

Running head: NEW TOYS FOR TOTS

New Toys for Tots: What Preschoolers Identify as "Boy and Girl Toys"

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Abstract

Interaction with toys can be seen as the gateway to many aspects of children's socialization and cognitive development in early childhood. The present study examined the reasoning of two- to five-year-old boys' and girls' classifications of toy pictures. A total of 49 children were shown male, female, neutral, and ambiguous toy pictures and asked to identify "boys'" and "girls'" toys and to comment why they had made these choices. The preschoolers showed differential stereotyping by age groups and gender. Older children and boys held stronger gender stereotype preferences than younger children and girls. Boys were more likely than girls to identify neutral and ambiguous toys as masculine toys. The most common reasons for associating toys with a particular sex were based on egocentric thinking (an interest in playing with the toy) and gender association.

New Toys for Tots: What Preschoolers Identify as "Boy and Girl Toys"

Children's play is an important developmental opportunity that serves as a basis for the socialization of cultural knowledge. Interaction with toys can be seen as the gateway to many aspects of children's socialization and cognitive development in early childhood. As children are socialized, whether it is by parents, peers, or teachers, they begin to develop gender roles and gender stereotypes. According to Fagot and Leinbach (1989), children live in a sex-typed world that guides their "appropriate" gendered behaviors. Children determine appropriate or inappropriate gender-related behaviors or ways of responding to their environment as either male or female very early in life. According to Martin and Halverson (1981) as soon as children have the ability to label themselves and others as males or females (i.e., gender identity), they are ready to respond to and categorize information on the basis of culturally reinforced gender roles. Because children live in a sex-typed world, this process results in schemata that guide the choices of "sex-appropriate" behaviors and the knowledge of the action patterns necessary for carrying them out. Schema formation depends on the child's own mental effort and developmental status, but the information being processed reflects the child's experience with sex typing (Fagot & Leinbach, 1989). Although viewpoints differ slightly as to the specific components of the gender schemata, most researchers agree that gender-schematic processing consists of both a knowledge component and an affective, value-laden, motivational component (e.g., Fagot & Leinbach, 1993; Levy & Carter, 1989; Liben & Signorella, 1993; Martin & Halverson, 1981; Signorella, Bigler, & Liben, 1993; Stangor & Ruble, 1987; Welch-Ross & Schmidt, 1996).

The knowledge component of gender schemata develops early in life and increases rapidly throughout preschool and early childhood (e.g., Huston, 1985). Between 9-12 months of age some children are able to match the face and voice of women (Poulin-Dubois, Serbin, Kenyon, & Derbyshire, 1994). By 18 months of age girls can match girls' and boys' faces with

gender-stereotyped toys (Serbin, Poulin-Dubois, Colburne, Sen, & Eichstedt, 2001). Boys and girls begin making sex-typed toy selections by 18-20 months of age (e.g., Caldera, Huston, & O'Brien, 1989; Cherney, Kelly-Vance, Glover, Ruane, & Ryalls, 2003; Fagot, 1974, 1978; Fein, Johnson, Kosson, Stork, & Wasserman, 1975; O'Brien & Huston, 1985; Servin, Bohlin, & Berlin, 1999). By two to three years they have begun to form stereotypes about gender-related activities (e.g., boys like to play with cars), traits (e.g., boys are loud) and future roles (e.g., girls will become nurses) (e.g., Fagot, 1974). They also have acquired gender identity and can accurately label pictures of girls and boys (Campbell, Shirley, & Caygill, 2002). By age three, they display knowledge of gender stereotypes for toys and gender roles (Edelbrock & Sugawara, 1978). Fagot and Leinbach (1989) showed that children, who gender stereotype objects and behaviors according to familial interactions early, remain more aware of cultural stereotypes at age four. Interestingly, Fagot, Leinbach, and Hagan (1986) found that equal preference for sex-typed toys was demonstrated by children who could and who could not use gender labels correctly.

Gender schema theory (Martin & Halverson, 1981) would predict that children reason about gender following a specific pattern. Young children decide if the toy is for boys or for girls based on their preexisting beliefs about which toys are liked by boys and girls. Later, they compare their answer with the knowledge that they have about their own sex. In other words, boys may reason that because boys typically play with vehicles and because they are a boy, other boys would probably like to play with vehicles as well (see also Martin, Eisenbud, & Rose, 1995). Thus, one could expect that children would use a "gender-centric" (Martin et al., 1995, p. 454) or "egocentric pattern" of reasoning. Their own opinion about the attractiveness of a toy serves as a criterion combined with their beliefs about boys and girls, for making judgments about same-sex children's interest in the toy. In other words, a boy might reason that because he likes a particular toy, other boys would like the toy as well, but girls would not like that toy.

