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A Content Analysis of Gender Representations in Preschool Children's Television

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Abstract

Prior content analyses have revealed the pervasiveness of gender-stereotyped portrayals and the underrepresentation of female characters in television programming. The present study is the first to examine gender representations in television shows specifically targeted at preschool-age children, which is a period when children are developing their understandings about gender. The sampled programs included three episodes each from 34 current shows. We compared female and male characters for number of total characters and lead characters (either mostly male, mostly female, or mixed). In addition, we analyzed the relative rates that female or male characters were depicted in the following: talking, speech (suggestions or support), aggression, gender-typed activities, and gender-typed appearance. Overall, the findings indicate preschool television perpetuates many gender stereotypes. However, some trends were less likely in programs with mostly female characters. Also, gender-stereotypical representations may be less pervasive in preschool-age programs than those previously indicated in content analyses of shows aimed at older children.

KEYWORDS: television; content analysis; gender stereotyping; sexism; sex roles; preschool age

A Content Analysis of Gender Representations in Preschool Children's Television

Children's television has been under scrutiny for the way that gender is portrayed in programming since the 1970s (e.g., Sternglanz & Serbin, 1974). Researchers have generally found that there are fewer female characters than male characters in children's television, female characters talk less than male characters, and characters tend to be shown expressing gender-stereotyped behaviors (see Signorielli, 2012, for a comprehensive review). Previous content analyses of children's television have predominantly focused on television created for a middle childhood audience (see Signorielli, 2012). No comprehensive content analysis has been conducted specifically examining how gender is represented in TV programs aimed at preschool-age children. The preschool years are an important developmental period when children are forming their knowledge and beliefs about how boys and girls are expected to look and act (Martin, Ruble, & Szkrybalo, 2002). Accordingly, for the present study, we conducted a comprehensive content analysis of the gender representations across 34 contemporary preschool television programs in the U.S.

Learning Gender from Television

According to cognitive theories of development, children interpret information about male and female characters on television and map those observations onto their mental models of what it means to be a boy or a girl (Bussey & Bandura, 1999; Liben & Signorella, 1980; Martin et al., 2002). In media studies, cultivation theory similarly emphasizes the premise that children are likely to interpret media messages about gender as being representative of the real world (Gerbner, 1998; Signorielli, 2012). Children form stereotyped expectations about the activities, personal attributes, stylistic appearances, and roles associated with each gender. These mental models, known as gender schemas, guide how children perceive and interpret information in the

environment (Martin et al., 2002). As children incorporate more gender stereotypes into their schemas, they become more likely to seek out information (e.g., watch particular TV shows) consistent with their existing views and to avoid information that is discrepant (Calvert & Huston, 1987; Martin et al., 2002). Thus, it is important to understand the kinds of media that are shaping many children's gender schemas.

Television is one of the most pervasive influences on the development of gender stereotypes. Research guided by cognitive-developmental and intergroup theory has demonstrated how environmental conditions can increase the salience of gender, which in turn increases the likelihood that children will use gender categories to stereotype other persons (Bigler & Liben, 2007). Notably, television and other media commonly highlight the salience of gender. For example, this occurs by marking characters' gender via perceptually distinct qualities such as their appearances, representing different gender groups with unequal sizes, or differentially linking characters with particular traits based on their gender. Alternatively, by having equal representations and portrayals of female and male characters, gender becomes less salient and children are less likely to use gender to stereotype others (Bigler & Liben, 2007).

Early childhood or preschool-age is an especially critical period when children are formulating their understandings of the activities, traits, appearances, and roles associated with each gender group. Gender schemas during these ages tend to be very gender-stereotyped and rigid (Halim et al., 2016). Young children are usually highly concerned with what it means to be "a girl" or "a boy," and they look to the characters on television to inform their developing views. Surveys conducted in the U.S. have found preschool-aged children tend to watch 15 to 20 hours of television per week; and many children in this age range cite their TV as the device they

would miss most (Ofcom, 2017; Statista, 2018; Vandewater, Rideout, Wartella, Huang, Lee, & Shim, 2007).

While all types of media can influence gender schemas (Witt, 2000), television may be the most influential in shaping young children's understanding of culturally expected gender roles and behaviors (Ofcom, 2017; Rideout, Vandewater, & Wartella, 2003; Statista, 2018; Vandewater et al., 2007). Television characters often represent stereotypical and one-dimensional representations from which children learn about their world (Signorielli, 2012). With repeated viewing, gender-stereotyped representations become knowledge that is incorporated into the rigid gender categories that children create (Halim et al., 2016; Martin et al., 2002; Oppliger, 2007). Indeed, a meta-analysis documented a meaningful average effect across several experimental studies for the impact of gender-stereotypical television programming on children's gender-stereotyped beliefs (see Oppliger, 2007). Other studies have additionally found links between television viewing and children's toy and activity preferences (Coyne, Linder, Rasmussen, & Birkbeck, 2016; Coyne, Linder, Rasmussen, Nelson, & Collier, 2014), social behavior (Mares & Woodard, 2005), and appearance and body concerns (Ward & Aubrey, 2017).

Gender Representations in Children's Television

Given that the preschool years are an important time for creating an understanding of gender, this content analysis seeks to identify if and how male and female characters are presented in gender-stereotyped ways in preschool television. To our knowledge, no prior content analysis has specifically investigated gender representations in television programming aimed at this age period. A few studies examined gender portrayals in specific preschool television series, such as *Sesame Street* (Kirkorian, Wartella, & Anderson, 2008), *Dora the Explorer* (Keys, 2016; Ryan, 2010) and *Doc McStuffins* (Keys, 2016). Otherwise, earlier content

analyses looked at shows aimed toward children in middle childhood (e.g., Hunting, Grumbein, & Cahill, 2018; Leaper, Breed, Hoffman, & Perlman, 2002; Martin, 2017; Thompson & Zerbinos, 1995), early adolescence (Gerding & Signorielli, 2013; Kirsch & Murnen, 2015), or a broad range of ages (e.g., Götz et al., 2008). Our focus on programs targeted to audiences in early childhood is timely given the expansion of preschool television in recent years. Multiple channels such as *Disney Jr.*, *Nick Jr.*, and *Sprout* are now devoted exclusively to television for children in this age group (McAllister & Giglio, 2005).

