

## Children's Comprehension of Televised Formal Features With Masculine and Feminine Connotations

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Masculine and feminine content are often presented on television with different types of formal production features (i.e., action, music, and camera techniques). Children from Grades 1 through 6 were presented with three types of stimuli in which masculine and feminine formal features were varied, but content was sex neutral: commercially produced advertisements, specially produced "pseudocommercials," and verbal descriptions. They were asked to judge whether each stimulus was better suited to advertise a feminine or masculine sex-typed toy. Children recognized the sex-typed connotations of the formal features presented in all three types of stimuli. Older children were more accurate than younger children, but form discrimination was significant even for the youngest age group. Comprehension of sex-typed connotations was predicted by home television viewing patterns but not by general knowledge of sex stereotypes. The results demonstrate that children in middle childhood comprehend sex-typed connotations at the subtle level of television formal features. The study extends knowledge about the acquisition of communicative competence into the nonlinguistic codes of the television medium.

Learning the meanings of television forms is one aspect of the overall process of developing communicative competence. As children grow up in a social world, they must learn to use and understand the modes of communication in their culture. In many modern societies, television has become an important means of communication, one used extensively by children (Comstock, Chaffee, Katzman, McCombs, & Roberts, 1978). Yet most research on television has been concerned with its content. Relatively little theory or research has been devoted to learning how children acquire competence in understanding the techniques used in television to communicate these content messages.

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The unique features of different communication media are their forms rather than their content. As a symbol system, television has specific forms, codes, and modes of representing information (Salomon, 1979). These comprise visual techniques such as cuts, fades, dissolves, and special effects as well as auditory features including music, sound effects, and various types of speech. The level of character action, the rate of change, and the pacing of presentation are also formal attributes that can be described independently of the content they are used to present (Huston & Wright, 1983; Wright & Huston, 1983).

Formal features of televised communications carry information in conjunction with message content. We have suggested elsewhere that formal features serve syntactical functions as markers of time, place, separation of scenes, and the like; they serve as modes of representing information in visual or auditory images; and they carry connotative information about the type of content being presented (Huston & Wright, 1983). This connotative function is the focus of the present study.

Forms are often chosen by television producers to enhance or be consistent with content

messages; in many instances the forms themselves come to carry connotative meaning for a knowledgeable viewer. These connotations may be specific to a particular program or genre (e.g., the meaning of the "Which of these things is not like the other" tune in *Sesame Street*); they may be specific to the television medium (e.g., animation in American television signals humorous violence); or they may draw on codes that are generic in the broader culture.

The present study is concerned with sex-typed connotations of television forms. Masculine and feminine content are often presented with different types of formal features. In one analysis, toy commercials showing boys only, girls only, or both genders were compared on the assumption that the intended audience was boys, girls, or both, respectively. Commercials designed for boys had rapid action, frequent cuts, loud music, sound effects, and frequent scene changes. We will call these "masculine formal features." Commercials aimed at girls contained background music, many fades and dissolves, and female narration, hereafter called "feminine formal features." In most cases, the sex-typed commercials differed significantly from the neutral ones as well as from each other (Welch, Huston-Stein, Wright, & Plehal, 1979).

The purpose of this study was to investigate the development of children's comprehension of the sex-typed connotations of these formal features during middle childhood. Sociolinguistic investigations of communicative competence provide a model for conceptualizing how understanding of subtle formal features may be manifested or detected. For example, Edelsky (1977) tested children and adults for their understanding of sex-linked language forms. Sentences were presented in feminine form (e.g., "I was *just* furious") and in masculine form ("I was *very* mad"). Adults and sixth graders readily identified the masculine and feminine language forms when asked to do so, but first-graders did not, largely because they focused on the content of the sentences rather than the form.

Even among older children, knowledge of language forms must be elicited with specific techniques designed to focus attention on form. People are trained to give primary em-

phasis to the content of communications, and such content is generally salient. For example, parents are more apt to correct a child's utterance when it is factually incorrect than when it violates a grammatical rule or a socially appropriate form (Rice, 1982). It might be expected, therefore, that the connotations of television forms would not be immediately apparent to children. If they know the connotative meanings of form, that knowledge probably exists at an implicit level that is manifest only when their attention is focused on form rather than content.

