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Pink Frilly Dresses and the Avoidance of All Things "Girly": Children's Appearance Rigidity

and Cognitive Theories of Gender Development

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Abstract

Many young children pass through a stage of gender appearance rigidity; girls insist on wearing dresses, often pink and frilly, whereas boys refuse to wear anything with a hint of femininity. Two studies investigated the prevalence of this apparent hallmark of early gender development and its relation to children's growing identification with a gender category. Study 1a examined the prevalence of this behavior and whether it would exhibit a developmental pattern of rigidity followed by flexibility, consistent with past research on identity-related cognitions. Interviews with 76 White, middle-class parents and their 3- to 6-year-old children revealed that about two-thirds of parents of 3- and 4-year-old girls and almost half (44%) of parents of 5- and 6-year-old boys reported that their children had exhibited a period of rigidity in their gender-related appearance behavior. Appearance rigidity was not related to parents' preferences for their children's gender-typed clothing. Study 1b examined whether cognitive theories of identity development could shed light on gender appearance rigidity. The more important and positive children considered their gender and the more children understood that gender categories remain stable over time (gender stability), the more likely children were to wear gender-typed outfits. Study 2 extended this research to a more diverse population and found that gender appearance rigidity was also prevalent in 267 4-year-olds of African American, Chinese, Dominican, and Mexican immigrant low-income backgrounds. Results suggest that rigid gender-related appearance behavior can be seen among young children from different backgrounds and may reflect early developing cognitions about gender identity.

250 words

Pink Frilly Dresses and the Avoidance of All Things "Girly": Children's Appearance

Rigidity and Cognitive Theories of Gender Development

Our appearances are a symbolic representation of our self-concepts and convey messages to others about how we would like to be perceived. Clothing is a critical way we communicate our identity to others (e.g., Feinberg, Mataro, & Burroughs, 1992), and can signal membership in or separation from social groups (e.g., Freitas, Kaiser, & Hammidi, 1996). It is surprising then, that the gender identity development literature has virtually ignored children's gender-typed appearances. The study of gender development has been dominated by a focus on gender stereotyping or activity preferences and behaviors (Zosuls, Miller, Ruble, Martin, & Fabes, 2011), despite numerous calls to focus on multiple domains (Huston, 1983; Ruble, Martin, & Berenbaum, 2006). Children's gender-typed appearance is also unique from other aspects of gender-typing. During the course of a day, playing with toys or with same- or other-gender peers is a transitory behavior, yet appearances are comparatively stable. Clothing thus allows a child to announce to the world, "This is who I am" as a girl or boy.

"Appearance rigidity", or the adherence to conforming to gender norms in one's appearance through gender-stereotypical dress, is one particular phenomenon that may elucidate this appearance-identity link in young children. Some young girls, it seems, according to parent anecdotes and informal observations, go through a phase in which they refuse to wear anything but pink, frilly dresses (Ruble, Lurye, & Zosuls, 2007). Parents have reported that this "rigidity" can be seen in the level of gender-stereotypicality (e.g., wearing pink from head to toe) and in the frequency of its occurrence (e.g., insisting on wearing a dress every single day, rain or shine).

We may speculate that this kind of behavior is linked to socialization processes, especially pressures from advertising. Girls may copy Disney princesses (England, Descartes, &

Collier, 2011), and others may reinforce their behavior with praise. However, such an interpretation seems incomplete. For example, in line with theories about the benefits of androgyny (Bem, 1981), the insistence on wearing ultra-feminine clothing may upset some parents, causing them to feel that they have failed to raise their daughters in a gender-neutral fashion, as the popular media has noted (Fine, 2010; Orenstein, 2010; Padawar, 2012). In addition, about a third of young children exhibit other forms of "rigidity", or "extremely intense interests" outside of gender (DeLoache, Simcock, & Macari, 2007). Moreover parents reported that these preoccupations originated from the child rather than being encouraged by others. These counter-efforts by some parents, and children's intense interests across domains, suggest that appearance rigidity may emanate, at least in part, from factors other than external socialization, such as cognitive-developmental and motivational processes, referred to here as self-socialization.

