characters were coded at a time, and each program was replayed as

<sup>4</sup>The actual programs recorded were: For Kids Only, Inc., The Addams Family, Emergency Plus Four, Something Else, Star Trek, The Hardy Boys, Bugs Bunny, Yogi's Gang, The Rangers, Goober, The Brady Kids, Hair Bear Bunch, Scooby-Doo\*, My Favorite Martian, I Dream of Jeannie\*, the Pussycats\*. [The four starred programs were also included in Serbin (1974) sample.]

<sup>5</sup>Because pretesting had revealed the frequency of a considerably lower than males, the criteria used to decide which characters to code favored females so as to obtain as broad a sampling of female characters.



a same-sex model presented "live" (Kobasigawa, 1968; Wolf, 1973) or presented in a storybook (McArthur & Eisen, 1976). In Study III of the present investigation, these findings were extended by examining "sex-stereotyped" and "non-stereotyped" play following exposure to *televised* models manifesting such behavior.

## STUDY I

### Method

#### Sample

Twenty-two television programs on the three major networks—CBS, NBC, and ABC—between the hours of 8 a.m. and 12 noon, on three Saturday mornings in July, 1974, were recorded on videotape. Three shows appearing during these times were eliminated—two because they did not contain any major human characters and one because it was not meant for children.<sup>4</sup>

#### Coding

*Central characters.* Before coding was begun, all characters (except in crowds or street scenes in which individuals were not identifiable) appearing within each 3-min segment of a program were listed by *E*. Characters appearing in more than 5 of the total of 10 segments per half hour of programming were considered central characters. If the number of central characters per half-hour was six or less, all of them were coded. If no females qualified as central characters, the most frequently appearing female was coded anyway. If more than six central characters appeared, and two or less were female, one (or both) of the females was always coded.<sup>5</sup> The remaining characters to be coded were randomly chosen up to a total of four.

*Procedure.* No more than two central characters, as defined above, were coded at a time, and each program was replayed as many times as necessary

<sup>4</sup>The actual programs recorded were: For Kids Only, Inch High Private Eye, Lidsville, The Addams Family, Emergency Plus Four, Something Else, Sigmund the Sea Monster, Star Trek, The Hardy Boys, Bugs Bunny, Yogi's Gang, Superfriends, Lassie's Rescue Rangers, Goober, The Brady Kids, Hair Bear Bunch, Sabrina the Teenage Witch\*, Smoby-Doo\*, My Favorite Martian, I Dream of Jeannie\*, Speed Buggy, and Josie and the Pussycats\*. [The four starred programs were also included in the Sternglanz and Gerbin (1974) sample.]

<sup>5</sup>Because pretesting had revealed the frequency of appearance of females to be considerably lower than males, the criteria used to decide which characters were to be coded favored females so as to obtain as broad a sampling as possible of the behavior of female characters.



to code all central characters. Coding was conducted in 3-min segments during which the experimenter took notes concerning the behavior of each of the characters being coded. When a timer indicated that 3-min had elapsed, the tape was stopped and the characters' behaviors were coded according to the categories described below. A particular type of behavior was not coded more than once per segment for any given character. In case of doubt, the 3-min segment was replayed before going on to the next one. To obtain a measure of reliability, a second experimenter simultaneously coded one third of the programs. The average rate of agreement between observers was 80%, based on the following formula: number of agreements/number of agreements + number of disagreements  $\times 100$ .

*Coding categories.* Six major categories of behavior were coded, and each of these was further broken down and defined as follows:

### 1. Activity

- a. *General activity.* Any activity not coded below which involves bodily movement other than talking (e.g., playing games, doing chores, eating, running).
- b. *Problem solving.* Manifesting knowledge of what was taught (verbally or by demonstration). Applying knowledge or skills to solve a specific problem. Exhibiting imagination or creativity by saying, "I have an idea," or some equivalent.
- c. *Cognizance.* Asking a question in an attempt to gain information.
- d. *Teaching.* Speaking authoritatively about a subject, as in the role of a teacher; demonstrating or explaining how to do something.
- e. *Artistic.* Drawing, painting, coloring, singing, dancing, playing a musical instrument, writing poems, stories, etc.
- f. *None.*

### 2. Social behavior

- a. *Aggressive.* (1) physically—pushing, hitting; (2) verbally—teasing, threatening, name-calling, scaring, yelling.
- b. *Autonomous.* (1) initiative—expressing intention to do something, actually beginning or doing something alone; (2) non-autocratic leadership—making decisions or suggestions.
- c. *Concordant.* (1) affiliation—hugging, kissing, calling someone by a pet name such as "dearest," verbally seeking friendship, companionship; (2) compliance—agreeing to a request, command, or statement made by another; (3) nurturance—tending or feeding animals or children, offering comfort, approval, or aid to someone; (4) cooperation—working toward a common end with someone; (5) sharing—giving something to another or dividing and distributing something to others; (6) politeness—showing good manners as, for example, by introducing people to each other; (7) succorance—asking someone for help.

- d. *Discordant.* (1) dominance—giving orders to other refusing to comply with a request or disagreeing accusing or expressing disapproval; (4) competition than others in sports or other activities; (5) self-interest or share; (6) lawbreaking—engaging in theft, deceit.
- e. *None.*

### 3. Emotion

- a. *Happiness.* Laughing, grinning broadly, verbally bliss, joy, etc.
- b. *Fear.* Verbal or physical manifestation of fear such as end, trembling, shaking.
- c. *Anger.* Verbal expression or angry gestures swearing, stamping feet, complaining, unless directed at who was present, in which case "aggression" was coded.
- d. *Liking.* Complimenting, or expressing approval was present, in which case "concordant" was coded.
- e. *None.*

### 4. Physical state

- a. *Positive appearance.* Being beautiful as stated by others.
- b. *Negative body.* Being in pain, hungry, thirsty, self or others.<sup>6</sup>

### 5. Consequences (Coded positive or negative as appropriate)

- a. *Material.* Receiving material rewards such as money or material loss such as loss of money or food, harm.
- b. *Psychological.* Receiving approval or disapproval from another person as a consequence of some action.
- c. *None.*

6. *Role.* Seven roles were coded: familial, friends, occupational, supernatural, and villain.

## RESULTS

### Frequency of Appearance

In the 22 programs viewed, a total of 110 characters were portrayed. Of these, 32% were female and 68% were male. The difference,  $\chi^2(1) = 14.54$ ,  $p < .001$ . Of the 110 characters

<sup>6</sup>Two additional emotions (sadness and bravery) and negative appearance, positive body, and positive and negative consequences were coded. The data for these will not be reported due to their very low frequency, less than 2% of the segments and accounted for less than 1% by each sex.



- d. *Discordant*. (1) dominance—giving orders to others; (2) noncompliance—refusing to comply with a request or disagreeing with a statement; (3) accusing or expressing disapproval; (4) competition—striving to do better than others in sports or other activities; (5) selfishness—refusing to give or share; (6) lawbreaking—engaging in theft, deceit, trickery.

e. *None*.