The sex-typed meanings of television forms are derived partly from medium-specific pairing of sex stereotyped content with particular forms and partly from their resemblance to symbols of masculinity and femininity that are generic in the broader culture. Children's commercial programs (e.g., Saturday morning) contain particularly blatant pairings of sex-typed form and content, and they are peppered with the toy advertisements used to identify the sex-typed formal features varied in this study (Barcus, 1977). Similar patterns are probably pervasive in programs for general audiences as well. The forms chosen to connote masculine and feminine content also represent broader cultural stereotypes associating masculinity with speed, toughness, and abruptness and femininity with softness and gentleness.

Therefore, children might acquire knowledge of these connotations from two sources: exposure to television programming, particularly commercial children's programs, and experience with sex stereotypes in the broader culture. Accordingly, measures of television viewing and knowledge of sex stereotypes were included to determine their correlations with children's comprehension of formal feature connotations.

In sum, the major purpose of the present study was to determine whether children in middle childhood understand the sex-typed connotations of television forms even when the content of a presentation is neutral. Children from first through sixth grades were included in order to assess developmental differences. This age range was selected because it was the period in which comprehension of sex-linked language forms appeared in earlier studies (Edelsky, 1977).

Table 1  
*Mean Levels of Formal Features in Commercially Produced Advertisements and Pseudocommercials*

Feature	Commercially produced advertisements		Pseudocommercials		
	M	F	M	N	F
Inanimate action <sup>a</sup> (average rating)	1.33	1.89	4.0	2.0	1.0
New scenes (frequency)	4.5	2.3	7.0	2.9	1.0
Visual cuts (frequency)	12.5	3.0	10.0	2.4	0.0
Foreground music <sup>b</sup> (s)	9.1	0.0	6.8	2.6	2.5
Sound effects (s)	2.2	0.0	4.5	0.0	0.0
Male narration (s)	6.0	8.5	12.3 <sup>c</sup>	0.0	0.0
Male singing narration	14.7	5.0	0.0	0.0	0.0
Fades/dissolves (frequency)	0.3	9.7	0.0	1.4	5.0
Background music (s)	13.2	14.4	NA	NA	NA
Female narration (s)	0.0	0.0	0.0	0.0	12.8 <sup>c</sup>
Female singing narration (s)	0.0	10.3	0.0	0.0	0.0

Note M = masculine; F = feminine; N = neutral

<sup>a</sup> Action of objects was scored for each 5-s interval on a scale from 1 to 4 where 1 = *stationary* and 4 = *rapid movement through space*

<sup>b</sup> For the pseudocommercials, music was classified by tempo or down beats per 5 s

<sup>c</sup> The means for male and female narration apply only to the one pseudocommercial in each category with narration.

## Method

### *Subjects and Experimenters*

Participants were 240 children equally divided by sex and grade level (first through sixth grades). They attended an elementary school that serves both rural and suburban areas with a broad range of income levels and occupations. The sample was predominantly white. Experimenters were graduate and undergraduate students, some of whom were aware of the hypotheses of the study. Some protection against experimenter bias was afforded by the fact that they could not see the children's responses. Approximately equal numbers of children in each treatment were tested by male and female experimenters.

### *Procedure*

Children were tested in a mobile research laboratory in groups of two to four. Each child sat in a "booth" where she or he could see the experimenter and the 19-in video monitor but could not see the other children.

Three types of stimuli were designed to present masculine and feminine formal features independently of content: commercially produced advertisements, specially produced "pseudocommercials," and verbal descriptions. The commercially produced advertisements have the advantages of being professionally produced and of representing the real world of television. Content cues may be confounded with form, however, and formal features cannot be varied precisely. The pseudocommercials were produced in the laboratory, so they were not of professional quality. They did, however, contain carefully controlled variations

of formal features, and their content was controlled and comparable across formal feature categories. The verbal descriptions were free of any confounding content, and they represented the formal features linguistically. The verbal form of presentation, however, was one step removed from the television medium. This multi-method approach permits comparison of measures that have complementary advantages and disadvantages, permitting a powerful test of children's knowledge.

### *Commercially Made Advertisements*

Sixteen commercials were chosen from a sample of 71 food and toy advertisements that had been scored for formal features. The goal in selection was to obtain advertisements that contained masculine or feminine formal features and sex-neutral content. Formal feature scoring was performed by coders who had reached a criterion of at least 80% interobserver agreement on each feature coded. The eight masculine and eight feminine ads selected had ratings on at least one sex-typed formal feature that were equal to or greater than the mean for that feature in advertisements with masculine and feminine content, respectively (Welch et al., 1979). Within each set, four had both audio and video features that met the criterion for sex-typing, two had sex-typed auditory features, and two had sex-typed video features. The mean levels of formal features for each set appear in Table 1.