Cognitive Theories of Gender Development

Cognitive theories of gender development emphasize three key features (Martin, Ruble, & Szkrybalo, 2002). First, children are viewed as active, internally-motivated agents who construct the meaning of gender categories (Tobin et al., 2010). Once children understand that they belong to a gender category, they embark on an investigation as "gender detectives", attending to information about their own gender and about differences between girls and boys (Martin & Ruble, 2004). Second, children's emerging understanding of gender concepts motivates them to master gender categories by behaving in gender-appropriate ways (Stangor & Ruble, 1987). Third, there exists a developmental trajectory of gender-typing. Once children recognize an important categorical distinction such as gender, they may exhibit phase-like shifts in the rigidity of category-relevant beliefs and behaviors, moving from a beginning awareness, to

rigidity, to flexibility (Ruble, 1994), a trajectory supported by research on children's endorsement of gender stereotypes (Miller, Trautner, & Ruble, 2006; Trautner et al., 2005).

Children's gender appearance is an ideal behavior to test cognitive theories of gender development, as it is a clear marker of gender-typing that is relatively permanent across situations. Moreover, appearances are both highly salient and important to young children as their person perception relies on peripheral characteristics such as physical appearance (Ruble & Dweck, 1995). We propose that increases in children's adherence to wearing feminine or masculine clothing may be viewed as a manifestation of their passage through the rigidity phase in the trajectory of gender development (Halim, Ruble, & Amodio, 2011), reflecting cognitions about basic gender identity as a girl or boy, along with early-acquired and highly visible gender-stereotype knowledge (Miller, Lurye, Zosuls, & Ruble, 2009).

Goals and Predictions for the Present Studies

Appearance rigidity among girls has been described previously (i.e., the "pink, frilly dress" phenomenon, or "PFD", Ruble, Lurye et al., 2007), but there has been no direct empirical inquiry to date regarding the phenomenon. Our present research aims to: (i) describe children's appearance rigidity, (ii) examine whether gender identity predicts children's gender appearance rigidity, and (iii) explore whether appearance rigidity generalizes to diverse populations.

Appearance rigidity. We examined the alternative hypotheses that appearance rigidity may be seen in only a few, select young girls or that appearance rigidity may be relatively common in young girls. We were also interested to see whether boys would exhibit their own version of appearance rigidity. Because appearance rigidity is an appearance-based phenomenon, we expected a lower prevalence among boys, given past research suggesting that stereotypes of girls revolve around appearances and stereotypes of boys may revolve more around activities

(Miller et al., 2009). Nevertheless, if appearance rigidity is found in boys, we expected it to include the embracing of superhero outfits (Neppl & Murray, 1997; Paley, 1986) or the donning of other masculine items such as suits and ties. We further anticipated that boys might exhibit appearance rigidity by *avoiding* feminine clothing as gender-role behavior is sometimes more often defined and exhibited as something boys should *not* do, rather than what they should do (Chiu et al., 2006; Hartley, 1959; Pickering & Repacholi, 2001).

We also hypothesized that the prevalence of gender-related appearance would show a trajectory of rigidity followed by flexibility across age as predicted by cognitive theories of gender development. Namely, because gender labeling and identity are evident in many children by age 2 (Zosuls et al., 2009) and gender stability usually emerges in 3- to 4-year-olds (Ruble, Martin, & Berenbaum, 2006), we expected 3-and 4-year-old children to show more appearance rigidity than 5- and 6-year-old children. In addition, we anticipated that boys would show appearance rigidity later than girls because girls' gender development sometimes precedes boys' (Ruble et al., 2006; Zosuls, et al., 2009).

Gender identity and gender-typed appearance. Our second aim was to examine the link between appearance rigidity and two aspects of gender identity development that capture the motivational (gender centrality and evaluation) and knowledge (gender constancy) components of cognitive theories of gender development. Gender centrality refers to the importance of gender to the self-concept and evaluation refers to the personal regard of one's own gender (see Egan & Perry, 2001). Little research has directly examined connections between gender centrality/evaluation and gender-typed behaviors in young children. We hypothesized that higher levels of identification with one's own gender would be associated with higher levels of gender-typed appearances. Children who feel that their gender identities are important and positive may

desire that others recognize their gender identities and go to great lengths to convey the right message with their clothing.