#### Emotion

- a. *Happiness*. Laughing, grinning broadly, verbally expressing happiness, bliss, joy, etc.
- b. *Fear*. Verbal or physical manifestation of fear such as hair standing on end, trembling, shaking.
- c. *Anger*. Verbal expression or angry gestures such as fist shaking, swearing, stamping feet, complaining, unless directed at another person who was present, in which case "aggression" was coded.
- d. *Liking*. Complimenting, or expressing approval of someone unless s/he was present, in which case "concordant" was coded.

e. *None*.

#### Physical state

- a. *Positive appearance*. Being beautiful as stated by self or others.
- b. *Negative body*. Being in pain, hungry, thirsty, tired, weak, as stated by self or others.<sup>6</sup>

#### Consequences (Coded positive or negative as appropriate).

- a. *Material*. Receiving material rewards such as money, food, etc. or material loss such as loss of money or food, injury and other bodily harm.
- b. *Psychological*. Receiving approval or disapproval from (1) oneself, or (2) from another person as a consequence of some action or behavior.

c. *None*.

6. *Role*. Seven roles were coded: familial, friendship, hero, homemaker, occupational, supernatural, and villain.

## RESULTS

### Frequency of Appearance

In the 22 programs viewed, a total of 110 central characters were portrayed. Of these, 32% were female and 68% male, a highly significant difference,  $\chi^2(1) = 14.54$ ,  $p < .001$ . Of the 110 central characters tallied, a

<sup>6</sup>Two additional emotions (sadness and bravery) and four additional physical states (negative appearance, positive body, and positive and negative intellect) were also coded. The data for these will not be reported due to their very low frequency—each occurred in less than 2% of the segments and accounted for less than 1% of the behaviors manifested by each sex.



total of 92 were coded (including 2 females who did not qualify as central characters, but were included because they were the most central females appearing in two of the programs). Thirty-five percent of these were female and 65% were male. These percentages for Saturday morning television in 1974 are comparable to those found by Sternglanz and Serbin (1974) for the 10 most popular children's programs in 1971-72.

### Behavior

Based on the results of content analyses of other children's media (Child, Potter, & Levine, 1946; Sternglanz & Serbin, 1974; Weitzman, Eifler, Hokada, & Ross, 1972; Women on Words and Images, 1972), it was predicted that boys would manifest more problem solving, more activity, more autonomy, and more aggression than girls, and girls would manifest more concordant social behaviors, more happiness, and more fear than boys. Although no clearcut predictions could be derived from existing research for the remaining behaviors, their frequency of occurrence was great enough to warrant inclusion for exploratory purposes.

Two measures were employed to test the foregoing predictions. First, following the same procedure used by Sternglanz and Serbin (1974), rate of each type of behavior was computed according to the following formula for each character:

$$\frac{\text{number of segments in which character emitted the behavior}}{\text{number of segments in which character appeared}}$$

The rates of behavior thus represented the proportion of total appearance time of a character in which s/he engaged in a particular behavior. For example, if a character appeared in 10 segments of a program and engaged in artistic activity in 5 of those segments, the rate of behavior was 50% for that activity. The results for this measure are reported in Table 1.

An overall Hotellings  $T^2$  test performed on the rate measure proved marginally significant,  $T^2 = 29.5$ ,  $F(15, 76) = 1.66$ ,  $p = .08$ , and planned  $t$  tests were performed to test the predictions regarding sex differences in the rate of individual behaviors. As predicted, males more often than females displayed problem solving, activity, and autonomy, all  $ps < .03$ . In addition, there was a nonpredicted tendency for males to be more likely than females to manifest discordant behavior and a negative bodily state, both  $ps < .02$ , and to receive consequences of any kind (except approval from others), all  $ps < .07$ . Contrary to prediction, boys did not manifest significantly higher rates of aggression than girls, although the means were in the right direction,  $p < .15$ . A more disconcerting failure of prediction was that females did not

TABLE 1  
MEAN PERCENTAGE OF SEGMENTS OF APPEARANCE IN WHICH MALES AND FEMALES  
DISPLAYED EACH BEHAVIOR

	Activity		Emotion		Males	Females	<i>t</i>	<i>p</i>
	Males	Females	Males	Females				
General activity	46.7	33.4	Happiness	19.0	15.6	< 1		
Problem solving	6.8	2.9	Fear	5.4	3.0	1.18	.24	
Cognizance	30.6	36.4	Anger	4.3	4.5	< 1		
Teach	3.8	3.6	Liking	2.9	3.4	< 1		
Artistic	8.2	10.1						

TABLE I  
MEAN PERCENTAGE OF SEGMENTS OF APPEARANCE IN WHICH MALES AND FEMALES  
DISPLAYED EACH BEHAVIOR

	Males	Females	<i>t</i>	<i>p</i>	Males	Females	<i>t</i>	<i>p</i>
Activity								
General activity	46.7	33.4	2.18	.03	19.0	15.6	< 1	
Problem solving	6.8	2.9	2.46	.02	5.4	3.0	1.18	.24
Cognizance	30.6	36.4	1.25	.22	4.3	4.5	< 1	
Teach	3.8	3.6	< 1		2.9	3.4	< 1	
Artistic	8.2	10.1	< 1					
Social behavior								
Aggressive	11.5	5.6	1.47	.14				
Autonomous	36.6	24.5	2.70	.01	0.3	2.2	1.30	.20
Concordant	42.5	44.8	< 1					
Discordant	32.4	22.3	2.28	.02	10.2	3.5	2.50	.01
Physical state								
Positive appearance								
Negative body								

Note. - All *t* values are computed using separate variances, since the variances for the two groups were often unequal; all *p* values are based on two-tailed tests; *df* = 90; *N* = 60 males and 32 females.



have a higher rate than males for any of the coded behaviors. This suggests that the significant sex differences observed for this rate measure may be more indicative of a *generally higher rate* of behavior among males than of *differences* in the kinds of behaviors most available in the repertoires of male and female characters. This possibility is supported by the finding that the mean rate of behavior was significantly higher for males than for females,  $t(90) = 2.49, p < .02$ . Furthermore, females tended to be more likely than males to be coded as manifesting no activity, no social behavior, or no emotional behavior,  $t(90) = 1.66, p = .10$ .

In view of these findings, a measure of sex differences in behavior which corrects for differences in the overall rate of behavior was constructed. The proportion of all of a character's behaviors which was accounted for by a particular category was computed according to the following formula:

$$\frac{\text{number of instances in which character emitted the behavior}}{\text{total number of behaviors performed by character}}$$

For example, if a character performed a total of 5 artistic activities and a total of 20 behaviors altogether, the proportion of artistic activity was .25. Similarly, a proportion for consequences was computed using the number of activities emitted by a character as the denominator, and the number of each type of consequence received as the numerator. This measure then indicates the proportion of each sex' behavior which is general activity, problem solving, etc. The results are reported in Table 2.