Sex-neutral content was defined by the nature of the product and by portrayals of approximately equal numbers of males and females engaged in sex-neutral activities or a mixture of masculine and feminine activities. All products

except two were either foods (presumed to be neutral) or toys that were judged neutral.

After seeing a practice commercial, children saw the 16 advertisements in varying orders. Eight were shown without alteration. The four in which only the video features were sex typed were shown without sound; the four in which only the audio features were sex typed were presented with a blank screen so that only the sound track could be detected. Children were told before the video-only or audio-only advertisements were played that they would see an ad without sound or that they would hear an ad without a picture.

When children were seated in the room, they were told they would be asked some questions about television advertisements, and they were assured there were no right or wrong answers. In front of each child was a pair of boxes with slots in the top. One had a picture of a toy truck mounted on it; the other had a toy baby buggy. The two toys were selected to represent sex-stereotyped objects that were comparable in the following ways: Both had wheels and could be moved, both had one moving part (a dumping bed and a sun shade), and both had the head and face of a person visible. Each child was given a pile of photographs showing the products for the advertisements they would see.

Children were shown the ads one at a time. After each one, they were instructed to pretend that the product advertised was taken out of the commercial and to decide whether they thought that a toy truck or a toy baby buggy would fit best as a replacement. They were told to place the photograph from that ad in the appropriate box to denote their choice. On the practice commercial, children announced their choices, and the experimenter probed to be sure they understood the procedure. On the stimulus items, they were told not to announce their choices. The response alternatives, toy truck and toy baby buggy, were selected to elicit knowledge of social stereotypes rather than personal beliefs or preferences. This slightly indirect procedure was adopted after extensive pilot testing demonstrating that more direct questions, such as "Is this ad for boys or girls?" tended to elicit children's own preferences or a rejection of the idea that ads should be for one sex or the other. They also searched for obscure content cues such as slight differences in the number of male and female characters. Asking children to select ads appropriate for highly stereotyped toys seemed to elicit knowledge of social stereotypes without some of these confounds. It is possible, however, that children were responding to qualities of baby buggies and trucks other than their sex-typed associations. Therefore, in a subsequent study, with different children, the "truck-buggy" procedure was subjected to two kinds of validation check.

Children from kindergarten through fifth grade ( $N = 180$ ) were shown "pseudocommercials" in which all the nonverbal sex-typed features were combined. After each, the experimenter said, "I made these commercials. I made some of them for boys and some of them for girls. Do you think I made this one for girls or for boys?" Each child was subsequently asked to rate each commercial on the "truck-buggy" question used in the present study. For the feminine and masculine commercials, 82% and 84%, respectively, made consistent ratings.

Next children were shown the pictures of the toy truck

and the toy baby buggy one at a time. They were asked to rate each on a set of bipolar adjectives on which the toys might differ using an illustrated scale of 1 to 5. Low values represent the "masculine" end of each dimension. The mean ratings on "boy-girl" were as follows: truck, 2.12, buggy, 4.34; and difference, 2.22. The means for "fast-slow" were as follows: truck, 1.52; buggy, 2.38; and difference, 0.87. The means for "loud-quiet" were as follows: truck, 2.73; buggy, 4.19; and difference, 1.47. The means for "hard-soft" were as follows: truck, 1.66; buggy, 3.64; and difference, 1.98. The means for "big-small" were as follows: truck, 1.82; buggy, 1.47; difference, -0.35. The truck and buggy were most clearly distinguished on the boy-girl dimension, although the children attributed some of the other sex-typed properties to them as well.

*Focusing instructions* The advertisements were shown either with or without focusing instructions. The focusing instructions were designed to draw children's attention to formal features of the advertisements (without suggesting the direction of sex typing) because extensive pilot testing indicated that many children search for obscure content cues. Children were told that the experimenter would give them a "hint" about what to look for. For the first five commercials shown, the experimenter suggested they attend to the music. For the next three ads, they were instructed to attend to the amount of character and product action ("how much things moved around") For the last eight ads, the experimenter first explained cuts and fades (dissolves) while showing a few examples of each. Children were told to attend to the cuts and fades used when the picture changed. (They readily learned the terms and appeared to apply them correctly.) The order of commercials within each set (music, action, visuals) was varied for different children, but the ads with both audio and visual features always preceded those with only one type of feature.