We investigated whether contemporary preschool television programs demonstrated similar patterns of gender representation as those previously reported regarding television aimed at older children. Developmental models of children's gender stereotyping have highlighted behavioral attributes, activities, stylistic appearances, and social roles as some of the key domains in which children form gender stereotypes (see Leaper, 2013; Martin et al., 2002). Accordingly, as explained below, we examined these qualities in television programs. These included the relative presence of female and male characters as well as the depictions of gender-stereotyped social behaviors (talking, speech style, aggression), activities, and appearances. Furthermore, we considered the relative depiction of female and male lead characters as a possible moderator. The present content analysis examines how male and female characters are represented. Despite the recent shift toward more youth identifying as transgender, genderqueer, or gender nonbinary (White, Moeller, Ivcevic, & Brackett, 2018), these representations are not yet present in television created for young children.

Number of characters. Previous research has consistently shown that male characters are depicted at least twice as often as female characters in children's television in the U.S. (Signorielli, 2012) and many other countries (Götz et al., 2008). Researchers have similarly

observed more male than female characters among animal and other non-human cartoon characters in children's media (Furnam, Abramsky, & Gunter, 1997). When female characters are commonly underrepresented in television shows, it sends the implicit message that males are more valued and more important in society (e.g., Smith, Choueiti, & Pieper, 2016). Given the apparent pervasiveness of the problem in the media, we expected that this bias would extend to television shows aimed at preschool-age children. Thus, we hypothesized there would be more male characters than female characters in preschool television programs with human characters (*Hypothesis 1a*) or non-human characters (*Hypothesis 1b*).

Although we predicted shows would generally include more male than female characters, we expected variability in the relative prominence of female and male characters. Therefore, as explained later, we considered whether the gender of the lead characters in television programs moderated the likelihood of average differences between character genders in our investigated variables.

Talking. There are popular stereotypes of girls (and women) as talkative and verbally engaged and of boys (and men) as taciturn and silent (see Leaper, 2014). However, prior content analyses of children's television have shown that male characters were depicted as speaking more than female characters (see Signorielli, 2012). In some contexts, differences in talking time can signal the relative prominence and dominance of the speakers via their control of the conversation (see Leaper, 2014). If so, greater talking among male than female characters would be an extension of males' greater prominence in television programming (Signorielli, 2012). Accordingly, we hypothesized a similar pattern whereby higher talking rates would occur among male than female characters--even after adjusting for the relative number of male and female characters (*Hypothesis 2*).

Supportive speech. Based on traditional gender roles, girls and women are expected to be nurturing and considerate of others (see Leaper, 2013). Prior observation studies of children have noted greater average uses of supportive speech among girls than boys (Leaper & Smith, 2004). These cultural expectations have also been represented in children's television. For example, one analysis of children's television found that female characters tended to be more nurturing and supportive than were male characters (Barner, 1999). Thus, we hypothesized that female characters would be shown using more supportive speech than would male characters (*Hypothesis 3*).

Suggestions. The traditional gender socialization for boys and men has stressed the use of instrumental behaviors that emphasize high self-assertion and somewhat low affiliation (Leaper, 2014). Prior studies have observed boys were more likely than girls to make suggestions (Leaper & Smith, 2004). These trends may be represented in children's television. For example, earlier content analyses indicated male characters were more likely than female characters to be depicted using assertive speech (Aubrey & Harrison, 2004; Thompson & Zerbinos, 1995). Therefore, we expected that female characters would be shown using more suggestions than male characters in programs for preschool children (*Hypothesis 4*).

Aggression. Male characters on television are more likely than female characters to be shown acting in aggressive ways (Signorielli, 2012). This has also been observed in shows geared toward school-age children (Hentges & Case, 2013; Leaper et al., 2002; Murnen, Greenfield, Younger, & Boyd, 2016). The incidence of aggression in programs created for preschool-age children (typically with TV-Y or TV-G ratings) is generally low (TV Parental Guidelines, 2017). Nonetheless, the portrayal of aggression in children's media may have real world implications in children's development (Gerbner, Gross, Morgan, & Signorielli, 1994).

Accordingly, we considered how aggression was portrayed to very young audiences. To the extent that aggression was portrayed in these programs, we expected it would be more likely in male than female characters (*Hypothesis 5*).

Gender-stereotyped activities. Gender-stereotyped representations of hobbies and occupations are often depicted in television for adults (Scharrer, 2013). There is some indication of analogous patterns in children's television. Male characters were more likely than female characters to be portrayed in construction-oriented and physical activities (Barner, 1999; Powell & Abels, 2002). Conversely, female characters were more likely than male characters to engage in performing arts (e.g., dancing) (Lemish, 2010), visual arts activities (e.g., drawing), or domestic tasks (e.g., caring for babies) in children's shows (Powell & Abels, 2002; Scharrer, 2013). Thus, we expected male characters would be more likely than female characters in the TV shows to be depicted in constructive activities (e.g., building blocks) and physical activities (e.g., sports) (*Hypothesis 6*). Conversely, we expected performance arts activities, visual arts, and domestic activities would be depicted more in female than male characters (*Hypothesis 7*).

Gender-typed appearance. Characters in children's television also tend to be portrayed in stereotypical ways in their appearance (Signorielli, 2012). This is seen in the types of colors and accessories that characters are depicted wearing as well as their body type.