An overall Hotellings  $T^2$  test performed on the proportion measure was marginally significant,  $T^2 = 29.5, F(15, 76) = 1.66, p = .08$ , and planned  $t$  tests were performed to test the predictions regarding sex differences in individual behavior. In the realm of social behavior, all of the sex differences were in the predicted direction. There was a higher proportion of aggressive behavior among males than females,  $t(90) = 1.89, p = .06$ , and there was a slight tendency for males to manifest proportionately more autonomy than females,  $t(90) = 1.43, p = .16$ . While aggressive and autonomous social behaviors tended to be more common for males than females, concordant social behaviors showed the predicted tendency to be more common among females,  $t(90) = 2.12, p = .04$ . It should be noted that although this effect was predicted on the basis of the pattern of male-female behavior differences observed in other analyses of children's media, earlier researchers have not employed a measure which actually yielded *more* concordant behaviors by females than by males. For example, Sternglanz and Serbin (1974) found no significant sex differences in the rate of nurturance, a behavior which comprised a large portion of the "concordant" behavior category in the present study. Their failure to find a sex difference in nurturance was

TABLE 2  
MEAN PERCENTAGE OF ALL BEHAVIOR WHICH OCCURS IN EACH CATEGORY FOR  
MALES AND FEMALES

	Males	Females	t	p	Males	Females	t	p
Activity								
General activity	16.2	13.2	1.32	.19	6.8	7.3	< 1	
Problem solving	2.5	1.2	1.82	.07	1.8	1.5	< 1	
Cognizance	12.8	18.9	1.94	.06	1.9	1.7	< 1	
Teach	1.4	2.0	< 1		1.0	1.1	< 1	
Artistic	3.1	4.7	1.24	.22				
Emotion								
Happiness								
Fear								
Anger								
Liking								
Disciplinary state								



TABLE 2  
MEAN PERCENTAGE OF ALL BEHAVIOR WHICH OCCURS IN EACH CATEGORY FOR  
MALES AND FEMALES

	Males	Females	<i>t</i>	<i>p</i>	Males	Females	<i>t</i>	<i>p</i>
Activity								
General activity	16.2	13.2	1.32	.19	6.8	7.3	< 1	
Problem solving	2.5	1.2	1.82	.07	1.8	1.5	< 1	
Cognizance	12.8	18.9	1.94	.06	1.9	1.7	< 1	
Teach	1.4	2.0	< 1		1.0	1.1	< 1	
Artistic	3.1	4.7	1.24	.22				
Social behavior								
Aggressive	3.5	1.5	1.89	.06				
Autonomous	13.5	11.0	1.43	.16	0.1	1.1	1.60	.12
Concordant	17.3	20.8	2.12	.04	3.7	1.6	1.83	.07
Discordant	11.4	10.0	< 1					
Emotion								
Happiness								
Fear								
Anger								
Liking								
Physical state								
Positive appearance								
Negative body								

Note. — All *t* values are computed using separate variances, since the variances for the two groups were often unequal; all *p* values are based on two-tailed tests; *df* = 90; *N* = 60 males and 32 females.



undoubtedly due to the fact that their measure did not partial out sex differences in the overall rate of behavior. Indeed, in the present study, sex differences in concordant social behavior were not obtained when Sternglanz and Serbin's rate-of-behavior measure was used.

While males manifested higher rates of behavior in the "general activity" category than females did, the sexes did not differ significantly in the proportion of total behavior which fell into this category, although the means were in the predicted direction,  $t(90) = 1.32, p = .19$ . The prediction that the intellectual activity of problem solving would comprise a larger proportion of males' than females' behavior was supported,  $t(90) = 1.82, p = .07$ , and there was also a tendency for cognizance to be a more common form of intellectual activity for females than it was for males,  $t(90) = 1.94, p = .06$ . Although this latter trend was not explicitly predicted, it is certainly consistent with sex-role stereotypes to find the females more manifestly in need of information than the males.

In the realm of emotional behavior, the expected sex differences in happiness and fear were not obtained. Although no explicit predictions had been derived from prior research regarding sex differences in physical state, two suggestive trends occurred. A negative bodily condition was slightly more common among males than females,  $t(90) = 1.83, p = .07$ , while there was a slight tendency for females to be more likely than males to manifest a positive appearance,  $t(90) = 1.60, p = .12$ .

Analyses of the consequences which characters received yielded one marginally significant sex difference reflecting a tendency for the behavior of males to be more likely than that of females to result in positive material consequences,  $t(90) = 1.66, p = .10$ . Although none of the other differences for type of consequences received approach significance, combining all consequences revealed that a greater proportion of males' than females' behavior resulted in a consequence of any kind,  $t(90) = 1.94, p = .06$ .

The behavioral differences of male and female central characters may be summarized as follows: Males manifested a higher rate of behavior overall than females did, and the particular behaviors which they displayed significantly more frequently were, as predicted, problem solving, activity, and autonomy. While there was only a slight tendency for males to manifest a higher rate of aggression than females, aggression did comprise a higher proportion of the total behaviors performed by males than by females, as did problem solving and, to a slight extent, autonomy and activity. Females did not manifest a higher rate of any individual behavior than males did, but concordant social behavior and cognizance represented a significantly higher proportion of females' than males' behavior. Since this last effect was not explicitly predicted, it should be viewed only as suggestive, as should the slight tendency for positive appearance to be more common among females than males, the

tendency for discordant behavior and negative behavior among males, and the tendency for the behavior of females to produce some consequences.

### Roles

A significant  $2 \times 7$  (sex  $\times$  role)  $\chi^2$  analysis of females was shown in different roles.  $\chi^2(7) = 85.0$ , contrasting each role with all other roles combined more often than males presented in terms of a number of people, i.e., in a "familial" role,  $\chi^2(1) = 18.98, p < .001$ , in a "homemal" role,  $\chi^2(1) = 8.08, p < .01$ , and in a "villain" role,  $\chi^2(1) = 27.58, p < .001$ , or as villains,  $\chi^2(1) = 27.58, p < .001$ .

## STUDY II

### Method

#### Sample

Television commercials for the programs coded on videotape. The commercials between each hour were recorded because the hour-long tapes had to be coded. Only those commercials in which there was a male character were retained in the final sample. Commercials containing cartoon characters were included, but those containing figures who were not clearly human (e.g., martial arts figures who were not clearly human) and 315 central characters, approximately equal in number to the peripheral characters, were coded.

#### Coding

*Central characters.* Up to two central adults, two voices were coded for each commercial. A central character who had a speaking role or played a more than this number were present, those appearing were chosen.