In the nonfocusing treatment, no additional instructions were given. The eight commercials containing both audio and visual presentations were always shown first. Half the groups then saw the video-only followed by the audio-only ads; the other half saw the reversed order.

*Control group.* A third group of children rated the photographs of the products without seeing the TV advertisements. The purpose of this control was to determine whether the products were considered sex neutral. These children were instructed to place the picture in the toy truck box if they thought that a child who liked the advertised product would prefer a toy truck and to place it in the baby buggy box if they thought a child who liked the product would prefer a toy baby buggy. The pictures were turned over one at a time in one of 32 preset orders.

### *Pseudocommercials*

The pseudocommercials were 30-s bits in which the video content consisted of mobiles, baskets, playground area and the like, and the audio, with one exception, consisted of music and/or sound effects. The pseudocommercials were constructed by defining a neutral or intermediate level of each of the following formal features: inanimate action, new scenes, cuts, dissolves, musical tempo, and sound effects. Two alternate sets of 14 pseu-

docommercials each were constructed (A and B). For 10 commercials in each set, one feature was varied in a masculine or feminine direction, and all others were held at a neutral level. Of the remaining four, two in each set contained all of the masculine features and all of the feminine features, respectively. The final two had neutral levels of all features but contained male and female narrators, respectively. They spoke in Persian to prevent confounding from the content of their speech. These final two were the only pseudocommercials containing speech because sex of the narrator might override the other formal features and because there is no satisfactory "intermediate" level. The two sets of commercials were intended as alternate forms of the same experimental variations. The mean levels of each formal feature for masculine, intermediate, and feminine versions are shown in Table 1.

The pseudocommercials were introduced to the children as short television bits that were sort of like commercials. They were told that commercials are made differently for different kinds of toys. After each pseudocommercial, they were to decide whether that bit would work better as a commercial for a toy baby buggy or a toy truck. Small index cards numbered consecutively from 1 to 14 were placed in front of each child along with the truck and baby buggy boxes. The experimenter announced the number of each commercial as it was shown, and the child placed the numbered card in the box chosen. Half the children saw Set A and half saw Set B.

*Verbal description questionnaire* The third method of presenting formal features was a questionnaire composed of 13 brief verbal descriptions. The descriptions of feminine features were as follows: (a) don't show a lot of different places, just a few; (b) woman talking about toy; (c) a lot of fades; (d) woman singing; (e) toys stay still and don't move much; (f) not many sound effects or funny noises; (g) slow, quiet music. The description of masculine features were as follows: (a) a lot of cuts; (b) toys move around a lot; (c) fast, loud music; (d) a lot of sound effects and funny noises; (e) men talking about toy; (f) show a lot of different places.

For the verbal description measure, children were given answer sheets with 13 pairs of toy trucks and toy baby buggies depicted (reduced copies of the pictures on the response boxes). They were told that the experimenter was going to describe some ways that commercials could be made and that they would be asked to decide whether each would go better in a commercial for a toy baby buggy or a toy truck. They were to mark the appropriate picture on the answer sheet for each item. The 13 verbal descriptions were read in one of two random orders.

### *Assignment of Subjects to Procedures*

The sample of 240 children was divided into four groups of 60 containing five boys and five girls from each of the six grade levels. Group 1 responded to the pseudocommercials; then they received the verbal description questionnaire. Group 2 responded to the commercially produced advertisements with focusing instructions; then they received the verbal description questionnaire. In a second session approximately 2 weeks later, they responded to the pseudocommercials. Group 3 responded only to the com-

mercially produced advertisements without focusing instructions. Group 4 served as a control, rating the commercial product photos without seeing the advertisements.

### *Classroom Measures*

Two measures were administered in the children's classrooms several weeks before the experimental sessions: the Trait Stereotype measure from the Children's Personal Attributes Questionnaire (CPAQ; Simms et al., 1978) and a Home Television Viewing survey.