Full gender constancy involves learning three increasingly sophisticated gender category concepts by about ages 6 to 7: (1) identity – that they and others are either boys or girls; (2) stability – that one's sex remains stable over time (e.g., knowing that a baby girl will become a woman); and (3) consistency – that despite superficial changes (e.g., if a boy wears a dress), sex does not change (Slaby & Frey, 1975). Research examining the connection between gender constancy and gender-typed behaviors has reached mixed conclusions. Some find positive associations, whereas others find no associations (see Martin et al., 2002). Recent analyses parsing the stages of constancy have suggested that stability may be a better predictor of gender rigidity compared to gender consistency (Smetana & Letourneau, 1984), which has been related to decreased rather than increased gender rigidity (Ruble, Taylor, et al., 2007; Zucker et al., 1999). Thus, we hypothesized that gender stability would predict gender-typed appearance. We reasoned that if children have attained gender stability they may feel more committed to their gender and thus dress in more gender-stereotypical ways.

Appearance rigidity in multiple cultures. A third goal was to explore whether appearance rigidity would be seen in children from diverse ethnic backgrounds. There may be large variation in the gender attitudes, gender roles, and gender stereotyping of different cultural communities due to historical and philosophical influences (Kane, 2000). For example, *machismo* and *marianismo*, or, broadly, male dominance and female submissiveness, may characterize Latino culture (Julian et al., 1994). Chinese Confucian teachings emphasize male dominance in a patriarchical clan system (Hofstede, 1980), while dictating that the female role is to serve (Tu, 1985). In contrast, some have argued that workforce participation by African

American women, and the value of equality in American culture more broadly, has created greater gender equality in African American families (Gutman, 1976; Tamis-LeMonda & McFadden, 2009). In light of the gendered contexts of different communities, examining gender appearance rigidity across ethnically diverse children from different social classes provides a stringent test of the phenomenon's prevalence and generality.

Overview

We conducted two studies. Study 1a investigated whether gender appearance rigidity is apparent in early childhood in a middle-class, mostly White sample. We also investigated whether parents' preferences are associated with children's gender appearance rigidity. Study 1b tested cognitive theories of gender development by examining whether appearance rigidity was connected to children's gender identification and understanding of gender stability. Study 2 tested whether appearance rigidity was generalizable to populations of children from different ethnicities and from a different socioeconomic class.

Study 1a

Method

Participants and procedure. Parents of 76 children (39 girls, 37 boys) were recruited from public and private schools in New York City, and from university faculty and staff as part of a larger study on gender development. Children's ages ranged from 3.13 to 6.98 years ($M = 4.92$, $SD = 1.03$) (16 three-year-olds, 22 four-year-olds, 26 five-year-olds, 12 six-year-olds). The younger cohort consisted of 38 children (19 girls, 19 boys; $M = 4.08$ years, $SD = .56$), as did the older cohort (20 girls, 18 boys) ($M = 5.78$ years, $SD = .59$). Families came from middle- to upper-middle-class backgrounds (average income $120,000-140,000; average education: some graduate school) and were mostly White (about 90%), with a small number of Asian, Latino, and African-American families. Female researchers interviewed the primary caretaker of each child (74 mothers, 2 fathers) at the university and by phone.

Measures.

Lifetime appearance rigidity. Because we assumed that children's extreme insistence on wearing gender-typed clothing would be a relatively short-lived phase, we asked about "lifetime" appearance rigidity to assess whether appearance rigidity was ever exhibited (in the past or present). Interviewers asked parents, "Has your daughter (*son*) ever insisted on wearing traditional feminine (*masculine*) clothes whenever she (*he*) went out? Please describe what that was." Three independent judges coded responses (κ = .88) and discussed all disagreements until they reached agreement. Judges first rated responses on a 4-point scale (1 = No interest in wearing traditional gender-typed clothes (e.g., *"No", "He does not care what he wears"*); 2 = Little interest/ambiguous (e.g., *"No, [she] didn't insist. [She] just likes to wear nice clothing - dresses or pants", "No, he is greatly influenced by what boys in class wear."*); 3 = Pretty interested (e.g., *"She likes to wear dresses", "He wears boys' clothing; color is important to him"*); 4 = Insistent (e.g., *"Yes, pretty dress – pink and frilly", "Yes, he wouldn't be caught dead in girls' clothing"*) (*M* = 2.51, *SD* = 1.36). Because we were interested in the most extreme cases, and to be conservative in our estimates of prevalence, we defined children who exhibited appearance rigidity as those coded as 4's.