*Procedure.* Notes were taken during the coding of central characters and other aspects of the commercial. The tape was stopped after each commercial was coded according to the categories described below.



tendency for discordant behavior and negative body to be more common among males, and the tendency for the behavior of males to be more likely to produce some consequences.

roles

A significant  $2 \times 7$  (sex  $\times$  role)  $\chi^2$  analysis indicated that males and females were shown in different roles,  $\chi^2(7) = 85.00, p < .001$ .  $\chi^2$  analyses contrasting each role with all other roles combined revealed that females were more often than males presented in terms of a nurturant relation to other people, i.e., in a "familial" role,  $\chi^2(1) = 18.98, p < .001$ , in a "friendship" role,  $\chi^2(1) = 8.08, p < .01$ , and in a "homemaker" role,  $\chi^2(1) = 12.46, p < .001$ . Males, on the other hand, were more often cast in an occupational role,  $\chi^2(1) = 27.58, p < .001$ , or as villains,  $\chi^2(1) = 26.94, p < .001$ .

## STUDY II

### Method

sample

Television commercials for the programs coded in Study I were recorded on videotape. The commercials between each hour of programming were not recorded because the hour-long tapes had to be changed during this time. Only those commercials in which there was a male or female central character were retained in the final sample. Commercials containing only humanoid cartoon characters were included, but those containing only animals or other figures who were not clearly human (e.g., martians) or whose sex was not clearly identifiable were omitted from the sample. A total of 161 commercials and 315 central characters, approximately equally divided among the networks, were coded.

coding

*Central characters.* Up to two central adults, two central children, and two voices were coded for each commercial. A central character was defined as any human character who had a speaking role or prominent visual exposure. If more than this number were present, those appearing most central were chosen.

*Procedure.* Notes were taken during the commercial, at which time the central characters and other aspects of the commercial to be coded were noted. The tape was stopped after each commercial, and the information was coded according to the categories described below. In case of doubt, the



commercial was replayed. To obtain a measure of reliability, a second experimenter simultaneously coded one third of the commercials. The average rate of agreement between observers was 90%, based on the following formula: number of agreements/number of agreements + number of disagreements  $\times 100$ .

*Coding categories.* Six major categories were utilized in coding of central characters:

1. *Type of product advertised.* The types of products coded were cereals, sweets, other food, toys, health products, and other.

2. *Basis for the credibility of the character.* A character was categorized as a *product-user* if s/he was depicted primarily as a user of the product being advertised, as an *authority* if depicted as an expert concerning the product, and as *none* if the character was depicted as neither user nor authority.

3. *Role of the character.* Characters were also categorized according to the following everyday roles: familial (including parent, spouse, and homemaker), occupational, narrator, and other.

4. *Arguments given by the character.* A character was categorized as giving an *argument* for buying the product if opinions, personal testimonials, or other evidence was presented in support of it. Otherwise, *no argument* was coded.

5. *Rewards offered to or received by the character.* In coding these rewards, a distinction was made between product users and authorities: For product users, the rewards were those *received* by them; for authorities, the rewards were those *offered* by them. Four main categories of rewards were coded: (a) *self-enhancement* if the reward involved psychological improvement, attractiveness, cleanliness, or health; (b) *practical* if the reward involved enjoyment, saving time, or saving money; (c) *other* if neither of the foregoing categories fit; and (d) *none* if no reward was offered or received.

6. *Location of the character.* Three locales were coded: *indoors*, *outdoors*, and, if the setting was not clearly identifiable, *other*.

## RESULTS

### *Portrayal of the Sexes*

In the 161 commercials included in the analysis, a total of 315 central figures were coded. Of these, 80% were male and only 20% female, a highly significant difference,  $\chi^2(1) = 115.8, p < .001$ . This sex difference was somewhat larger for adult central figures and for voices (85% were men and 15% were women) than for children (72% were boys and 28% were girls), but

it was highly significant for both groups,  $\chi^2(1) : ps < .001$ . It is interesting to note that the difference in the appearance of males and of females in these commercials was more marked than the significant difference observed by Resko (1975) in adult commercials where 57% of the central figures were men and 43% were women.

Not only did more males than females appear in these commercials but in addition a significant  $2 \times 4$  (sex  $\times$  role)  $\chi^2$  analysis revealed that males and females who did appear were cast in different roles,  $p < .005$ . As had been observed by McArthur and Resko (1975) in adult commercials, males were more likely than females to be defined independently of others—other—while females were more often portrayed as defined in relation to others—e.g., parent, spouse,  $\chi^2 = 4.94, p < .05$ .

Another difference between male and female characters was revealed in a  $2 \times 3$  analysis of the basis for the character's expertise,  $p < .005$ . Fifty-five percent of the males compared to 33% of the females were depicted as authorities, while 66% of the males were depicted as product-users. (Three percent of the females were coded as neither authorities nor product-users.) These findings replicate McArthur and Resko's (1975) findings for the adult commercials. In addition, there was a significant sex difference in these children's commercials in the character's expertise—whether or not an argument was given—by giving some type of argument in favor of using the product,  $\chi^2 = 4.94, p < .05$ .

A  $2 \times 3$  (sex  $\times$  location)  $\chi^2$  analysis revealed a significant difference in the character's location,  $\chi^2(2) = 3.85, p < .05$ . Consistent with Resko's (1975) finding that females were more likely to appear at home, more females than males appeared indoors (30% vs. 29%), while more males than females appeared outdoors (30% vs. 18%) and approximately equal numbers of males and females appeared outdoors (41% vs. 39%).

The  $2 \times 6$  (sex  $\times$  product type)  $\chi^2$  analysis revealed a significant difference in the character's expertise,  $\chi^2 = 1.70, p > .50$ , and male and female authorities were more likely to be defined in relation to others—other—while females were more often portrayed as defined in relation to others—e.g., parent, spouse,  $\chi^2 = 4.77, p < .05$ . However, a marginally significant sex difference was observed in the character's expertise—whether or not an argument was given—by giving some type of argument in favor of using the product,  $\chi^2(2) = 4.77, p < .05$ .

<sup>7</sup>This  $\chi^2$  has two rather than three degrees of freedom because of the category "other reward" for product users.



it was highly significant for both groups,  $\chi^2(1) = 99.75$  and  $20.94$ , both  $p < .001$ . It is interesting to note that the difference in frequency of appearance of males and of females in these children's commercials was even more marked than the significant difference observed by McArthur and Resko (1975) in adult commercials where 57% of the central characters were men and 43% were women.

Not only did more males than females appear in children's commercials, but in addition a significant  $2 \times 4$  (sex  $\times$  role)  $\chi^2$  analysis revealed that those males and females who did appear were cast in different roles,  $\chi^2(3) = 10.30$ ,  $p < .005$ . As had been observed by McArthur and Resko (1975) for adult commercials, males were more likely than females to be portrayed in a role which defined them independently of others—occupational, narrator, or other—while females were more often portrayed in the familial role which defined them in relation to others—e.g., parent, spouse, or homemaker,  $\chi^2(1) = 4.94$ ,  $p < .05$ .