*Trait Stereotype Measure* The Trait Stereotype measure consisted of the 20 adjectives on the original CPAQ, 14 of which fall on three scales: masculine (M), feminine (F), and bipolar masculine (MF). The remaining items were buffers. The reliabilities of the three scales (Cronbach alpha) reported by Simms et al. (1978) were .50, .66, and .52, respectively. Children were given an answer sheet containing 20 pairs of male and female silhouettes. As each adjective was read to the class, they were instructed to mark the gender for whom that adjective was more typical. The procedure forced a choice between male and female. Children received a score for each of three subscales as well as a total stereotype score that summarized how many of their answers corresponded to societal stereotypes.

*Home viewing survey* Children were given a list of 45 television programs shown on Friday afternoon, Saturday morning, and Saturday and Sunday evenings. They were asked to check the programs they usually watched. This instrument has been used and refined in several studies (Ross, Wartella, & Lovelace, 1982). It provides a sample of viewing frequency for different categories of television programs. Testing was always done on Monday so that children were responding to programs that had been broadcast within the last 3 days.

### Results

Responses to all three types of stimuli were scored 1 for each masculine choice and 2 for each feminine choice. The totals were divided by the number of items in each set. Hence, scores had a potential range of 1.00 to 2.00.

### *Commercially Produced Advertisements*

Ratings of the commercially produced advertisements were subjected to an analysis of variance (ANOVA) in which sex (2), grade level (3), and condition (3) were between-subjects factors. The six grades were grouped into three levels for this analysis (1st-2nd; 3rd-4th; 5th-6th). The sex type of the formal features (2) and modality of presentation (3) were within-subjects factors. The total number of subjects in this analysis was 180 (Groups 2-4). Where significant *F* ratios occurred, means were

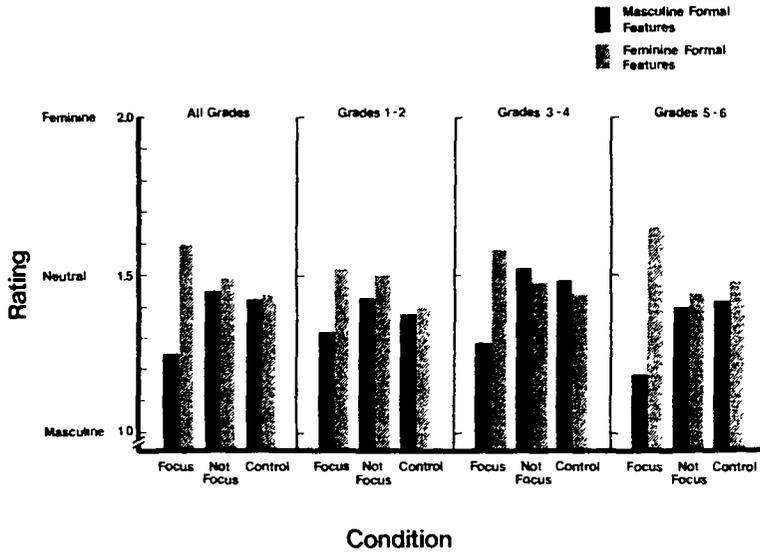


Figure 1 Mean ratings of commercially produced advertisements by children in three conditions at three grade levels.

tested for significant differences at the .05 level using Fisher's least significant difference test.

Children who saw the advertisements, particularly with focusing instructions, were expected to rate the ads in sex-typed directions more than the control group. The interaction of Condition  $\times$  Sex Type was significant,  $F(2, 162) = 29.29, p < .001$ . The means for each condition are shown in Figure 1. Children who received focusing instructions rated commercials with masculine and feminine formal features as expected. Their ratings were significantly different from those in the control group and those who received nonfocusing instructions. Those who received nonfocusing instructions did not differ from the control group. With focusing instructions, children perceived the sex-typed connotations of the formal features, but without such instructions, they did not respond to those connotations.

There was some tendency for older children to rate commercials more accurately than younger children in the focusing instruction treatment. The interaction of Condition  $\times$  Sex Type  $\times$  Grade was of borderline significance,  $F(4, 162) = 2.36, p < .10$ , and the two-way interaction of Sex Type  $\times$  Grade was significant,  $F(2, 162) = 3.68, p < .05$ . The means

are shown in Figure 1. Although older children in the focused instruction condition rated commercials more accurately than younger children, children at all grade levels rated the masculine and feminine commercials as significantly different. There were no main effects or interactions associated with Sex of Subject.