First, colors are a salient way to signal a person's gender or the presumed gender-appropriateness of particular objects (Cherney & Dempsey, 2010). The colors pink and purple are commonly associated with girls, while the colors blue and black/red together are often associated with boys (Halim, Ruble, Tamis-LeMonda, & Shrout, 2013). According to one analysis, the characters in children's shows have been observed wearing clothing and accessories in gender-stereotypical color patterns (Powell & Abels, 2002). Thus, we hypothesized that male

characters would be more likely shown wearing masculine-stereotyped colors (*Hypothesis 8a*), while female characters would be more likely shown wearing feminine-stereotyped colors (*Hypothesis 8b*).

The clothing and accessories of characters in children's media also tend to be gender-typed (Murnen et al., 2016; Powell & Abels, 2002). Studies found that female characters in children's media were more likely to be portrayed in decorative clothing and accessories (e.g., jewelry, purse), while male characters were more likely to be portrayed in utilitarian clothing and accessories (e.g., carpenter's belt, badge). These differences in the appearance may signal the kinds of roles and activities expected of characters. Thus, we predicted that male characters would be more likely than female characters to be portrayed as wearing masculine-stereotyped utilitarian accessories (*Hypothesis 9a*), whereas female characters would be more likely than male characters to wear feminine-typed decorative accessories (*Hypotheses 9b*).

Different cultural standards of physical attractiveness and body types for women (and girls) and men (and boys) are widely reinforced in mass media. Most notably, this includes a much greater emphasis on thinness for women and muscularity for men (Murnen & Don, 2012). According to one content analysis of television shows targeting tweens, female characters were more likely than male characters to be depicted as thin (Gerding & Signorielli, 2014). Male characters were more likely to be portrayed as having a wider variety of body types. Thus, we predicted thin body types would be more likely and heavy body types less likely among female than male characters (*Hypotheses 10a and 10b*). Conversely, we expected male characters would be more likely than female characters to be muscular (*Hypothesis 10c*).

Relative prominence of female and male lead characters. As noted earlier, we hypothesized that on average shows would feature more male than female characters. Whereas

many shows feature male-lead characters, some programs have female-lead characters (e.g., *Doc McStuffins*) or a mixture of female- and male-lead characters (e.g., *Sesame Street*). To the extent that shows with primarily male lead characters implies a traditional gender bias, we speculated that the predicted stereotypical patterns might be more likely in shows with mostly male leads. Conversely, equal or counter-stereotypical patterns might be more common in shows with mostly female leads or balanced leads. Thus, we tested the gender of lead characters as a moderator variable in each of the analyses. To our knowledge, no prior content analysis of children's television has considered this variable as a moderator.

Method

Selection of Preschool Television Shows

When selecting preschool television shows to include in this study we started with a list of all preschool television shows that were currently on air in the United States. Shows were considered for the preschool audience if they were produced for children approximately age 2 to 6 years of age. Some shows may have been created for and observed by both preschoolers and older children (e.g., *Arthur*). From this pool we selected shows that had at least three new episodes that aired in 2015 or 2016. Our final sample was based on programs that had full episodes from 2015 or 2016 available to view online to allow easy access for coding.

This resulted in 34 preschool television shows across four different networks included in this study (*Disney Jr.*, *Nick Jr.*, *PBS*, and *Sprout*). Three randomly selected episodes were analyzed from those available online and that aired for the first time between 2015 and 2016 for each television series. Many television networks have full episodes of their preschool content available online, as well as on *YouTube*. Indeed, children are increasingly consuming television in online formats, such as on *YouTube* (Burgess & Green, 2013; Dredge, 2015). The length of each sampled episode varied from 17 to 30 minutes (consisting of either one full episode or two

segmented episodes). Most of these television shows were animated (e.g., *Mickey Mouse Clubhouse*). Also, some of the shows included a combination of live action and animation (e.g., *Yo Gabba Gabba*), and some programs included a combination of live action, animation, and puppetry (e.g., *Sesame Street*). A list of the 34 shows included in the content analysis is presented in Table 1. Notably, these included *all* available TV programs meeting our criteria for selection.

Coding

The first author and a female undergraduate research assistant coded the television episodes after attaining satisfactory intercoder reliability. Female and male characters were coded for gender-typed behaviors, aspects of appearance, and the relative prominence of female or male lead characters.

A time-sampling method was used to measure the incidence of various behaviors separately in female and male characters (Bakeman & Gottman, 1997). Each coded behavior was noted for its presence separately for male and female characters in five-second intervals throughout the entire episode. With time sampling, the behavior is checked within a time interval only once regardless of either the number of characters demonstrating the behavior or the number of instances of the behavior. The presence of each behavior was tallied for a sum total of each variable for each gender.

To obtain coding reliability for each variable, the two researchers coded randomly selected ten-minute segments from 10 different preschool television shows. This process was repeated three times, at which point the alpha coefficient for each variable was considered satisfactory. Intra-class correlations (ICC) were calculated to assess inter-coder reliability (Landers, 2015). Good reliability is indicated when ICC values are at least 0.75, and excellent

reliability is reflected when ICC values exceed 0.90 (Koo & Li, 2016). Most observed ICC values were in the excellent range with the minimum ICC value at 0.77.

The definitions for each coded variable are summarized below. Also, the ICC indices of intercoder reliability are indicated in parentheses.

Number of characters (ICC = 0.82). The total number of female characters and male characters who were either named or given speaking roles were tallied for each episode of a show. Character gender was based on appearance or the use of gendered names or pronouns. We separately counted the number of human and non-human characters for each gender. Each character that was counted based on these criteria were evaluated for each of the subsequent variables.

Talkativeness (ICC = 0.98). Talking time for each gender reflected the number of time-sampled intervals when any female or male characters were speaking.

Speech behaviors. Characters' demonstrations of the following supportive speech and suggestions were coded. *Supportive speech* included encouragement, consoling, or emotional advice (ICC = 0.84). *Suggestions* included proposals for action that were not in the form of commands (ICC = 0.77).