Another difference between male and female central characters was revealed in a  $2 \times 3$  analysis of the basis for their credibility,  $\chi^2(2) = 9.91$ ,  $p < .005$ . Fifty-five percent of the males compared with only 32% of the females were depicted as authorities, while 66% of the females and 42% of the males were depicted as product-users. (Three percent of the males and 2% of the females were coded as neither authorities nor product-users.) These findings replicate McArthur and Resko's (1975) data, although the sex difference for this measure of a character's expertise was not as large as it had been for the adult commercials. In addition, another measure of the character's expertise—whether or not an argument is given—revealed no significant sex difference in these children's commercials, whereas in the adult commercials males were more likely than females to manifest knowledgeability by giving some type of argument in favor of using the advertised product.

A  $2 \times 3$  (sex  $\times$  location)  $\chi^2$  analysis revealed a significant sex difference in the character's location,  $\chi^2(2) = 3.85$ ,  $p < .05$ . Consistent with McArthur and Resko's (1975) finding that females were more likely to be depicted in the home, more females than males appeared indoors in the present sample (43% vs. 29%), while more males than females appeared in an unidentifiable location (30% vs. 18%) and approximately equal numbers of males and females appeared outdoors (41% vs. 39%).

The  $2 \times 6$  (sex  $\times$  product type)  $\chi^2$  analysis was not significant,  $\chi^2(5) = 1.70$ ,  $p > .50$ , and male and female authorities did not differ in the rewards which they offered for using the advertised product,  $\chi^2(3) = 1.70$ ,  $p > .50$ . However, a marginally significant sex difference was obtained for the rewards promised to product-users,  $\chi^2(2) = 4.77$ ,  $p < .10^7$ , and a one degree of

<sup>7</sup>This  $\chi^2$  has two rather than three degrees of freedom because there are no entries in the category "other reward" for product users.



freedom breakdown of the data revealed that females were somewhat more likely than males to be promised a reward of any kind: 13% of the males and only 2% of the females were not promised a reward for using the product advertised,  $\chi^2(1) = 3.52, p < .10$ .

### STUDY III

The purpose of this study was to examine the effects on children's behavior of exposure to sex-stereotyped vs. nonstereotyped behavior by TV models. Preschoolers were exposed to videotape vignettes which depicted an adult male and female model engaging in a number of activities. It was expected that children would manifest greater preference, imitation, and recall for the behavior of a same-sex model. More specifically, it was predicted that girls exposed to a "stereotyped" vignette would manifest, recall, and prefer more "feminine" and less "masculine" activities than those exposed to a nonstereotyped or "reversal" vignette, whereas the opposite would hold true for boys.

### Method

#### Subjects

Twenty male and 20 female nursery school children from 2 predominantly upper-middle class nursery schools in the Boston area were randomly assigned to one of two experimental videotape conditions (stereotype or reversal) and one of two testers (male or female) to form a  $2 \times 2 \times 2$  (sex of subject  $\times$  videotape  $\times$  sex of tester) design. Subjects ranged in age from 35 to 66 months with a mean age of 49.12 months. There were no significant differences in the ages of subjects assigned to each of the experimental conditions.<sup>8</sup>

<sup>8</sup>Twenty additional subjects were exposed to a videotape vignette which merely depicted the props utilized in the stereotyped and reversal conditions. Although the behavior of these subjects was originally intended to serve as a "baseline" against which to compare the behavior of stereotype and reversal subjects, it is questionable whether "no model" represents an appropriate neutral point on a "same sex-opposite sex model" continuum. A neuter model, such as the "cat" employed by Bandura, Ross, and Ross (1963), would probably have provided better baseline data. In any event, since models of some sort—be they male, female, or neuter—virtually always appear on TV, the behavior of children exposed to no model is largely irrelevant to the question of what effect changes in the sex-stereotyped fare on television might have on its viewers. Consequently, the data from these no model subjects will not be reported here.

#### Independent Variables

All subjects were run individually by a female experimenter. Each child was shown them a videotape vignette created specifically for the study. The vignettes were of two types: *Stereotype vignette*. The 9-min-long stereotyped vignette depicted a male and female, dressed in slacks, who interacted after introducing themselves to the audience. The male and female were performed in succession in three vignettes, and were representative of those which were used in Studies I and II. Assignment of nurturance

TABLE 3  
ACTIVITIES OF THE MALE AND FEMALE MODELS IN THE  
STEREOTYPE VIGNETTE

Female model	
(1) <i>Nurturance:</i> Picks up a plastic inflated dolphin, approximately 3 ft. tall, which is lying on its side on the floor, and stands it upright, saying, "Poor Flip; did you slip?", and then gives the dolphin a hug and a kiss.	(3)
(2) <i>Domesticity:</i> Brushes dirt off of the front of the dolphin, and then mops dirt off the floor with a mop, saying, "You got dirty on the ground; let's mop up all around."	(6)
(5) <i>Artistic behavior:</i> Plays with a musical triangle, saying nothing.	(8)
(7) <i>Artistic behavior:</i> Draws a picture of a hat on a table top drawing board, saying, "I hope my teacher likes this hat."	(10)

Note.—The number in parentheses to the left of occurrence in the vignette.



*Independent Variables*

All subjects were run individually by a female experimenter who showed them a videotape vignette created specifically for this research.

*Stereotype vignette.* The 9-min-long stereotype vignette depicted an adult male and female, dressed in slacks, who interacted with a number of toys after introducing themselves to the audience. The behaviors modeled by the male and female were performed in succession in the order indicated in Table 3, and were representative of those which were found for members of their sex in Studies I and II. Assignment of nurturant social behavior to the female

TABLE 3

## ACTIVITIES OF THE MALE AND FEMALE MODEL IN THE STEREOTYPE VIGNETTE

Female model	Male model
(1) <i>Nurturance:</i> Picks up a plastic inflated dolphin, approximately 3 ft. tall, which is lying on its side on the floor, and stands it upright, saying, "Poor Flip; did you slip?", and then gives the dolphin a hug and a kiss.	(3) <i>Bravery:</i> Walks along a narrow board elevated from the floor about 6 inches, saying, "Look at me wave; I'm so brave."
(2) <i>Domesticity:</i> Brushes dirt off of the front of the dolphin, and then mops dirt off the floor with a mop, saying, "You got dirty on the ground; let's mop up all around."	(4) <i>Leadership:</i> Takes the dolphin, by the flippers, places it on the narrow board, and walks it along, saying, "Come on now, I'll show you how."
(5) <i>Artistic behavior:</i> Plays with a musical triangle, saying nothing.	(6) <i>Problem solving:</i> Plays with a puzzle, saying nothing.
(7) <i>Artistic behavior:</i> Draws a picture of a hat on a table top drawing board, saying, "I hope my teacher likes this hat."	(8) <i>Problem solving:</i> Puts various shaped forms through appropriately shaped holes in a box, saying, "I can put these pieces in; if I try I know I 'kin'."

*Note.*—The number in parentheses to the left of a behavior indicates its order of occurrence in the vignette.



and leadership social behavior to the male in this stereotype vignette was supported by females' higher percentage of "concordant" social behavior and males' higher rate of "autonomous" social behavior in Study I. Similarly, assignment of problem solving activities to the male and artistic activities to the female was supported by the higher incidence of "problem solving" activities for males in Study I, and the somewhat higher percentage of "artistic" activities for females. Assignment of bravery to the male was only slightly supported by Study I, which revealed a small, nonsignificant tendency for the role of hero and the emotion of bravery to be more common for males than for females. However, assignment of domesticity to the female found strong support in both Studies I and II which revealed a higher percentage of female than male homemakers.