The ways in which children expressed appearance rigidity were also categorized. Categories included Dresses and skirts, Gender-typed colors (pink/purple versus blue; Chiu et al., 2006), Texture/feel/movement of a fabric or a piece of clothing (e.g., "frilly," "flowing [and] silky," "stuff that twirls," "velvet"), Decorations/patterns (e.g., flowers, hearts), Fancy or formal dress (e.g., ties for boys), Avoidance of other-gender-typed clothing or colors (e.g., pants for girls, pink/purple colors for boys), Superhero costumes and graphics, and Other (e.g., ballet slippers, briefcases). A single child's expression could fall into more than one category (e.g., pink dresses would be categorized under Gender-typed color and Dresses/skirts).

Current gender-typed appearance. To capture *current* gender-typed appearance, interviewers asked parents, "What is a typical outfit for your child?" The same three independent judges coded all of the responses ($\kappa = .81$) for the degree of femininity and the degree of masculinity of the typical outfit for both boys and girls on a scale from 1 to 5 (see online supplemental materials), $r(70) = -.57$, $p = .001$. We reverse-coded how other-gender-typed the outfit was and then averaged the two items to create a scale. On average, children were high on gender-typed appearance ($M = 4.14$, $SD = .75$). Current gender-typed appearance was correlated with lifetime appearance rigidity, $r(70) = .25$, $p = .038$. Six children were missing data due to an interview error.

Parent preferences for child's clothing. To measure parents' preferences toward their children's clothing we asked parents of girls (boys), "How comfortable do you feel when your child dresses up in 'girlish' ('boyish') clothes?" (1 = Very uncomfortable, 7 = Very comfortable). We also asked, "What are your preferences regarding your child's clothing?" (for girls [boys]: 1 = Very masculine [feminine], 5 = Very feminine [masculine]). Four parents did not complete the interview due to time constraints and had missing data. Parents of boys ($M = 3.71$, $SD = .83$) and girls ($M = 3.47$, $SD = .74$) did not significantly differ in their preference for gender-typed clothing, $t(69) = 1.31$, *ns*. However, parents of boys ($M = 6.88$, $SD = .41$) compared to parents of girls ($M = 6.46$, $SD = .84$) reported being more comfortable if their child wore gender-typed clothing, $t(53.3) = 2.74$, $p = .008$, $d = .75$. These items were correlated, $r(70) = .34$, $p = .004$, and thus were standardized around their means and averaged together.

Results

Plan of analyses. We first describe the distributions of children who have ever exhibited ("lifetime") appearance rigidity, then provide details about how many children displayed current

appearance rigidity. Next to explore trajectories of gender-typed appearance we examined gender by cohort interactions for lifetime and current gender-typed appearance using chi-squares and ANOVAs. Finally, we investigated whether parent preferences concerning clothing were associated with children's current gender-typed appearance using multiple regressions.

Prevalence and extremity. Analyses of the lifetime appearance rigidity measure indicated that 54% of the girls (68% in the younger cohort and 40% in the older cohort) were reported as ever exhibiting appearance rigidity (this finding also means that 46% had either never exhibited appearance rigidity or had shown a little bit or some interest), see Table 2. In contrast, 27% of the boys (11% in the younger cohort and 44% in the older cohort) were reported to be insistent on wearing gender-typed clothing at some point in their early childhood. This result also means that 73% of boys had either never exhibited appearance rigidity or had shown a little bit or some interest.