#### Pseudocommercials

Half the children saw the pseudocommercials before any other stimuli; the other half saw them about 2 weeks after responding to the commercially produced ads with focusing instructions and the verbal questionnaire. The pseudocommercials were submitted to an ANOVA of Grade (3)  $\times$  Sex (2)  $\times$  Order of Testing (2)  $\times$  Stimulus Set A vs. B (2) as between-subjects factors and sex-type of formal features (2) as a within-subjects factor. The total number of subjects in the analysis was 120 (Groups 1 and 2).

Children rated pseudocommercials with masculine formal features as significantly more masculine than those with feminine formal features. The main effect of sex type was significant,  $F(1, 96) = 63.44, p < .001$ . The mean

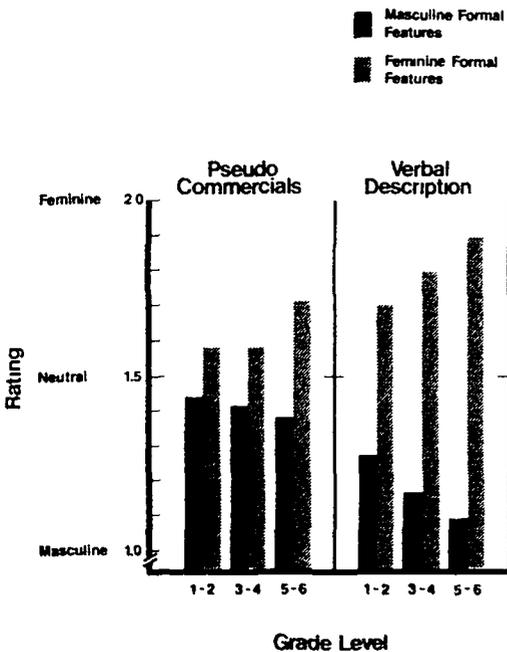


Figure 2 Mean ratings of pseudocommercials and verbal description questionnaire for children at three grade levels.

rating for masculine commercials was 1.42 and for feminine commercials was 1.63.

Children who had been given the other stimuli before the pseudocommercials were more accurate in their ratings than those who received the pseudocommercials first. The interaction of Sex Type  $\times$  Order of Testing was significant,  $F(1, 96) = 14.07, p < .001$ . Nevertheless, the ratings of masculine commercials differed significantly from those for feminine commercials in both orders of testing. The means for the masculine commercials were 1.46 for pseudo first and 1.37 for pseudo last. The means for the feminine commercials were 1.57 for pseudo first and 1.68 for pseudo last.

Older children rated the pseudocommercials more accurately than younger children. The interaction of Sex Type  $\times$  Age was significant,  $F(2, 96) = 5.45, p < .01$ . The means appear in Figure 2. Despite the age differences, children at every grade level rated masculine and feminine commercials as significantly different. Again there were no main effects or interactions associated with Sex of Subject.

Because the cues in some of the pseudo commercials were expected to be more obvious than in others, the means for individual items were examined to determine which features or combinations of features were rated as sex typed. The means for the items in which several masculine features were combined was 1.20; the mean for the items combining feminine features was 1.83. In addition, the means for 13 of the 14 individual features were in the expected direction from the midpoint of 1.5. Hence, the overall difference between the masculine and feminine pseudocommercials was not contributed solely by a few obvious features.

#### Verbal Description Questionnaire

Half of the children received the verbal description questionnaire following the commercially produced advertisements with focusing instructions; the other half received it following the pseudocommercials. The ANOVA included Grade (3)  $\times$  Sex (2)  $\times$  Preceding Test (2) as between-subjects factors and Sex Type of formal features (2) as a within-subjects factor. The total number of subjects was 120 (Groups 1 and 2).

Children rated the masculine and feminine features as expected. The main effect of Sex Type was significant,  $F(1, 108) = 558.84, p < .001$ . The mean rating for masculine features was 1.18 and mean for feminine features was 1.80. Each of the 13 items was rated in the expected direction.

Older children were more accurate than younger children. The interaction of Sex Type  $\times$  Grade was significant,  $F(2, 108) = 16.90, p < .001$ . The means are presented in Figure 2. Again there were no main effects or interactions associated with Sex of Subject.