*Reversal videotape vignette.* The reversal vignette was identical to the stereotype vignette in every respect except that all of the behaviors manifested by a model of one sex in the stereotyped vignette were performed by the opposite sex character in the reversal vignette.

### Dependent Variables

The dependent variable measures were obtained by a second and third experimenter who were blind to the independent variable manipulations. Subjects' *overt behavior* toward the toys which had been played with by the male and female models, their *recall* of interactions with the toys by each model, and their *verbal preference* for these toys were assessed. Both the second and the third experimenters—a male and a female—observed the subject through a one-way mirror while s/he interacted with the toys and coded the behavior. For half of the subjects, a male experimenter obtained the recall data while a female experimenter obtained the preference data, and for half the subjects the sex of the experimenters collecting these data were reversed.

*Overt behavior.* Following the videotape vignette, the first experimenter told subjects that she had some toys for them to play with while she finished up some work, and subjects were shown into an adjoining room where the toys depicted in the videotape vignette were displayed. The experimenter made no mention of the fact that these were the same toys that the subject had just seen on television, although subjects themselves occasionally commented on this. The toys were arranged so that one played with by the male model was always adjacent to one played with by the female model. In addition to the experimental toys, approximately half a dozen children's books were displayed. Subjects were left in the room for 10 min. during which time the second and the third experimenters, viewing through a one-way mirror, recorded their behavior at 6-sec. intervals which were signalled by a

timer.<sup>9</sup> The information recorded was the sex of the subject who was closest to, and the nature of the toy—imitative or nonimitative. The interrater reliability was an average percentage of agreement for the 100 items which was .96 for location, and .92 for the nature of

*Recall.* Recall of the videotape vignette was assessed by the experimenter who gave subjects the following in-

Hi. I need your help. Remember the TV show you saw last night where you saw a man and a woman playing with some toys. I would like to know which one of the toys the woman played with. Now here is a picture of the woman you saw on TV and here is a picture of the woman you saw on TV. Here is a polaroid picture of each on a small table in front of you. I will show you some pictures of the toys you saw so you can tell me which one the man played with and which toys the woman played with.

Polaroid pictures of all the toys depicted in the videotape vignette were shown in random order, and subjects were instructed to point to the picture of the person who played with the toy. If the subject was actually ignorant of the correct response, and after the experimenter said, "Oh, so that's who played with the —", the subject was instructed by verbalizations by the models, the subject was instructed to say s/he played with it and was given two options—

*Verbal preference.* After the recall data were obtained, the experimenter entered and assessed the subject's verbal preference for the activities engaged in by each model by presenting the subject with a picture and instructing the subject to place a polaroid picture of the toy s/he likes to play with the most. One toy in the picture was played with by the male model and one toy had been played with by the female model. Each of the model's behaviors was paired with a picture of the toy, with the exception of "hugging" and "leading" which were not paired with any other. A final pair of pictures depicted the subject and the experimenter; the subject was asked to indicate whom s/he liked more.

<sup>9</sup>A number of subjects insisted that the first experimenter who they played with the toys. To equalize any effects of the experimenter's presence, subjects who randomly stayed in the room with an equal number of subjects who did not stay in the room. In all cases, the experimenter's presence was as unobtrusive as possible. The experimenter was busy with paper work during the time the subject was in the room where she busied herself with paper work and verbal interaction with the subject.



timer.<sup>9</sup> The information recorded was the subject's location—the toy the subject was closest to, and the nature of the subject's interaction with the toy—imitative or nonimitative. The interrater reliabilities were very high: The average percentage of agreement for the 100 intervals coded for each subject was .96 for location, and .92 for the nature of the interaction with the toy.

*Recall.* Recall of the videotape vignette was assessed by the second experimenter who gave subjects the following instructions:

Hi. I need your help. Remember the TV show you saw a little while ago? Did you see a man and a woman playing with some toys in that movie? Well, I didn't get to see that movie and I would like to know which toys the man played with and which ones the woman played with. Now here is a picture of the man you saw on TV and here is a picture of the woman you saw. (The experimenter placed a polaroid picture of each on a small table in front of the subject.) I'm going to show you some pictures of the toys you saw so that you can tell me which toys the man played with and which toys the woman played with.

Polaroid pictures of all the toys depicted in the vignette were presented in random order, and subjects were instructed to put the picture of the toy on top of a picture of the person who played with it. The experimenter was actually ignorant of the correct response, and after each of the subject's choices said, "Oh, so that's who played with the \_\_\_\_\_;" for toys accompanied by verbalizations by the models, the subject was asked what the person said when s/he played with it and was given two options—one correct and one incorrect.

*Verbal preference.* After the recall data had been collected, the third experimenter entered and assessed the subject's relative preference for the activities engaged in by each model by presenting pairs of pictures of the toys and instructing the subject to place a polaroid picture of her/himself on the toy s/he likes to play with the most. One toy in each pair had been played with by the male model and one toy had been played with by the female model. Each of the model's behaviors was paired with each of the other's with the exception of "hugging" and "leading" which were paired only with each other. A final pair of pictures depicted the male and female models, and the subject was asked to indicate whom s/he liked best.

<sup>9</sup> A number of subjects insisted that the first experimenter remain in the room while they played with the toys. To equalize any effects of her presence across conditions, she randomly stayed in the room with an equal number of subjects in each condition. In all cases, the experimenter's presence was as unobtrusive as possible. She sat in a far corner of the room where she busied herself with paper work, and avoided both nonverbal and verbal interaction with the subject.



## RESULTS

*Overt Behavior*

For purposes of analysis, the four activities engaged in by the female model in the stereotype vignette and by the male model in the reversal vignette were labeled "feminine," while the four activities engaged in by male model in the stereotype vignette and by the female model in the reversal vignette were labeled "masculine."

*Number of feminine vs. masculine activities.* A  $2 \times 2$  (subject sex  $\times$  videotape) analysis of variance was performed on the difference between the number of "feminine" and the number of "masculine" activities which subjects performed. This analysis was performed rather than separate analyses on the absolute number of "feminine" and "masculine" activities, because the latter may show effects which merely reflect the fact that one group of subjects performed more activities of any sort than another group. The difference score, on the other hand, reflects relative preference for "feminine" activities over "masculine" ones. (A positive value represents more "feminine" than "masculine" activities, while a negative value represents the reverse.) A marginally significant sex  $\times$  videotape interaction supported the prediction that females would perform relatively more feminine activities in the stereotype than the reversal condition, while the opposite would hold true for males,  $F(1, 36) = 3.69, p = .07$ . Within-sex comparisons of subjects exposed to each vignette revealed that males manifested fewer "feminine" than "masculine" behaviors following the stereotype vignette (-.40) and more "feminine" than "masculine" behaviors following the reversal vignette (+.60), a difference which was statistically significant,  $t(18) = 2.09, p < .05$ . Although females manifested the predicted tendency toward more "feminine" activities following the stereotype vignette (+.10) and more "masculine" activities following the reversal vignette (-.20), this difference was not significant,  $t < 1$ . Thus, boys showed a stronger tendency than girls to model their behavior after a same-sex model.