Aggressive behavior (ICC = 0.97). Aggressive behavior encompassed direct or indirect acts that potentially harmed another person (e.g., hitting, insulting, negative gossip, social exclusion). Though we originally considered coding direct and indirect aggression as separate categories, aggression in any form was a low occurring behavior. Therefore, we coded both direct and indirect aggression as one variable.

Activities. Masculine-stereotyped activities consisted of *physical activities* emphasizing physical movement ([e.g., running, sports], ICC = 0.95) and *constructive activities* emphasizing

creating or building ([e.g., blocks], ICC = 0.97). Feminine-stereotyped activities included *performance arts* activities emphasizing creative expression ([e.g., singing, dancing], ICC = 0.97) and visual arts activities (ICC = 0.90). Although domestic activities were coded as another form another feminine-stereotyped activity, they occurred too rarely to include in the analyses.

Appearance. Three aspects of appearance were coded: color, accessories, and body type. Each character was coded for the frequency of gender-typed *colors* (ICC = 0.97) as masculine-stereotyped (blue or black/red together) or feminine-stereotyped (pink or purple) (see Halim et al., 2013). Characters were also coded for the frequency of gender-typed *accessories* (ICC = 0.95) as either masculine-stereotyped (e.g., tool belts) or feminine-stereotyped (e.g., jewelry, purses). Characters' outfits were coded for color and accessories one time for each outfit in each episode. Finally, human characters were coded for their *body types* (see Robinson, Callister, & Jankowski, 2008) as average (ICC = 0.97), thin (ICC = 1.0), heavy (ICC = 1.0), or muscular (ICC = 1.0). Each character was coded as having one of these body types.

Relative prominence of female and male lead characters. Each program was classified for the relative prominence of female and male lead characters either as mostly male lead characters (male-led show), as mostly female lead characters (female-led show), or as relatively balanced (mixed-led show). Coders looked at the main cast of each show and counted how many characters in the main cast were male and female characters. When there an imbalance of two or more male or female characters in the main cast, that show was considered male- or female-led. The coders agreed on 32 of the 34 shows. When there was disagreement, the coders discussed and reached agreement. The classification of each show appears in Table 1.

Results

Number of characters was analyzed using the *total frequency* count for male and female characters within each episode. Scores for each other variable were adjusted to control for the

frequency that female or male characters appeared in an episode. The total scores for the occurrences of each of the other variables (based on the time-sampling method described earlier) were divided by the number of characters in each episode that was coded. This resulted in the calculation of *average rates of occurrence* for male and female characters for each variable within each episode. For example, if a variable occurred 20 times among female characters and there were 5 female characters in the episode, the average rate of occurrence would be 4.0 for female characters in the episode. Finally, rates of occurrences for each variable were averaged across all three episodes for each television program.

Preliminary Analyses

We explored if the type of network (*PBS*, *Nick Jr.*, or *Disney Jr.*) moderated any of the hypothesized effects. However, this was not indicated for any of the variables. In additional analyses, we ran bivariate correlations among the behavioral coding categories by character gender (see Table 2).

Testing Hypothesized Gendered Representations

To test most of our hypotheses, we conducted 2 x 3 ANOVAs with the gender (G) of characters as a within-group factor and prominent lead gender (L) as a between-group factor. The results associated with the character gender main effects are summarized in Table 3. In addition, the findings associated with significant G x L interaction effects are presented in Table 4.

In some of our analyses, we included more than one outcome variable (V) in the design as a repeated measure. We did this with masculine-stereotyped activities (construction and physical) and feminine-stereotyped activities (performance arts and visual arts). Thus, these analyses utilized 2 x 2 x 3 ANOVAs, with the character gender (G) as a within-group factor, the variable (V) as a repeated measure, and the prominent lead gender (L) as a between-group factor.

The results are summarized below in relation to our hypotheses. When interpreting η^2 values in ANOVAs, effect sizes are generally considered “negligible” when below .01, “small” when at least .01, “medium” when at least .06, and “large” when .14 or greater (Cohen, 1988). In addition, effect sizes may be considered “very large” when .26 or greater and characterized as “huge” when .50 or greater (Sawilowsky, 2009).

Number of characters. In our first hypothesis, we predicted greater representations of males than females among human characters (Hypothesis 1a) as well as non-human characters (Hypothesis 1b). When making gender comparisons for human characters, we used frequency scores. However, when making gender comparisons for non-human characters we used proportions of all non-human characters because non-human characters and human characters are both present in some shows.

With number of human characters, a significant gender effect with a very large effect size was found for number of characters (see Table 3). As expected, male characters outnumbered female characters. In addition, the G x L interaction was significant, $F(2, 31) = 5.70, p = .008, \eta^2 = .27$. As seen in Table 4, there were more male than female characters in male-led and mixed-led shows (with huge effect sizes), whereas there was no difference in female-led shows.

A similar average gender difference with a very large effect size was seen in the proportional number of male and female non-human characters. Confirming our hypothesis, non-human male characters were represented proportionally more than non-human female characters (see Table 3). The G x L interaction was not significant.

Talking. We predicted higher average talking rates for male than for female characters (Hypothesis 2). There was a significant gender main effect with a medium effect size (see Table

3). However, contrary to our prediction, female characters were depicted talking more than were male characters. Lead gender did not moderate the effect.

Supportive speech. Female characters were hypothesized to be depicted using more supportive speech than male characters. There was neither a significant gender main effect nor any significant interaction effect. Thus, the results did not confirm Hypothesis 3.