#### Sex Stereotypes and Home Viewing

*Trait stereotype measure.* Scores on each of three CPAQ Stereotype scales as well as the total stereotype score were analyzed for sex and grade-level differences. There were significant effects of grade level for each subscore as well as for the total,  $F(2, 216) = 22.10, p < .001$ . Older children had higher stereotype scores than younger children. Of a possible 14

points, the means for the three grade levels were 10.59 for Grades 1 to 2, 11.80 for Grades 3 to 4, and 12.41 for Grades 5 to 6. There were no sex differences on the total stereotype score, but there were sex differences on the masculine and feminine scales. Males had higher scores than females on the masculine scale,  $F(1, 216) = 10.69, p < .001$ ; females had higher scores than males on the feminine scale,  $F(1, 216) = 35.68, p < .001$ .

Correlations of each of the four stereotype scores with all three measures of comprehension were calculated, partialing out grade and sex. None of the correlations reached significance.

*Home viewing measure* Four indexes of home viewing were derived from children's reports of viewing frequencies: Saturday morning, after school, prime time, and the sum of the three. In general, younger children reported more viewing than older ones, particularly for Saturday morning and after school programming. The correlations of grade level with viewing were  $-.40$  for Saturday morning,  $-.30$  for after school,  $-.11$  (ns) for prime time, and  $-.32$  for total viewing.

The relation of home viewing to comprehension of formal features was tested by correlating the home viewing indexes with comprehension of masculine and feminine features on each of the three measures (partialing out grade). For commercially produced advertisements, only the focused instruction group was included because it was the treatment in which children responded to the sex-typed formal features. Total viewing was significantly correlated with all the comprehension scores except recognition of masculine features in the pseudocommercials,  $r(116) = .09, ns$ . The other correlations ranged from  $r(116) = .21, p < .05$ , for masculine features on the verbal measure to  $r(116) = .40, p < .01$ , for feminine features on the verbal measure.

Saturday morning and after-school viewing predicted comprehension better than prime time viewing. Five out of six correlations were significant for Saturday viewing, ranging from  $r(116) = .25, p < .01$ , for feminine features on the pseudocommercials to  $r(116) = .50, p < .01$ , for feminine features on the verbal description measure. The exception was masculine features on the pseudocommercials. All

correlations for after-school viewing were significant. They ranged from  $r(116) = .19, p < .05$  for masculine pseudocommercials, to  $r(116) = .46, p < .01$ , for feminine features on both pseudo and verbal measures. None of the correlations for prime time viewing alone reached significance.

## Discussion

Children from 6 to 12 years of age understood the sex-typed connotations of televised formal features. Each of the three measures has different strengths and weaknesses; together they form a strong body of evidence. Only one of the three measures, the commercial ads, permitted responding on the basis of content rather than form. Just as Edelsky (1977) found that young children strained to categorize sentences by content rather than by language form, so we found a strong tendency toward content-based responding. When instructed to attend to formal features, however, children at all ages discriminated sex-typing. In the other two measures, content effects were minimal. Content of the pseudocommercials was the same in masculine and feminine formats, and the verbal measure had no content. In these measures both the comprehension of sex typing at age 6 and its improvement with increasing age were clearly manifest.

Children's understanding of the connotative meanings of formal features appears to exist at an implicit level that is not readily reported unless the more predominant tendency to attend to content is overcome by providing focusing instructions or by removing content cues. Such implicit knowledge is similar to children's understanding of grammatical rules and to many types of metacognitive understanding. If young children are asked to describe such rules, they have difficulty doing so, but they demonstrate their knowledge when asked to apply them.

The findings of this study cannot be attributed to demand characteristics in the experimental setting. Although focusing instructions were required to elicit children's knowledge of sex-stereotyped forms in the real commercials, the instructions provided no hints about which features were masculine and feminine. In addition, children responded in the expected

direction to the forms of the pseudocommercials whether or not they had experienced an earlier session in which they were given focusing instructions. Those who had been through an earlier session were more sensitized to the sex-typed forms, but even the children encountering the pseudocommercials without any prior instruction responded in the expected direction. Finally, group administration of items reduced the possibility that the experimenter could provide unintended feedback about children's responses. In most cases, the experimenter did not know how the children were responding.