*Location and duration imitative behavior.* A  $2 \times 2$  (subject sex  $\times$  videotape) analysis of variance performed on the duration of time subjects spent located near masculine, feminine, and neutral activities and on the duration of time subjects spent in direct imitation of masculine and feminine activities revealed no significant effects, all  $ps > .20$ .<sup>10</sup>

<sup>10</sup>The lack of effect for these measures probably reflects the design of this particular study rather than any general irrelevancy of such measures. The choice of toys and their arrangement were designed to encourage subjects to move from toy to toy so that they would have the time to engage in all of the activities which they found attractive. Consequently, the duration of time spent in certain activities was probably not as good an index of how much subjects liked them as was whether or not they were performed at all.

*Recall*

A  $2 \times 2 \times 2$  (subject sex  $\times$  videotape  $\times$  tester sex) analysis of variance was performed on the difference between the number of "feminine" activities and the number of errors in recall of "feminine" activities. (A positive value represents more recall of "feminine" activities, while a negative value represents more recall of "masculine" activities, while a negative value represents more recall of "masculine" activities.) A positive value represents more recall of "feminine" activities, while a negative value represents more recall of "masculine" activities. Analysis of variance was performed rather than separate analyses of errors in recall about "feminine" and "masculine" activities. A significant sex  $\times$  videotape interaction supported the prediction that subjects would recall relatively more errors recalling "feminine" activities in the stereotype condition, while the opposite would hold true for males,  $F(1, 36) = 4.53, p < .05$ . Within-sex comparisons revealed a significant tendency for females who tended to make relatively more errors in recall of "masculine" than "feminine" activities in the reversal condition,  $t(17) = 1.72, p < .10$ . Males in the reversal condition did not differ significantly in errors in recall of "masculine" than "feminine" activities in the reversal condition,  $t(17) = 1.72, p < .10$ . Males in the reversal condition did not differ significantly in errors in recall of "masculine" than "feminine" activities in the reversal condition, although the means were in the expected direction (males and +0.10 for reversals). Comparisons within sex revealed a significant tendency for stereotype males to make more errors in recall about "feminine" activities than about "masculine" activities,  $t(17) = 1.24, p > .20$ .

In addition to the above analysis of the recall of "feminine" activities (sex  $\times$  videotape  $\times$  tester sex) analysis of variance was performed on the recall errors made by subjects. This analysis yielded a significant sex  $\times$  videotape interaction for subject sex, reflecting more recall errors by males than by females,  $F(1, 30) = 5.36, p < .05$ . Furthermore, a significant interaction revealed that subjects made more recall errors about "feminine" activities than about "masculine" activities in the reversal condition by an opposite-sex than by a same-sex experimenter. Comparisons within subject groups revealed that subjects made more recall errors about "feminine" activities than about "masculine" activities for males who made an average of 5 errors when tested by a male,  $t(17) = 2.47, p < .05$ . On the other hand, subjects made only slightly more errors when tested by a female (1.6),  $t < 1$ . In addition, comparisons within subject groups revealed that the overall tendency for males to make more recall errors about "feminine" than about "masculine" activities was significant given a female tester,  $t(17) = 3.0, p < .05$ . This unexpected finding suggests that preschool boys when tested by a woman suggest a disadvantage vis-à-vis the girls.



## Recall

A  $2 \times 2 \times 2$  (subject sex  $\times$  videotape  $\times$  tester sex) analysis of variance was performed on the difference between the number of errors in recall about the "feminine" activities and the number of errors in recall about the "masculine" activities. (A positive value represents more recall errors about "feminine" than "masculine" activities, while a negative value represents the reverse.) This analysis was performed rather than separate analyses on the absolute number of errors in recall about "feminine" and "masculine" activities, since it corrects for between group differences in errors of any sort. A significant sex  $\times$  videotape interaction supported the prediction that females would make relatively more errors recalling "feminine" activities in the reversal than in the stereotype condition, while the opposite would hold true for males,  $F(1, 30) = 4.53, p < .05$ . Within-sex comparisons revealed a marginally significant effect for females who tended to make relatively more errors in recalling "feminine" than "masculine" activities in the reversal condition ( $+ .67$ ) and relatively more errors in recalling "masculine" than "feminine" activities in the stereotype condition ( $-.40$ ),  $t(17) = 1.72, p < .10$ . Males in the stereotype and reversal conditions did not differ significantly in errors made,  $t(17) = 1.45, p > .15$ , although the means were in the expected direction ( $+1.00$  for stereotype males and  $+0.10$  for reversals). Comparisons within each videotape condition revealed a significant tendency for stereotype males to make relatively more errors in recall about "feminine" activities than the females did,  $t(17) = 2.26, p < .05$ , while the sex difference among reversal subjects was not significant,  $t(17) = 1.24, p > .20$ .

In addition to the above analysis of the recall data, a  $2 \times 2 \times 2$  (subject sex  $\times$  videotape  $\times$  tester sex) analysis of variance was performed on total recall errors made by subjects. This analysis yielded a significant main effect for subject sex, reflecting more recall errors by males than by females,  $F(1, 30) = 5.36, p < .05$ . Furthermore, a significant subject sex  $\times$  tester sex interaction revealed that subjects made more recall errors when tested by an opposite-sex than by a same-sex experimenter,  $F(1, 30) = 4.14, p < .05$ . Comparisons within subject groups revealed that this tendency was significant for males who made an average of 5 errors when tested by a female and only 2 errors when tested by a male,  $t(17) = 2.47, p < .05$ . Females, on the other hand, made only slightly more errors when tested by a male (2.0) than when tested by a female (1.6),  $t < 1$ . In addition, comparisons within each tester revealed that the overall tendency for males to make more errors than females was significant given a female tester,  $t(17) = 3.00, p < .01$ , but not given a male tester,  $t < 1$ . This unexpected finding of poorer performance by preschool boys when tested by a woman suggests that the prevalence of male teachers in the elementary school grades may place boys at a disadvantage vis-à-vis the girls.