Forming such implicit theories can be expected based on assumptions that category members share some deep properties or essences (Gelman, 1989; Gelman & Markman, 1986; 1987).

Eisenberg, Murray, and Hite (1982) found that three- and four-year-old children used sex-role oriented thinking when justifying choices regarding other children's likes and dislikes. However, regarding their own toy choices, children tended to reason based on the function of the toy (what the toy can do) and personal dislikes. These findings suggest that although children are capable of sex-typed reasoning, they do not often make decisions about toy preferences based on their conscious understanding of sex-role stereotypes. Furthermore, Martin et al. (1995) showed that four- to five-year-old children make toy choices based on toy attractiveness and gender labels, particularly with own-sex labeled toys. They tended to show a gender-centric pattern of responding when making decisions about unfamiliar and familiar toys, suggesting that gender is salient even for unfamiliar objects.

Due to children's frequent encounters with toys, these objects play a critical role both in the process of sex typing, the formation of gender-based preferences and stereotypes, and behavioral sex differences early in life (Caldera et al., 1989; Cherney & Ryalls, 1999). Caldera et al. (1989) examined parent-child dyads' interactions while playing with toys and found that the type of toy (masculine or feminine) influenced the physical proximity and verbal exchanges between parents and their children in play settings, with feminine toys eliciting closer proximity and more verbal interactions than masculine toys. Similarly, Cherney et al. (2003) found that feminine toys elicited more complex play behavior than masculine toys (as measured through the number of play sequences). These findings suggest that sex-typed toys may encourage different stereotyped behaviors, different types of play, and different learning opportunities.

Many studies have shown gendered play preferences (e.g., Bradbard & Endsley, 1983; Carter & Levy, 1988), but they have not specifically addressed why certain toys may be more attractive to boys and girls (Campbell et al., 2002). How does one explain the tendency for

children to prefer sex-typed toys and dislike opposite-sex toys? Due to socialization, children may develop toy preferences based on characteristics of the toys which are derived from their previous exposure to sex-appropriate toys, or children's knowledge of sex-role stereotypes may lead to sex-typed toy preferences. For example, girls may imitate their mother's cooking and boys their father's driving. A consequence of children selecting own-sex-stereotyped toys is that it may limit their experiences (Bem, 1975). Because different types of toys encourage different types of play and learning (Connor & Serbin, 1977; Cherney et al., 2003), it is important to more fully understand how children make decisions about what toys they choose to play.

Cultural stereotypes are typically the foundation for children's toy choices (Eisenberg et al., 1982). Young boys typically play with vehicles, construction sets, and manipulative toys, whereas girls play with dolls and stuffed animals (Bradbard & Parkman, 1983; Miller 1987). Boys as young as 16 months prefer looking at vehicles and girls at dolls (Serbin et al., 2001). "Pink is for girls, blue is for boys" often describes a highly visible aspect of American culture. Advertisers use the prevalence of color stereotypes and incorporate them into their marketing strategies. Picariello, Greenberg, and Pillemer (1990) found that preschool children used color to predict another child's sex and that clothing color influenced predictions of behaviors and attitudes of other children whose sex was known. Other researchers have noted that in toy choices and free drawings, boys tend to pay more attention to object movement and location, whereas girls tend to assign greater attention to form and color (Alexander, 2003; Minamoto, 1985). Parental preferences for specific sex-stereotyped toys also influence children's toy choices. Peretti and Sydney (1984) showed that 91% of boys' and 81% of girls' toy preferences were congruent with their parents' preferences. Several studies report stronger own-sex preferences for boys than girls (e.g., Carter & Levy, 1988; O'Brien, Huston, & Risley, 1983) and boys are also more likely than girls to pick opposite-sex toys as most disliked (Eisenberg et al., 1982). Boys are also more likely than girls to request gender-stereotyped toys (Robinson &

Morris, 1986). Servin, Bohlin, and Berlin (1999) suggested that toys that are rated as feminine toys become less interesting for both girls and boys as the children age. In addition, Martin, Eisenbud, and Rose (1995) showed that four- to five-year-old children demonstrated the “hot potato” effect. That is, regardless of toy attractiveness, children tend to like toys less that are labeled for the other sex. Even attractive toys are avoided if they are labeled as appropriate for the other sex.