Suggestions. Our next set of hypotheses was that male (vs. female) characters would be depicted using a higher rate of suggestions (Hypothesis 4). The gender main effect did not reach statistical significance (see Table 3). The G x L interaction approached statistical significance, $F(2, 31) = 2.75, p = .080, \eta^2 = .15$. We conducted follow-up tests to see if any simple effects were significant. Indeed, suggestions were significantly more likely (with huge effect sizes) among female than male characters in shows with female leads (see Table 4). There were no significant differences in male and female characters' use of suggestions in male-led or mixed-led shows (see Table 4). Thus, the hypothesized higher rate of suggestions among male than female characters was not confirmed. However, the expectation that counter-stereotypical patterns would be seen in shows with female lead characters was supported.

Aggression. We hypothesized higher rates of aggression among male than female characters (Hypothesis 5). Overall, aggressive behavior was infrequent (see Table 2). A nearly significant ($p = .058$) gender effect was found with a medium effect size (see Table 3). When it was depicted, aggressive behavior tended to be more likely for male characters than female characters. Although the gender difference did not reach the criterion for statistical significance, it is notable that a moderate effect size was indicated. Nonetheless, given the behavior's low occurrence, this nonsignificant trend should be viewed cautiously.

Masculine-stereotyped activities. As explained earlier, we conducted a $G \times V \times L$ ANOVA with masculine-stereotyped activities (with constructive and physical activities as repeated measures). We predicted higher rates of constructive activities and physical activities among male than female characters (Hypotheses 6a and 6b). There was a significant gender main effect, $F(1, 31) = 5.00, p = .033, \eta^2 = .14$, and a significant $G \times V$ interaction, $F(2, 31) = 4.68, p = .038, \eta^2 = .13$. Follow-up tests revealed a significant gender effect with physical activities, but not with constructive activities (see Table 3). Contrary to our prediction, however, physical activities were more common among female characters than male characters. Thus, no support for Hypotheses 6a or 6b was indicated.

Feminine-stereotyped activities. We ran a $G \times V \times L$ ANOVA with feminine-stereotyped activities (including both performing arts and visual-arts activities as repeated measures). Higher rates of performing arts and visual arts activities were expected among female than male characters (Hypotheses 7a and 7b). There was a significant gender main effect, $F(1, 31) = 8.88, p = .006, \eta^2 = .22$, and a significant $G \times V$ interaction, $F(2, 31) = 7.62, p = .010, \eta^2 = .20$. Lead character was not a significant moderator in the ANOVA. Overall, both activities were more likely depicted for female than male characters, although this was especially likely for performing arts activities. Performing arts activities were significantly more common (with a large effect size) among female characters than male characters (see Table 3). Visual-arts activities infrequently occurred (see Table 2). The gender effect for visual-arts activities was nonsignificant ($p = .083$), although the mean difference was associated with a medium effect size in the hypothesized direction (see Table 3).

Gender-typed appearance. We predicted that male and female characters would be more likely to be shown wearing masculine- and feminine-stereotyped colors, respectively

(Hypotheses 8a and 8b). Contrary to prediction, no difference in the rates of masculine-stereotyped colors was seen between male and female characters (see Table 3). However, as hypothesized, there was a significant gender difference with a huge effect size in feminine-stereotyped colors (see Table 3). These colors were significantly more frequent among female characters than male characters.

In the next hypotheses, we predicted male and female characters would be more likely to be depicted wearing masculine- and feminine-stereotyped accessories, respectively (Hypotheses 9a and 9b). Both predictions were confirmed. Masculine-stereotyped utilitarian accessories were more likely worn by male than female characters with a huge effect size (see Table 3). Conversely, feminine-stereotyped decorative accessories were more likely worn by female than male characters with a huge effect size (see Table 3).

In our last set of hypotheses, we posited that thin body types would be more likely and heavy body types less likely among female than male characters, whereas muscular body types would be more likely among male than female characters (Hypotheses 10a, 10b, and 10c). Thin, heavy, and muscular body types were generally infrequent across all characters. Nonetheless, as expected, heavy body types were significantly more likely (with a medium effect size) among male than female characters. The other hypothesized body type differences were not confirmed (see Table 3). For thin body types (which were rarely depicted), there was no difference between female and male characters. Similarly, for muscular body types (which also rarely occurred), no difference was seen between male and female characters. However, consistent with our prediction, muscular body types were seen only in male characters. Finally, although no hypothesis was advanced regarding average body types, they were significantly and substantially more likely among female than male characters (see Table 3).

Discussion

We conducted a content analysis of gender representations in 34 contemporary television programs designed for preschool-age children. The media is widely considered to influence the development of children's understanding of the world (e.g., Gerbner, 1998) including preschool children's emerging beliefs about gender roles (Bussey & Bandura, 1999; Calvert & Huston, 1987; Martin et al., 2002). As highlighted in cognitive theories of gender development, media representations about gender are incorporated into children's gender schemas – which, in turn, shape their beliefs and behaviors regarding gender (Martin et al., 2002) as well as their own gender-typed behavior (Coyne et al., 2014; Coyne et al., 2016). Therefore, it is pertinent that our analyses revealed ways that gender continues to be represented in biased and stereotypical ways in contemporary television programs aimed at preschool-age children.

To our knowledge, our study is the first comprehensive content analysis of television designed for the preschool audience. When significant gender differences were indicated, the effect sizes were typically substantial in magnitude. At the same time, we noted variability in these representations with some stereotypical patterns being less likely in shows with mostly female lead characters. Finally, as explained below, some gender differences previously observed in shows targeting older children were not indicated in the present analysis.

Number of Characters

One of the most pervasive forms of gender bias in television shows across age levels is the predominance of male characters. Consistent with prior content analyses of television programs and movies aimed at older children (see Signorielli, 2012), we observed an average of twice as many male than female characters in preschool television. This difference signals to children that it is “a man's world.” That is, children see that boys and men are more likely to

inhabit a greater number of spaces than are girls and women (Smith et al., 2016). Another related message is that the stories of boys and men are more valued than those of girls and women.