The pseudocommercials provide the most precise demonstration that children know the sex-typed connotations of formal features because their content and form was controlled and because most of the pseudocommercials contained variations of only one feature. In many cases, such variations produced small, subtle changes. For example, the item showing "feminine" fades and dissolves contained five brief dissolves instead of one. All other features—the music, sound effects, and action levels—were unchanged from the neutral standard level. Children's responses were in the predicted direction on all items except one. For the two items in which several masculine or feminine features were combined, a large majority of the children responded in the expected direction.

The verbal descriptions of formal features elicited more "correct" responses than the televised presentations. When the features are labeled verbally, children may more readily call on their real-world generic knowledge about symbols of masculinity and femininity than they do when they respond to the televised forms. Although individual differences in knowledge about sex stereotypes did not predict knowledge of formal features, the mean scores on the sex-stereotyping measure were generally high, suggesting that virtually all children in this age range know the cultural expectations for masculinity and femininity.

Experience with television programs, particularly those designed for children, was correlated with children's understanding of sex-typed formal features. It seems likely that one means by which children learn the sex-typed connotations of formal features is by observing

the co-occurrence of forms with sex-stereotyped content. Although such pairing probably occurs on prime time television, it is especially blatant in Saturday morning children's programming. The particular features used in this study were selected from children's advertisements, so exposure to programming containing such ads might be expected to be the most direct source of knowledge about these features.

Children's developing knowledge about the connotative meanings of television forms is part of a broader process of acquiring communicative competence. The findings of the present study suggest that such knowledge increases during the middle childhood years, but that it exists, at least for some children, as early as first grade. Yet, this knowledge exists largely at a subtle, implicit level rather than at the level of the child's most readily reported experience. Psychological theories of cognition or communication as yet provide little information about how such implicit knowledge affects children's functioning in the real world of viewing television. Formal cues to sex typing may influence attention and interest at a level that goes unrecognized even by adults and certainly by children. Children may respond to sex-typed formal features with an implicit, "That is for me" or "That is not for me." Or, content may override the effects of form except when forms are obviously inappropriate or unexpected. At this point, it is clear that children have the knowledge at some level; the next questions concern how that knowledge is used in the child's overall pattern of receptive communication skills.

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### Manuscripts Accepted for Publication

- Black Grandmothers' And Their Adolescent Daughters' Knowledge About Parenting. Joseph H. Stevens, Jr. (Department of Early Childhood Education, Georgia State University, University Plaza, Atlanta, Georgia 30303).
- Socialization Goals and Mother-Child Interaction: Strategies for Long-Term and Short-Term Compliance. Leon Kuczynski (Laboratory of Developmental Psychology, National Institute of Mental Health, Building 15K, 9000 Rockville Pike, Bethesda, Maryland 20205).
- Ego Identity, Intimacy, Sex Role Orientation, and Gender. Don G. Schiedel and James E. Marcia (Department of Psychology, Simon Fraser University, Burnaby, British Columbia, V5A 1S6, Canada).
- Maternal Emotional Signaling: Its Effect on the Visual Cliff Behavior of 1-Year-Olds. James F. Sorce, Robert N. Emde (University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colorado 80262), James Campos, and Mary Klennert.
- Stability of Aggression Over Time and Over Generations. L. Rowell Huesmann (Department of Psychology, Box 4348, University of Illinois, Chicago, Illinois 60680), Leonard D. Eron, Monroe M. Lefkowitz, and Leopold O. Walder.
- Fantasy Play and Related Cognitive Development in the Years 2 to 6. Diane Cole and Joseph C. LaVoie (Department of Psychology, College of Arts & Sciences, University of Nebraska, Omaha, Nebraska 68182).
- Identification With Paternal Attributes and Its Relationship to the Son's Personality and Drug Use. Judith S. Brook (Mount Sinai Medical School, Annenberg 22-74, One Gustave Levy Place, New York, New York 10029), Martin Whiteman, Ann Scovell Gordon, and David W. Brook.
- Growth in the Organization of Behavior Over the 2nd Year of Life. Wanda Bronson (Department of Psychology, Tallman Hall, University of California, Berkeley, California 94720).
- Perceptual Grouping and Spatial Distortion: A Developmental Study. James T. Enns (Department of Psychology, Green Hall, Princeton University, Princeton, New Jersey 08544) and Joan S. Gircus
- Differentiation of the Concepts of Luck and Skill. John G. Nicholls (Department of Education, Educational Psychology, Purdue University, SCC-G, West Lafayette, Indiana 47907) and Arden T. Miller

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