Peers have also been shown to influence toy and play preferences. Children seem to be more prone to adhere to own-sex gender roles in front of their peers than when they are alone (Banerjee & Lintern, 2000). Banerjee and Lintern (2000) found that peer groups were likely to show disapproval for play behavior that was inconsistent with their own sex.

Children are familiar with many toys, and have therefore accumulated a knowledge base about the gender appropriateness of these toys. It is therefore advantageous to use novel or gender-neutral toys to assess children’s gender-based reasoning. Little attention has been given to gender reasoning about new toys and toys that are marketed to both sexes. To increase market share, toy manufacturers are interested in marketing toys that appeal to boys and girls. Thus, exposing children to attractive toys without explicit gender labels may provide additional insight into gender-based reasoning and children’s expectations about others’ preferences. It may also indicate whether children make gendered judgments based on characteristics of toys and/or based on knowledge of sex-role stereotypes.

The present study examined age and gender differences in preschoolers’ gender-typing of 28 new toys. Two-to five-year-old children were shown gendered (masculine, feminine), neutral, and ambiguous toy pictures and asked to identify these as either a “boy toy” or a “girl toy” and to comment why they had made these choices. The video-taped interviews were coded for verbalizations and sorting behaviors. We hypothesized that children would attribute a same-sex label for toys that they perceived as attractive (egocentric pattern). That is, children’s abstract

theories about gender groups would guide some of their reasoning. We expected that younger children would identify fewer reasons for their judgments than older children. We also predicted that color and functionality of the toy would be used as frequent reasons to assign the gender category. Boys and older children were expected to have stronger own-sex stereotypes.

Method

Participants

A total of 49 predominantly European-American children (28 girls and 21 boys) of two Midwestern cities with ages ranging from 28 to 71 months ($M = 54.72$ $SD = 11.61$) participated. There were a total of 9 two- and three year-olds, 23 four-year-olds, and 17 five-year-olds. Participants were recruited through local early education centers and preschools and received stickers as compensation for their participation. All children came from middle-class suburban areas.

Materials

To elicit children's reasoning, ten adult judges selected 28 new toys from the "Toys R Us" website (April 2004) for their novel quality, sex typing, originality, and ambiguity. Ten different colored construction papers also served as stimuli. Each toy picture was printed with a color laser printer on a 8x11" sheet of white paper. Adults classified toys as "ambiguous" when these displayed characteristics that can be considered appropriate for boys and girls, but that would not necessarily fit into a gender-neutral category. For example, the toy function may point toward a masculine toy, but the color might indicate a feminine toy. Ten adults categorized each toy as either *masculine* (Little Builder Belt, Fire Truck, Blue Car, Riding Transformer, Balls, Batmobile), *feminine* (Crayola Purse, Pink Car, Stuffed Simba, Stuffed Pug, My Little Poney, Roller Skates), *neutral* (Pound a Ball, Dori, Merlin, Guitar, Fire Truck Puzzle, Hogwarts Castle, Harry Potter Figurine), and *ambiguous* (Dora Pool, Phonics Radio, Frogabet, Busy Ball Popper, Elmo, Silly 6 Pins, Magic Screen, Play Doh). Note that the feminine pink car (Fisher Price) was

exactly the same as the masculine blue car, as its color was altered using Photoshop software. To identify the children's gendered choices, two boxes with a boy and girl picture on it were created. All interviews were videotaped using a Canon ZR60 videocamera, downloaded to a Gateway computer, and viewed using Microsoft Windows MovieMaker V 2.0.