When the gender of lead characters was taken into account, the gender difference in number of characters was only significant in television shows with male leads or mixed leads. There was no average gender difference in number of characters in shows with female leads. It is promising that shows with female leads have more equal gender representation of their characters. We know that children who watch nontraditional gender portrayals on television are less likely to hold gender-stereotyped attitudes and beliefs (see Signorielli, 2012). However, it is worth noting that only 20% of the sampled preschool television shows had mostly female lead characters. Furthermore, in female-led shows, there was gender parity in number of characters (rather than a majority of female characters). Nonetheless, it is positive news that this occurred in more than a handful of shows, but there is still a need for more female-led television shows.

Talking

Another difference was seen in the average amount of talking depicted for female and male characters. However, contrary to our expectation, higher average talking occurred among female than male characters. The gender of lead characters did not moderate this result. Some prior studies of television programs aimed at older audiences, have reported higher rates of talking among male than female characters (see Signorielli, 2012). However, in one content analysis of children's animated television programs, there was no significant gender difference in talking (Leaper et al., 2002). This finding in our study, that female characters were more likely to talk than were male characters may be representative of reinforcing or counteracting gender-stereotypes. On the one hand, the observed average difference in our content analysis may reflect the gender stereotype of females being more talkative than males (see Leaper, 2014). On the

other hand, it may reflect a more positive representation of female characters who are given (figuratively and literally) a prominent voice in the episodes.

Supportive Speech and Suggestions

Our analysis of characters' uses of supportive speech did not confirm our hypotheses. That is, female and male characters used similar amounts of supportive speech. However, supportive speech was a relatively infrequent behavior. Furthermore, given the emphasis on prosocial and educational themes in preschool-age television (Linebarger, Brey, Fenstermacher, & Barr, 2017), television producers may intentionally seek to depict most characters in affiliative ways.

Based on traditional gender roles associating instrumental behavior with boys, we expected higher rates of suggestions among male than female characters. This was not indicated. However, when the gender of lead characters was taken into account, female characters used significantly more suggestions in shows with female lead characters. As expected, counter-stereotypical behavior was more likely in female-led shows. In contrast, we found no average difference in suggestions in shows with male or mixed leads.

In general, lead characters may use more instrumental speech than supporting characters. One prior study comparing the assertiveness of male and female superheroes found no difference based on the gender of the show's lead superhero character (Baker & Raney, 2007). If female characters are regularly portrayed as leaders, children may incorporate ideas of female leadership and assertiveness into their gender schemas and hold less rigid gender representations (Keys, 2016; Ryan, 2010).

Aggression

In the analyzed programs for preschool children, aggression rarely occurred. When aggressive behavior occurred, however, there was a nearly significant difference ($p = .058$) with

a medium effect size toward greater depictions of aggression by male than female characters. Although the effect did not reach statistical significance, the trend is in line with previous research of television shows aimed at older children going back several decades (Barner, 1999; Murnen et al., 2016, Signorielli, 2012, Sternglanz & Serbin, 1974). The Children's Television Act, instituted in 1990, prohibits violence in educational preschool television (Federal Communications Commission, 2017), which may explain why the portrayal of aggression was infrequent in this sample. Despite its rare occurrence, the depiction of aggression (especially physical aggression) more in male characters may be particularly salient and impactful on young viewers' developing gender schemas in light of multiple cultural messages linking aggression and gender (Ostrov, Gentile, & Crick, 2006).

Gender-Stereotyped Activities

When types of activities were examined, we observed two feminine-stereotyped activities (performing arts and visual arts) were more often seen in female than male characters. These differences in representation may perpetuate stereotypes about the relative acceptability of these behaviors for girls and boys. Studies with older children indicate that performing arts are viewed as feminine-stereotypical pursuits (Lagaert, Van Houtte, & Roose, 2017).

Our hypotheses regarding the portrayals of masculine-stereotyped activities (construction and physical activities) were not confirmed. There was no average gender difference in characters' engagement in construction activities. These behaviors rarely occurred. When characters did engage in constructive activities, it was usually limited to a single constructive-themed episode (e.g., building a tree house) or a constructive-themed show (e.g., *Bob the Builder*). It may be useful to examine this activity within these particular episodes or shows to assess whether differences between male and female characters' engagement in constructive activities differs.

We did not find support for our hypothesis that male characters would be more likely than female characters to be depicted in physical activities. Instead, we found the opposite pattern. We suspect this may have been at least partly due to our coding. Dancing was always classified as a performing arts activity, but it was additionally classified as a physical activity when it involved a high degree of physicality. Dancing may be a way to portray characters being physical while maintaining a stereotypical representation of the types of activities in which girls like to engage (Lemish, 2010).

Overall, we observed more consistent gender differences in the depiction of feminine-stereotyped activities than masculine-stereotyped activities. Indeed, there were no significant differences in the analyzed masculine-stereotyped activities. This pattern may reflect the greater pressure typically exerted on boys than girls to avoid cross-gender-typed behavior (see Leaper, 2013).

Gender-Typed Appearance

Besides looking at the characters' behaviors, we also analyzed aspects of their portrayed appearances. As expected, female characters were more likely than male characters to be wearing feminine-stereotypical colors (pink and purple). The television representations may inform and reinforce many preschool-age girls' attraction to pink and purple things (Halim et al., 2014). In contrast, we did not find a difference in masculine-stereotypical colors (blue or red/black combined). Thus, consistent with patterns seen among real children, there was stronger tendency for boys to avoid feminine-stereotyped attributes than for girls to avoid masculine-stereotyped attributes (see Leaper, 2013). As noted above, a similar pattern was observed in the gendered depiction of activities.