Parents' comments indicated that this lifetime appearance rigidity was quite extreme for some of the girls. About a quarter of the parents of girls who had exhibited appearance rigidity (24%) used expressions like, "has to," "no option," "won't wear anything else," "not a choice," "that's it." Parents also pointed to children's refusals or rejections of certain items of clothing (80% of boys and 19% of girls who exhibited appearance rigidity).

Ways in which children express lifetime appearance rigidity. For girls, parent responses clustered around the adherence to dresses and skirts and the avoidance of pants (see Table 1 and Figure 1). For boys, parent responses converged on the avoidance of feminine clothing and some cases of superhero costumes and formal menswear. Children insisted on wearing gender-typed clothing on a daily basis and often refused other, less gender-typed, suggested options. About 17% of children showed lifetime appearance rigidity in only one

category (i.e., "dresses"); 32% showed rigidity in 2 to 3 ways (i.e., "dresses" and "pink"); and 12% showed rigidity in 4 to 6 ways. About 40% of parents did not mention specific clothing elements, usually answering with unequivocal yes's or no's.

Differences by gender and cohort. We examined gender and cohort differences in both lifetime and current appearance rigidity. Because the distribution of lifetime appearance rigidity was non-parametric (79% of children at the ends of the distribution), we contrasted the most rigid children (4's) compared to everyone else. Results revealed that, across cohorts, more girls than boys showed lifetime appearance rigidity, x^2 (1, $N = 76$) = 5.66, $p = .017$, $\varphi = .27$. In addition, there was a gender by cohort interaction, G^2 ($df = 4$) = 14.70, $p = .005$. Among girls, lifetime appearance rigidity was marginally more prevalent in the younger compared to the older cohort, x^2 (1, $N = 39$) = 3.17, $p = .075$, $\varphi = .29$ (see Figure 2). It seems possible that given the high frequency of lifetime appearance rigidity among 3- to 4-year-olds, some parents of 5- to 6-year-old girls might have underreported past gender rigid behavior among their daughters. In contrast, lifetime appearance rigidity was more prevalent in boys in the older (44%) compared to the younger (11%) cohort, x^2 (1, $N = 37$) = 5.39, $p = .020$, $\varphi = .38$.

For current gender-typed appearance, a two-way ANOVA revealed that although the main effects of gender, $F(1, 66) = 1.69$, and cohort, $F(1, 66) = .19$, were not significant, a gender by cohort interaction was found, $F(1, 66) = 7.11$, $p = .010$, $\eta^2 = .10$. As expected, girls in the younger ($M = 4.32$, $SD = .69$) compared to the older ($M = 3.78$, $SD = .79$) cohort were rated as exhibiting a higher level of current gender-typed appearance, $t(35) = 2.21$, $p = .034$, $d = .75$. In contrast, boys in the older ($M = 4.46$, $SD = .66$) compared to the younger ($M = 4.08$, $SD = .71$) cohort did not significantly differ. Overall, children currently dressed in rather gender-typed ways (overall $M = 4.14$ on a scale from 1 to 5), especially girls in the younger cohort ($M = 4.32$

on a scale from 1 to 5).

  The role of parents. Finally, we examined the possible association between parents' preferences and children's appearance rigidity. We did this in several ways. First, we examined the parents' open-ended responses for spontaneous reactions to this behavior. In their open-ended responses concerning lifetime appearance rigidity, none of the parents of children who insisted on wearing gender-typed clothing reported actively encouraging or supporting their children to wear gender-typed clothing. Indeed, some parents reported having to resort to some sort of negotiation or persuasion to dress their daughters in a manner that deviated from their daughters' wishes (e.g., "[She] always prefers a dress. I have to convince her if it's cold to wear leggings"). Second, we asked parents, "During an average week, how frequently do you attempt to influence your child's clothing?" (0 = Never, 1 = Rarely, 2 = A couple times, 3 = Often, 4 = A lot). The average response indicated low parental attempts to influence children's outfits (M = 1.51, SD = 1.20).

  Third, we examined whether parents' preferences for their children's clothing in terms of femininity/masculinity were associated with their child's current appearance rigidity. We conducted a hierarchical multiple regression, in which children's current expression of appearance rigidity served the dependent variable with age and gender entered on the first step, parent preferences entered on the second step, the 3 two-way interactions entered on the third step, and the three-way interaction entered on the fourth step. No significant effects were found. The largest coefficient for parents' preferences predicting children's current appearance rigidity was found on the second step, but was not significant, β = -.18, $t(65)$ = 1.36, ns. See supplemental online materials for more details.