Procedure

The children's parents signed a consent form on behalf of their children. The interviews were completed either at a daycare or preschool setting. A pilot study of eleven participants indicated that showing our originally chosen 32 pictures was too long considering the children's attention span. The child first met the investigator in an assigned area of the daycare or preschool that was reserved for the study. The investigator showed the child the "boys' toy" or "girls' toy" boxes and described the procedures. To establish gender identity, each child was first asked what they would be when they grow up. For each presented toy picture the investigator asked the participant whether the toy was a "boy toy" or "girl toy" and why. The child was then given the picture to be placed in either of the two boxes. When the child did not volunteer any reason for his/her choice, the experimenter asked a brief series of standardized questions. Biasing was avoided as much as possible by using scripted questions. This process was repeated for each toy picture. The experimenter repeated everything the child said to ensure that the videotaping would pick up the child's speech. After the toy pictures, each child was shown a total of ten colored construction sheets which s/he identified as a "boy" or "girl" color. The participants were encouraged to speak freely throughout the interview. The toy pictures were presented in five counterbalanced presentation orders.

Coding and Classification

The participants' responses were coded for gender classification (tray choice: boys' toy, girls' toy) and reasoning. Gender classification was coded by counting the number of toys identified by the participants as masculine toys or feminine toys. Although we did not display a

box for toys that would fit a “both” category, when children mentioned the toy was for boys and girls, we coded their answers as “both.”

The oral responses were classified into nine different reasoning categories. Toys associated with a particular gender were coded as *gender association* (GA). For example, “Dora the Explorer swimming pool” was commonly labeled as a “girls’ toy” because “Dora is a girl.” *Color* (C) was commonly used to distinguish the toys such as the blue and pink “Fisher Price Little People car.” The pink car was typically labeled as a “girls’ toy” because “pink is a girl color.” If the child owned the respective toy or knew someone who owned the toy, that toy was coded as *familiarity* (F). Responses from children who disliked a toy because they were not interested in playing with it were classified under *non-interest* (NI). Responses that included such reasoning as “girls like it,” “boys like it” or “I’d like to play with it” were categorized as *egocentric* (E) (Martin et al., 1995). In this type of reasoning, both boys and girls generalized their preferences to other children of the same sex by stating, “I’m a girl/boy and want to play with this toy and so other girls/boys will too.” The reasoning category identified as *sex role* (SR) included instances where participants likened the toys to a job. For example, the Little Builder Belt was identified as a “boy toy” because “tools are for fixing and only boys fix.” When explaining their reasoning, participants also pointed out *specific characteristics* (SC) of the toys to support their choices. For example, the Phonics Radio was commonly labeled a “boy toy” because “it has a frog on it and frogs are for boys.” Occasionally, participants realized that a toy they had *previously seen* (PS) was similar to the toy they were now being presented and therefore they categorized the toy in front of them in the same manner they had categorized the previous toy. For example, when the Fire Truck Puzzle followed the Little People Fire Truck some participants responded that “this is like the other one (in reference to the earlier truck) and so it is for boys too.” Finally, the category *other* (O) was used when children said that “it just is” or “because,” providing no other explanation for their choice.

Results

Two investigators who were blind to the hypotheses transcribed each videotaped session. Due to a strong acquiescence bias by two 2-year-olds, their data were not used for the quantitative analyses.

Gendered Choices. Two scores were established: First, the number of male, female, neutral, and ambiguous toys the children classified as masculine or feminine toys (detailed toy score), and second, the total number of masculine and feminine toys classified (toy gender score). A 2 (sex) x 3 (age groups: 2-3 year-olds, 4 year-olds, 5 year-olds) repeated analysis of variance (ANOVA) on the toy gender scores revealed a marginally significant three-way interaction between toy gender scores, sex, and age groups, $F(2,41) = 2.87, p = .06, \eta^2 = .12$, a significant interaction between sex and toy gender scores, $F(1,41) = 48.46, p < .001, \eta^2 = .54$, and a significant main effect of toy gender score, $F(1,41) = 12.11, p = .001, \eta^2 = .23$. Figure 1 depicts the significant interaction between sex and toy gender scores. The significant main effect showed that, on average, children classified significantly more toys as masculine ($M = 15.31, SD = 6.54$) than feminine ($M = 10.62, SD = 6.45$).

To examine differences among the stereotyped toy categories, a 2 (sex) x 3 (age groups) repeated measures ANOVA on the detailed toy scores was performed. Results showed a significant three-way interaction between detailed toy scores, sex, and age groups, $F(14,70) = 2.82, p = .002, \eta^2 = .36$, a significant interaction between detailed toy scores and sex, $F(7,35) = 7.19, p < .001, \eta^2 = .59$, and a main effect of detailed toy scores, $F(7,35) = 30.37, p < .001, \eta^2 = .86$ (see Table 1). Bonferroni follow-up simple effect analyses showed that there was a significant interaction between detailed toy scores and age groups only for girls, $F(14,36) = 3.79, p = .001, \eta^2 = .59$. On average, four- and five-year-old girls were less sex-stereotyped than younger girls, classifying toys equally as masculine and feminine. On average, boys were more

likely to classify toys as masculine than girls who were equally likely to classify toys as feminine or masculine.