In addition, we found gender-stereotypical portrayals of characters in the kinds of accessories they wore. As expected, male characters were more apt to wear masculine-

stereotyped utilitarian accessories (e.g., tool belt), while female characters were more likely shown with feminine-stereotyped decorative accessories (e.g., jewelry). These are subtle ways in which children infer how girls and boys are supposed to appear and act. Gender-typed colors and accessories mark gender (Halim et al., 2014). These cues make gender highly salient for young children and contribute to the rigidity of their gender stereotyping (Halim et al., 2016).

When we tested for differences in represented body types, female characters were less likely than male characters to be shown with heavy body types. Although female characters were not more likely to be portrayed as thin, preschool television still may be sending a message to children that girls and women should not be heavy or overweight (Murnen & Don, 2012). The lack of differences in muscular and thin body types may reflect the younger child characters more common in preschool-age children's programs.

Limitations and Future Directions

Despite the potential contributions of our content analysis, we acknowledge some of its limitations. First, we only examined television shows in the United States. Many of these shows are consumed in other countries. Also, researchers have found similar patterns of gender stereotyping in children's television worldwide (Gotz et al., 2008). Another limitation is that some of the behaviors we examined were low in occurrence in the examined preschool television programs. Low rates of occurrence may have contributed to the trends approaching statistical significance associated with aggressive behavior and visual-arts activities. In addition, there are other possible coding categories and associations among variables to consider in future content analyses. For example, these analyses might consider examining how the most prominent characters are portrayed or whether gender-stereotyping in particular domains are related (e.g., speech and action).

We recommend that researchers conduct content analyses of gender-stereotyped representations in children's media periodically every decade or so. This would enable researchers to evaluate whether these patterns are changing with time. Thompsons and Zerbinos (1995) sought to make this kind of evaluation in their content analysis, but this was conducted over 20 years ago.

In the future, we hope to see more studies considering ways that intersecting identities are depicted in children's television. It may be possible to get a more accurate understanding of gender portrayals by considering gender nonbinary or genderqueer identities, ethnicity, age, or other demographics of the characters in each episode (e.g., see Keys, 2016; Jane, 2015; Ryan, 2010). Children may relate most to characters who touch upon multiple of their own identities. However, the lack of diversity of intersecting identities present contemporary children's programming presently limits this kind of analysis.

Conclusions

Television and electronic media have become more pervasive in children's lives over the decades (Ridehout et al., 2003). Based on prior research guided by cognitive theories in developmental psychology (e.g., Bussey & Bandura, 1999; Halim et al., 2016; Martin et al., 2002) and cultivation theory in media studies (e.g., Gerbner, 1998), we know these images shape how children view the world. Media representations of gender inform children's mental models of gender, known as gender schemas, that guide how they interpret the world as well as the kinds of behaviors seen as desirable for their gender (Halim et al., 2016; Martin et al., 2002). Accordingly, it remains necessary to analyze how gender is represented in media and to push for improvements in the ways that characters are represented regardless of their gender (and identities). These efforts are especially important during the preschool years when children are

establishing their understandings of gender while holding relatively rigid beliefs (Halim et al., 2016).

To our knowledge, the present study constitutes the first content analysis to consider gender representations of characters in television shows aimed at preschool-age children. We detected fewer gender differences than reported in some of the prior content analyses of gender representations in programs aimed at older children. Because many of the shows for preschool-age audiences that we examined were created within recent years, we cannot rule out that there may be a modest trend toward more gender-egalitarian representations across all children's programming. Because some traditional gender-role pressures regarding appearance and other behaviors intensify for many children as they enter adolescence (see Leaper, 2013), gender stereotypes may be more common in shows directed toward tweens and teens (e.g., Gerding & Signorilli, 2013; Kirsch & Murnen, 2015).

Finally, looking ahead, we hope our findings will prove useful to individuals and organizations working to influence the producers of children's television programming. For example, organizations such as the Geena Davis Institute on Gender in Media (www.seejane.org) and Media Watch (www.mediawatch.com) have increased the public's awareness of gender stereotyping and bias in the media. Also, these and other groups seek to influence entertainment leaders and content creators to improve how gender is represented. Increasing more diverse representations of gender in the media can help all children learn there are multiple ways that they and other individuals can express themselves as they develop.

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Table 1

Preschool Television Programs Included in Content Analysis By Network and Gender Lead Characters

Television Program	Network	Gender Lead
<i>Arthur</i>	<i>PBS</i>	Mixed
<i>Blaze and the Monster Machines</i>	<i>Nick Jr.</i>	Male
<i>Bob the Builder</i>	<i>PBS</i>	Male
<i>Bubble Guppies</i>	<i>Nick Jr.</i>	Mixed
<i>Curious George</i>	<i>PBS</i>	Male
<i>Daniel Tiger's Neighborhood</i>	<i>PBS</i>	Male
<i>Dinosaur Train</i>	<i>PBS</i>	Mixed
<i>Doc McStuffins</i>	<i>Disney Jr.</i>	Female
<i>Fresh Beat Band of Spies</i>	<i>Nick Jr.</i>	Mixed
<i>Henry Hugglemonster</i>	<i>Disney Jr.</i>	Male
<i>Jake & the Neverland Pirates</i>	<i>Disney Jr.</i>	Male
<i>Lalaloopsy</i>	<i>Nick Jr.</i>	Female
<i>Little Charmers</i>	<i>Nick Jr.</i>	Female
<i>Mickey Mouse Clubhouse</i>	<i>Disney Jr.</i>	Male
<i>Miles from Tomorrowland</i>	<i>Disney Jr.</i>	Male
<i>Nature Cat</i>	<i>PBS</i>	Mixed
<i>Paw Patrol</i>	<i>Nick Jr.</i>	Male
<i>Peg + Cat</i>	<i>PBS</i>	Mixed
<i>Peter Rabbit</i>	<i>Nick Jr.</i>	Mixed
<i>PJ Masks</i>	<i>Disney Jr.</i>	Mixed
<i>Sarah and Duck</i>	<i>Sprout</i>	Female
<i>Sesame Street</i>	<i>PBS</i>	Mixed
<i>Sheriff Callie's Wild West</i>	<i>Disney Jr.</i>	Female
<i>Shimmer and Shine</i>	<i>Nick Jr.</i>	Female
<i>Sofia the First</i>	<i>Disney Jr.</i>	Female
<i>Super Why!</i>	<i>PBS</i>	Mixed
<i>Super Wings</i>	<i>Sprout</i>	Male
<i>Team Umizoomi</i>	<i>Nick Jr.</i>	Mixed
<i>The Lion Guard</i>	<i>Disney Jr.</i>	Male
<i>The Octonauts</i>	<i>Disney Jr.</i>	Male
<i>Thomas and Friends</i>	<i>PBS</i>	Male
<i>Wallykazam</i>	<i>Nick Jr.</i>	Male
<i>Wild Kratts</i>	<i>PBS</i>	Mixed
<i>Yo Gabba Gabba</i>	<i>Nick Jr.</i>	Male