### Verbal Preference

A  $2 \times 2 \times 2$  (subject sex  $\times$  videotape  $\times$  tester sex) analysis of variance performed on the number of "feminine" choices made by subjects when asked to state their preference for a "feminine" or "masculine" activity revealed a significant sex effect reflecting greater preference for "feminine" activities by females than by males,  $F(1, 31) = 6.73, p < .05$ . Comparisons within each videotape condition revealed that the tendency for females to prefer more "feminine" activities than males was significant for stereotype subjects,  $t(17) = 2.74, p < .01$ , but not for reversal subjects,  $t = 1$ . There was also a marginally significant videotape effect reflecting greater preference for the "feminine" activities in the stereotype than reversal condition,  $F(1, 31) = 2.98, p < .10$ . Within-sex comparisons revealed that this effect was largely due to female subjects who, as predicted, expressed more preference for the "feminine" activities in the stereotype than in the reversal condition,  $t(18) = 2.11, p < .05$ , whereas the corresponding effect for males was not significant,  $t < 1$ . The predicted sex  $\times$  videotape interaction was not significant,  $p > .10$ . However, an unexpected videotape  $\times$  tester interaction,  $F(1, 31) = 4.65, p < .05$ , revealed that subjects in the stereotype condition expressed a nonsignificantly greater preference for the "feminine" activities when tested by a female than when tested by a male,  $t < 1$ , while subjects in the reversal condition expressed a significantly greater preference for the "feminine" activities when tested by a male than when tested by a female,  $t(18) = 2.16, p < .05$ . This pattern of results indicates that children express more preference for the "feminine" toys when the videotape vignette has given them reason to believe that the tester him/herself would like these toys.

A  $2 \times 2 \times 2$  (subject sex  $\times$  videotape  $\times$  tester sex) analysis of variance on the arc sin transformed proportion of subjects who expressed a preference for the male model revealed a significant effect only for subject sex reflecting greater preference for the male model by male than by female subjects,  $F(1, \infty) = 9.80, p < .01$ .

### DISCUSSION

The present investigation of children's Saturday morning television has revealed sex differences in the quantity, quality, and consequences of behavior which replicate and extend the evidence of sex-stereotyping reported for the 10 most popular children's programs (Sternglanz & Serbin, 1974) and those reported for adult commercials (McArthur & Resko, 1975). One of the most striking findings in all of these studies is that males appeared much more frequently than females. What's more, in Study I it was revealed that the rate of behavior among those characters who do appear was higher for males than for females. To the extent that viewers imitate the behavior of same-sex

models, these sex differences in frequency of appearance suggest that television is likely to have a greater impact on girls than on boys. The relative paucity of female models for girls to imitate suggests that girls will show more cross-sex imitation than boys.

There were notable differences in the quality of the portrayal of males and females on children's Saturday morning television. In general, the sexes tended to appear in different roles: males presented in terms of their relationship to other family members; females presented in terms of their relationship to other family members. Males tended to be portrayed in a leadership role; females tended to be portrayed in a supportive role. For example, males manifested expertise concerning the products advertised, and, in the programs themselves, problem solving was more frequent for males than females. While males were more knowledgeable than females, females were more product-oriented: They had a proportionately high number of product-users on commercials and a relatively high number of product-users in the programs themselves. Social behaviors as well as product behaviors differentiated the sexes on children's Saturday morning television. Concordant social behaviors accounted for a greater proportion of the behavior than males' behavior, while aggression and autonomy behaviors were more characteristic of the males.

In addition to differing in the quantity and quality of behavior, males and females on Saturday morning television differed in the consequences of their behavior: The behavior of males in Saturday morning television programs had more consequences more often than was that of female models. This difference revealed a somewhat different effect. Here, females often promised a rewarding consequence more often than males promised a rewarding consequence. It is interesting to note that if one generalizes from the results regarding the motivating effects of reward dependence to the use of this technique to suggest to females—viewers—how to produce any consequences—that their purchase of products will have rewarding consequences.

While the stereotyped portrayal of the sexes on Saturday morning television and of itself provides reason to be concerned about the effects of television on the sexes, the results of Study III provide even more reason. It was found that children tended to recall and imitate the activities of a same-sex model more than of an opposite-sex model, even when the same-sex model had manifested a behavior. Thus, boys were more likely to engage in nurturing behaviors than in leadership, bravery, and problem solving activities were performed by a male model and



models, these sex differences in frequency of appearance and behavior suggest that television is likely to have a greater impact on boys than girls. The relative paucity of female models for girls to imitate might also suggest that girls will show more cross-sex imitation than boys.

There were notable differences in the quality as well as in the quantity of portrayal of males and females on children's Saturday television. For one thing, the sexes tended to appear in different roles: Females were more often presented in terms of their relationship to others—e.g., in a friendship or familial role; males tended to be portrayed in a role which defined them independently of others—e.g., in an occupational role. The sexes differed in their behavior as well as in their roles. For example, males more often manifested expertise concerning the products advertised in the commercials and, in the programs themselves, problem solving was a more frequent activity for males than females. While males were thus presented as more knowledgeable than females, females were more often portrayed in search of knowledge: They had a proportionately higher representation among product-users on commercials and a relatively higher incidence of cognizance in the programs themselves. Social behaviors as well as these intellectual behaviors differentiated the sexes on children's Saturday morning television. Concordant social behaviors accounted for a greater percentage of females' than males' behavior, while aggression and autonomy were more frequent for the males.

In addition to differing in the quantity and quality of their behavior, males and females on Saturday morning television differed in the consequences of their behavior: The behavior of males in Study I was accompanied by consequences more often than was that of females. However, the commercials revealed a somewhat different effect. Here, female product-users were more often than males promised a rewarding consequence for using a given product. It is interesting to note that if one generalizes from research evidence regarding the motivating effects of reward deprivation, it must be a very effective sales technique to suggest to females—whose behavior is rarely seen to produce any consequences—that their *purchasing* behavior can have some rewarding consequences.

While the stereotyped portrayal of the sexes observed in Studies I and II in and of itself provides reason to be concerned about television's portrayal of the sexes, the results of Study III provide even more cause for concern. Here it was found that children tended to recall and reproduce more of the activities of a same-sex than of an opposite-sex televised model. This was true even when the same-sex model had manifested "sex-inappropriate" behavior. Thus, boys were more likely to engage in nurturance, domesticity, and artistic behaviors than in leadership, bravery, and problem solving when the former activities were performed by a male model and the latter by a female. On the



other hand, when the sex of the models performing each set of activities fit current sex-role stereotypes, so did the boys' behavior. Similar results were obtained for girls, although their tendency to manifest more imitation of a same-sex model was weaker than for the boys. This finding parallels results reported by McArthur and Eisen (1976), and it may be explained by the fact that cross-sex imitation is more often discouraged for boys than for girls in our society (e.g., Fling & Manosevitz, 1972) as well as by the fact that girls are accustomed to television programming in which same-sex models are quite rare.

One implication of the present findings is that, if one wishes to diminish the sex-stereotyped behavior which is so prevalent in our society, a change in the representation of males and females on children's television may be a useful step forward. Juxtaposed with the sex differences observed in Studies I and II, the results of Study III suggest that television may well contribute to greater problem solving attempts, autonomy, and aggression among boys than girls in our society, while fostering more information seeking and concordant social behavior among girls. They further suggest that appropriate changes in television's portrayal of the sexes could serve to increase socially desirable, nonstereotyped behaviors on the part of both sexes, such as problem solving by girls and concordant social behavior by boys.

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