We also performed a repeated measure ANOVA on the detailed toy scores for the “both” category, with sex and age groups as the between-subject variable. There was a main effect for the “both” detailed toy scores, $F(3,29) = 5.21, p = .004, \eta^2 = .29$. Post-hoc tests showed that on average, children had the most difficulty assigning a gender to ambiguous toys ($M = 1.43, SD = 2.04$), followed by feminine toys ($M = .69, SD = 1.09$), neutral toys ($M = .63, SD = 1.15$), and finally masculine toys ($M = .24, SD = .58$).

Reasoning. Children’s reasoning was classified based on verbatim transcripts into one of nine categories for each toy (see coding procedure). Interrater reliability was established at 97%. The total number of reasons given, as well as the number of different reasons provided were tallied for each participant. Independent t-tests on both sums revealed that, on average, boys ($M = 21.76, SD = 3.52$) provided significantly more reasons than girls ($M = 17.54, SD = 6.58$), $t(47) = 2.66, p = .01$. However, they did not differ in their numbers of different reasons that they utilized, $t(47) = 1.56, ns$. An ANOVA on the sum of reasons provided by age groups showed a significant difference between the youngest age group (2-3 year-olds: $M = 12.11, SD = 5.25$) and the two older age groups (4 year-olds: $M = 20.48, SD = 4.82$; 5 year-olds: $M = 21.65, SD = 4.38$), which were the same (Tukey’s HSB, $p < .05$), $F(2, 46) = 13.06, p < .001$. Similarly, the youngest children provided significantly fewer different reasons (2-3 year-olds; $M = 4.11, SD = 1.90$) than the two older age groups (4 year-olds: $M = 5.69, SD = 1.33$; 5 year-olds: $M = 6.00, SD = 1.27$), which were the same (Tukey’s HSB), $F(2, 46) = 5.52, p = .007$.

Table 2 displays the rounded percentages for each response category as well as the oral judgments made by the children for each toy (including the “both” category). Averaging across all toys, children most frequently mentioned egocentric (24.4%), gender association (19.1%), specific characteristics (11.8%), color (11.4%), and “other” (12.7%) reasons for their gendered

toy choices. Masculine toys were more often judged based on egocentric thinking (23.3%), gender association (15.3%), and sex role (11.8%). Feminine toys were more frequently judged based on egocentric reasoning (26.2%), other (20.2%), and gender association (18.2%). For neutral toys, children used predominantly gender associations (26.5%), egocentric thinking (20.3%), and “other” (12.6%) to make a judgment. Finally, ambiguous toys were chosen based on egocentric thinking (27.9%), gender association (16.4), and color (15.6%).

Individual reasoning responses were tallied by sex and age and converted to percentages for comparison purposes. Of the nine categories, boys used gender association (21.5%) and egocentric thinking (20.2%) almost equally often whereas girls used egocentric thinking (25.6%) more than gender association (16.2%) to base their judgments. Boys were less likely than girls to use familiarity (7.3%) and non-interest (3.9%) as a reason than girls (11.2%; 10.1% respectively). Both genders used color (boys 10.8%; girls 11.6%) and special characteristics (boys 11.8%; girls 11.4%) equally often to make their judgments. The pattern of reasoning differed particularly for the youngest age group. Two- to three-year-olds were more likely to make judgments based on familiarity (16.3%) and non-interest (14.5%) than four- (9.1% and 7.7%) and five-year-old (7.6% and 4.1%) children. They were however less likely to base their judgment on gender association (11.8%), sex role (2.7%) and specific characteristics (5.4%) than the four-year-olds (18.1%; 5.5%; 11.5% respectively) and the five year-olds (21.8%; 10.1%; 13.6% respectively).