Table 2

Descriptive Statistics and Bivariate Spearman Correlations Among Behavioral Measures by Character Gender

	Talk	Aggress	Suggest	Support	Physical	Construct	Perform	Visual
Talk	--	.02	.65 ^{***}	.39 [*]	.81 ^{***}	.14	.21	.05
Aggress	.03	--	-.12	-.29	-.06	-.32	-.32	.00
Suggest	.53 ^{**}	.24	--	.25	.59 ^{***}	.14	.29	-.06
Support	.32	-.13	.59 ^{***}	--	.43 [*]	.12	.10	.26
Physical	.39 [*]	.28	.71 ^{***}	.39 [*]	--	.17	.06	.18
Construct	-.05	-.08	-.11	.26	-.19	--	-.05	.45 ^{**}
Perform	.60 ^{***}	-.25	.37 [*]	.31	.12	-.10	--	-.10
Visual	.77 ^{***}	-.12	.27	.24	.09	.25	.37 [*]	--
M_{female}	35.91	0.31	1.71	1.60	7.45	0.60	7.12	0.39
SD_{female}	15.39	0.46	1.32	1.16	5.81	1.66	8.55	1.01
M_{male}	28.64	0.42	1.43	1.15	5.18	0.51	3.87	0.06
SD_{male}	12.36	0.58	1.28	0.66	3.87	0.70	4.06	0.12

* $p < .05$. ** $p < .001$. *** $p < .001$.

Note. Spearman correlations for male characters appear above the diagonal; and correlations for female correlations appear below the diagonal. Correlations are based on scores for 34 shows. Physical = physical activity. Construct = Construction activity. Perform = performing arts activity. Visual = visual arts activity.

Table 3

Means by Character Gender

Variable	Female Characters <i>M (SD)</i>	Male Characters <i>M (SD)</i>	<i>F</i>	<i>p</i>	η^2
Number of human characters	4.11 (2.21)	8.62 (3.41)	20.82	< .001	.40
Number of non-human characters	0.43 (0.38)	0.51 (0.31)	17.66	< .001	.38
Talking	35.40 (15.62)	29.83 (12.96)	7.35	.011	.19
Supportive speech	1.60 (1.04)	1.34 (0.71)	0.08	.106	.08
Suggestions	1.77 (1.16)	1.52 (1.11)	2.71	.110	.08
Aggression	0.31 (0.46)	0.42 (0.58)	3.86	.058	.11
Physical activities	7.45 (5.41)	5.18 (3.87)	5.15	0.30	.14
Constructive activities			0.04	.835	.00
Performing arts activities	7.12 (8.55)	3.87 (4.06)	8.47	.007	.22
Visual-arts activities	0.39 (1.01)	0.06 (0.12)	3.20	.083	.09
Masculine-stereotyped colors	0.75 (0.78)	0.98 (0.62)	0.73	.399	.03
Feminine-stereotyped colors	2.17 (1.98)	0.26 (0.29)	30.93	< .001	.52
Masculine-stereotyped accessories	0.12 (0.28)	0.37 (0.26)	31.50	< .001	.52
Feminine-stereotyped accessories	0.83 (0.83)	0.02 (0.26)	40.17	< .001	.58
Heavy body types	0.01 (0.03)	0.03 (0.05)	4.94	.034	.15
Thin body types	0.06 (0.19)	0.04 (0.08)	0.33	.572	.01
Muscular body types	0.00 (0.00)	0.02 (0.08)	1.69	.204	.06
Average body types	0.50 (0.36)	0.38 (0.27)	11.03	.002	.28

Note. $df = 1, 31$. Above results are based on 2 (Character Gender) x 3 (Show Lead Gender) ANOVAs.

Table 4

Means by Character Gender (G) x Show Lead Gender (L)

Variable	Female Characters M (SD)	Male Characters M (SD)	F	p	η^2
Number of Characters					
<i>Female leads</i>	5.52 (2.16)	5.48 (4.38)	0.00	.983	.00
<i>Male leads</i>	3.36 (1.91)	8.69 (2.50)	62.95	.000	.82
<i>Mixed leads</i>	3.67 (1.61)	7.00 (3.82)	15.53	.002	.57
Suggestions					
<i>Female leads</i>	1.99 (.77)	0.94 (.80)	6.66	.042	.53
<i>Male leads</i>	1.34 (.93)	1.67 (1.22)	0.90	.359	.06
<i>Mixed leads</i>	2.17 (1.47)	1.68 (1.10)	1.27	.284	.10

Note. $n = 7$ shows with female lead characters; $n = 15$ shows with male lead characters; $n = 12$ shows with mixed lead characters. Above analyses are based on significant G x L interaction effects for number of characters: $F(2, 31) = 20.82, p < .001, \eta^2 = .40$; and for suggestions: $F(2, 31) = 2.75, p = .080, \eta^2 = .15$.