Discussion

These data are the first to document the prevalence of gender appearance rigidity in young children. We used strict criteria for calculating the prevalence of lifetime appearance rigidity, and using these criteria, over half of girls and a little more than a quarter of boys had at some point strongly insisted on wearing gender-typed clothing (Table 2). On the other end of the spectrum, about a quarter of girls and about half of boys had never shown any appearance rigidity over their lifetimes. These data point to the variability in children's appearance rigidity.

As expected, lifetime gender appearance rigidity was reported to be more prevalent in girls than in boys. In addition, we found that lifetime appearance rigidity was marginally reported more often for 3- and 4-year-old girls (68%) compared to 5- and 6-year-old girls (40%), whereas, lifetime appearance rigidity was reported more often for 5- and 6-year-old boys (40%) compared to 3- and 4-year-old boys (11%). Current appearance rigidity showed a similar, and significant, patterns for girls, but no differences by cohort for boys. Together these results may tentatively suggest a later onset of appearance rigidity for boys. This delay would mirror research showing that girls are often a little ahead of boys in gender development (Zosuls, et al., 2009). Alternatively, because boys most frequently expressed appearance rigidity by avoiding anything feminine, it may be that it takes longer to learn what to avoid about the other gender (e.g., Chiu et al., 2006), rather than what to embrace about one's own gender.

The qualitative data on lifetime appearance rigidity suggested that some children were quite insistent on wearing or avoiding feminine clothing. Qualitatively, parent-reported reactions ranged from tolerance to reasoning with or making compromises with their children. Interestingly, only parents of daughters explicitly mentioned conflict. Perhaps parents of sons were very comfortable with their boys wearing 'boyish' clothing. Somewhat surprisingly, parents' preferences did not predict children's current gender appearance rigidity.

Study 1b

Using child interviews, Study 1b tested whether two aspects of self-socialization in gender identity development – (i) feelings of importance and positive evaluation and (ii) the understanding of the permanence of gender categories – can help explain why young children want to dress like girly girls and masculine boys. We tested these hypotheses by examining the association between these aspects of gender identity development with their current gender appearance rigidity as reported by their parents in Study 1a.

Method

Participants and procedure. Participants included the 76 children of the parents in Study 1a. While parents were being interviewed, children were interviewed separately in two sessions at the university or in their schools.

Measures.

Current expression of appearance rigidity. Appearance rigidity was measured using the parent reports of current expressions of appearance rigidity described in Study 1a.

Centrality and evaluation. Interviewers asked children about how important and positive being a girl or boy was to them, using 10 items adapted from adult identity measures of centrality and evaluation (e.g., Luhtanen & Crocker, 1992) asked in a Harter-type format (Harter, 1982; Ruble, Taylor, et al., 2007) (e.g., to a girl, "Some girls feel that [being a girl is important to them /girls are great], but other girls do not feel that [being a girl is important to them/girls are great]"). Children chose which group they were more like and whether it was "sort of true" or "really true" for them (1 = Really not at all true, 2 = Sort of not true, 3 = Sort of true, 4 = Really true). Higher numbers indicated greater centrality and evaluation. We combined centrality and evaluation items because these two components of identification were correlated, $r(72) = .59$, $p < .001$. Overall, centrality and evaluation of one's own gender was moderately high ($\alpha = .72$; $M =$

3.41, SD = .60; Range: 1.60 to 4.00). No gender differences were found.

 Stability constancy. There were two parts of the stability measure. The first part

consisted of seven forced-choice questions (e.g., "When you grow up, will you be a man or a

woman?") (0 = Incorrect, 1 = Correct) (Slaby & Frey, 1975; Ruble, Taylor et al., 2007). The

second part consisted of seven sets of drawings where children had to match children and adults

by gender (e.g., "What did this adult look like as a child?") (for more details see Hirschfeld,

1996; Ruble, Taylor et al., 2007). Children needed to match by gender for responses to be

counted as correct. The stability scale was a sum of the 14 total items (α = .71; M = 12.72, SD =

2.02; range: 7.00 to 14.00). Girls (M = 13.11, SD = 1.49) showed somewhat more understanding

of gender stability than did boys (M = 12.31, SD = 2.41), t(57.6) = 1.71, p = .093.