Individual toys. Based on the verbatim transcripts, we analyzed the children’s individual decisions. Among the male toy category, the “blue Fisher Price car” was considered a feminine toy by 55% of the children. Twenty-four percent of the respondents noticed that the driver was a woman and the passenger a baby, associating this detail to the female gender. Among the feminine toy category, three toys were regarded as masculine (“Stuffed Simba” – a male toy; “Stuffed Pug” – children did not want to play with it; Roller Skates – boys really wanted to play

with them). Only two of the neutral toy categories were considered feminine toys: “Dori” and the “Zoo Train.” There was a strong gender association (54%) for “Dori,” the female fish in the Movie “Finding Nemo” and an egocentric wish to play with the zoo train for the girls but not for the boys. Finally, among the ambiguous toy category, only the “Dora Pool” was considered a feminine toy. Although blue in color, the depiction of Dora on the pool elicited a strong gender association (57%). “Play Doh” was the only toy that children considered more frequently for “both” genders, because both “boys and girls would like to play with it” (52%). The “Silly 6 Pins” picture elicited an equal response, with the children assigning it equally often as a boys’ toy, girls’ toy, or suitable for both.

Colors. Chi-square analyses on the children’s color choices were performed. Eighty-one percent of the preschoolers identified gray as a masculine color, $\chi^2 (1, N = 37) = 8.18, p = .004$. Seventy-eight percent regarded green and 81% regarded black as a masculine colors. Interestingly, 27% of preschoolers did not think that blue was a masculine color, $\chi^2 (1, N = 37) = 8.24, p = .016$. All but three boys identified pink and purple as feminine colors. Yellow, white, orange and red were considered appropriate for both sexes, $\chi^2 (1, N = 37) = 14.30, p = .001$, with boys believing it was a masculine color and girls a feminine color. Overall, boys and girls did not differ in the number of times that they used color as a reason for their toy classification, $\chi^2 (1, N = 37) = 3.76, ns$.

Discussion

In the present research we examined preschoolers’ gender reasoning and decision about pictures of novel toys. Previous research has shown that children prefer sex-typed toys and dislike opposite-sex toys (e.g., Eisenberg et al., 1996) and these differences persist throughout childhood (Rodgers, Fagot, & Winebarger, 1998). There are at least two plausible explanations to explain this finding. First, toy preferences may be based on characteristics of the toys, which may derive from their values from previous exposure to sex-appropriate toys. Second, children’s

knowledge of sex-role stereotypes may lead to preferences for sex-typed toys. This process may become so automatic that children do not realize why they prefer these toys. It was hypothesized that exposing children to attractive new toys without explicit gender labels would provide insight into early gender-based reasoning and children's expectations about their toy preferences.

In general, the preschoolers showed differential stereotyping by age groups and gender. Consistent with our hypothesis and previous studies (e.g., Leinbach, Hort, & Fagot, 1997), older children and boys held stronger own-sex stereotype preferences than girls. Older children (4- to 5-year-olds) were more likely than younger children to provide different reasons for their gendered decisions. This finding is not surprising, given that older children have a larger vocabulary and a more advanced cognitive knowledge base from which to draw.

The results also showed that boys held stronger own-sex stereotypes. Consistent with our hypothesis and in agreement with previous studies (e.g., Carter & Levy, 1988; Robinson & Morris, 1986), boys were more likely than girls to identify toys as "boys' toys" than "girls' toys." They also provided more reasons than girls for their choices, suggesting that they may have stronger preferences or more reasons to assign toys to their own sex. Boys are under more pressure than girls to conform to societal gender norms and to act in sex-typed ways (Maccoby & Jacklin, 1974). This strain may therefore limit their choices and preferences for other-sex toys.

At the same time, more toys were classified as masculine than feminine. As Servin et al. (1999) noted, feminine toys tend to become less attractive for boys and girls. Other researchers conclude that girls are more likely than boys to display cross-gender toy choices and activities (Bussey & Bandura, 1992; Frey & Ruble, 1992). Perhaps girls depart from stereotypes more easily than boys because masculine activities have greater prestige than feminine ones. Girls engaging with boys' toys may display an aspiration to higher social status (Etaugh & Rathus, 1995). Similarly, masculine toys may be more appealing than feminine toys. The results from the current study demonstrate that children were more likely to classify neutral and ambiguous toys

as boys' toys than girls' toys. Even toys that previous studies identified as feminine toys (stuffed animals), were classified as masculine toys by the current sample. Male toys were judged predominantly based on egocentric thinking, gender association, and sex role. Of the four toy classifications, only male toys showed a relatively large percentage of sex role attributions, which is probably a function of the types of toys that were chosen for that category. Nevertheless, boys displayed a strong desire to play with the majority of the toys displayed. They were less likely than girls to invoke familiarity or non-interest as a criterion for their choices. Interestingly, male toys were least likely to be classified as "both", suggesting a stronger preference for these toys.

We were particularly interested in the reasoning assigned to neutral and ambiguous toy pictures. As mentioned, they tended to be classified as "boys' toys" rather than "girls' toys." Gender associations and egocentric thinking were dominant responses. Unlike previous studies (e.g., Eisenberg et al., 1982; Miller, 1987) the functionality of the toy was not mentioned as a reason for their choices. Instead, girls and boys were more likely to label the toys based on their interest (attractiveness) in playing with the toy, the gender associations, and the colors. These findings suggest that children's own preferences may not be accurate measures of their conscious understanding of sex-role stereotypes. It is more likely that toy preferences may be based on characteristics of the toy. This might be illustrated by the order effects that we found in the present study. For example, when a car carrying a baby in the backseat was first shown in blue, children tended to use the baby to identify the toy as a "girls' toy." When the same car was shown in pink, children automatically identified it as a girl toy because of its color, ignoring the inside of the car. A similar pattern was shown with characters from the animated movie *Finding Nemo*. When the character "Dori" was first shown, children thought of the movie as a "boy movie" and therefore classified "Dori" as a "boys' toy." When Nemo's father "Merlin" was first

shown, they mentioned that “he was the father of Nemo” and therefore was a “boy toy.” “Dori” then was a “girls’ toy” because she was the female character in the movie.

In general, younger children based decisions predominantly on the number of boys and/or girls that were depicted with the toy picture, the familiarity with the toy, and the color of toy. They were more likely to mention not being interested in playing with the toy than were older children. On the other hand, older children used their experience as cues for assigning gender. They were more likely than younger children to base their judgments on gender association, sex role, and specific characteristics. These findings suggest that older children have had more exposure to gendered activities and may therefore rely on that knowledge more readily than younger children.

Much like Martin et al. (1995), the participants in this study most often used an egocentric pattern of reasoning. Both boys and girls generalized their preferences to other children of the same sex by stating, “I’m a girl/boy and want to play with this toy and so other girls/boys will too.” This egocentric pattern implies that children develop abstract theories about gender that go beyond the explicit gender knowledge they may have acquired. On the one hand, they may form a theory of group differences (what one sex likes, the other dislikes), on the other hand, they may form a theory of group similarities (what an individual of one sex likes, other individuals of that sex also like). Future studies should investigate which of these two theories may develop earlier. Earlier studies suggest that the theory of group similarity (within-group theory) may develop earlier and that a theory of group differences may develop later and become stronger with age (Martin, 1989).

It is important to note that the toys chosen for this study were limited in many ways. The task only assessed children’s hypothetical toy preferences rather than their actual toy preferences. It would be prudent to run this study in a natural setting to compare the results. Although the focus of the study was on the children’s choices about ambiguous and neutral toys,

it would have been more appropriate to use more strongly stereotyped toys in the “control condition” (male and female toys). The female toys were clearly not feminine enough to elicit strong gendered reasoning.

In conclusion, children’s toy preferences and choices are influenced by gender-based reasoning, particularly by egocentric reasoning. Children’s abstract theories about gender groups may allow them to make assumptions about who would like to play with non-sex-typed toys. They may assume that because they like playing with the toy, children of the same sex would also like to play with that toy. Young children’s toy preferences may be more based on certain toy characteristics than on unconscious sex-role stereotype knowledge.

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Table 1

Significant three-way interaction between detailed toy scores, sex, and age groups.

Age	Toy-Gender	Boys' Decision				Girls' Decision			
		Boy Toy		Girl Toy		Boy Toy		Girl Toy	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
2-3 year olds	Male Toy	5.50	0.71	0.00	0.00	2.67	1.86	2.50	1.64
	Female Toy	2.50	0.71	2.00	0.00	1.17	0.41	4.50	0.84
	Neutral Toy	5.50	2.12	2.00	1.41	2.17	0.75	4.83	1.16
	Ambiguous Toy	5.00	1.41	2.00	0.00	2.33	1.51	5.33	2.33
4 year olds	Male Toy	5.00	0.89	0.55	0.82	4.80	1.23	0.40	0.70
	Female Toy	2.60	0.81	2.09	0.54	0.70	0.82	2.90	1.29
	Neutral Toy	6.82	1.17	0.91	0.83	3.40	2.18	2.70	1.63
	Ambiguous Toy	6.27	1.42	0.64	0.67	2.30	1.49	3.70	1.89
5 year olds	Male Toy	4.13	1.25	1.38	0.74	4.70	1.16	0.90	1.00
	Female Toy	1.37	0.92	2.75	1.03	1.60	1.07	3.10	0.99
	Neutral Toy	5.25	1.39	1.50	1.07	4.00	1.49	2.80	1.99
	Ambiguous Toy	3.75	2.19	1.75	1.75	2.70	2.12	3.50	2.27

Table 2

Percentage for each Reasoning Category and Gender Decisions made for each Toy.

Toys	Reasoning Category (%)									Decision about Toy (%)		
	GA	C	F	NI	E	SR	SC	PS	O	Masculine	Feminine	Both
<u>Male Toys</u>												
Little Builder Belt	14	3	24	14	21	21	0	0	3	84	12	4
Fire Truck	19	11	6	6	22	17	11	0	8	69	27	4
Blue Car	24	29	0	0	18	8	15	3	3	42	55	3
Riding Transformer	24	2	5	17	26	5	9	0	12	88	10	2
Balls	8	0	10	28	28	8	10	0	8	71	14	14
Batmobile	3	15	3	7	25	12	15	0	20	85	13	2
Average	15.3	10	8	12	23.3	11.8	10	0.5	9	73.2	21.8	4.8
<u>Female Toys</u>												
Crayola Purse	10	0	16	10	32	7	7	0	18	29	45	26
Pink Car	19	43	10	2	7	2	5	5	7	4	94	2
Stuffed Simba	42	0	6	6	19	3	3	0	21	58	32	10
Stuffed Pug	0	0	0	38	25	0	12	0	25	55	27	18
My Little Pony	17	7	5	14	14	5	24	0	14	0	100	0
Roller Skates	3	13	13	13	34	3	5	0	16	50	27	23
Average	18.2	12.6	10	16.6	26.2	4	11.2	1	20.2	39.2	65	15.8
<u>Neutral Toys</u>												
Pound a ball	8	14	5	0	22	14	27	0	10	44	38	19
Dori	54	4	4	0	17	4	4	0	13	23	69	8
Merlin	44	0	13	0	17	9	4	0	13	82	8	10
Guitar	23	0	15	3	20	9	18	0	12	56	33	11
Fire Truck Puzzle	10	7	14	10	25	10	7	7	10	78	16	6
Zoo Train	11	15	7	0	37	0	15	0	15	31	54	15
Hogwart's Castle	13	13	7	0	10	20	17	0	20	65	27	8
Harry Potter	49	6	3	8	14	6	3	3	8	88	10	2
Average	26.5	7.38	8.5	2.63	20.3	9	11.9	1.25	12.6	58.4	31.9	9.9
<u>Ambiguous Toys</u>												
Dora Pool	57	5	0	2	30	2	2	0	2	8	69	22
Phonics Radio	17	19	6	0	19	0	33	0	6	65	22	12
Frogabet	3	17	17	10	20	0	27	0	6	54	38	8
Busy Ball Popper	8	21	16	3	21	0	18	0	13	43	41	16
Elmo	30	0	25	3	20	0	3	0	19	54	33	13
Silly 6 pins	3	20	7	10	43	3	7	0	7	37	33	30
Magic Screen	9	21	3	6	18	20	12	0	11	65	23	12
Play Doh	4	22	0	4	52	0	11	0	7	22	37	41
Average	16.4	15.6	9.25	4.75	27.9	3.13	14.1	0	8.88	43.5	37	19.25
Grand Total	19.1	11.4	8.94	8.99	24.4	6.99	11.8	0.69	12.7	53.56	38.93	12.44

Note: GA = Gender Association, C = Color, F = Familiarity, NI = Non Interest, E = Egocentric, SR = Sex Role, SC = Special Characteristic, PS = Previously Seen, O = Other

Figure Caption

Figure 1

Significant interaction between toy gender scores and sex.