Results

 Plan of analyses. We examined whether gender identification would be associated with

current gender-typed appearance by conducting hierarchical multiple regressions. We treated

children's current gender-typed appearance as the dependent variable with age and gender

entered on the first step, the identity variable of interest entered on the second, the 3 two-way

interactions entered on the third, and the three-way interaction entered on the fourth. All

continuous predictors were mean-centered. Gender was dummy coded (girls = 0; boys = 1).

 Gender centrality and evaluation. Consistent with our hypothesis, gender

centrality/evaluation positively predicted children's current appearance rigidity adjusting for age

and gender, β = .25, t(62) = 2.08, p = .042. We found no other significant effects.

 Gender stability. Confirming our hypothesis, an understanding of gender stability was

associated with children's current appearance rigidity, β = .32, t(64) = 2.24, p = .028. We found

no other significant effects. See supplemental materials about gender consistency as a predictor.

Discussion

The data lend support to cognitive theories of gender development regarding children's appearance rigidity. First, we found that gender centrality and evaluation positively predicted children's current appearance rigidity across age and gender. These findings suggest that children exhibiting appearance rigidity may be doing so, in part, because they consider their gender identity to be an important and positive aspect of themselves. In addition, we found that a greater understanding of gender stability predicted children's current appearance rigidity across gender. These data indicate that children's current appearance rigidity may mark a solidified commitment to their gender identities, once children know that gender is relatively permanent over time. These associations are consistent with predictions from the Phase Model of Transitions (Ruble, 1994) with children's cognitive development predicting their identity-displaying behavior.

A limitation of Study 1 was the homogeneity of our sample. We suggest that appearance rigidity could be found in any culture in which gender is an important and salient categorical distinction and in which certain appearance characteristics are closely connected with gender. Hence, to examine the generalizability of gender appearance rigidity during early childhood to other cultural communities, we conducted a second study on a different, diverse population.

Study 2

Study 2 examined whether the identified patterns of gender appearance found in Study 1 would generalize to 4-year-old children from ethnically-diverse backgrounds (Mexican-, Chinese-, Dominican-, and African-American) and from low-income neighborhoods. Based on the responses of parents in Study 1, we constructed closed-ended questions to assess children's appearance rigidity. We examined mothers of 4-year-olds, in particular, because Study 1 showed

that appearance rigidity was prevalent at age 4 and cognitive theories of gender development would also predict a peak in gender-typed appearance at this time. We chose these four particular cultural backgrounds based on their increasing presence in the U.S. and because they each have unique histories and traditions that may affect children's gender-typing. In terms of ethnic group differences, African American children might be expected to display less appearance rigidity than the three immigrant groups because gender distinctions may be less salient among African American families in light of high employment and economic responsibilities of mothers (Hill, 2002; Jarrett, Roy, & Burton, 2002).

Method

Participants and procedure. Participants included 267 mothers of 4-year-olds and their children (129 girls, 138 boys; 59 African American [25 girls, 34 boys], 90 Chinese [45 girls, 45 boys], 61 Dominican American [27 girls, 34 boys], 57 Mexican American [32 girls, 25 boys]). One hundred percent of Chinese, 96% of Mexican, 79% of Dominican, and 0% of African American mothers were born outside of the U.S. Average household annual income was approximately \$21,823 (*SD* = \$14,576) and 84% were currently receiving government assistance (75% of Dominican, 90% of African-American, 86% of Chinese, and 86% of Mexican families). Twenty-five percent of mothers completed some college, 38% only completed high school or received a GED, and 37% did not complete high school. Participants were recruited at the maternity wards of New York City hospitals in low-income areas to take part in a larger longitudinal study on culture and school readiness. Participants were interviewed in their dominant language.

Gender appearance rigidity. We read mothers of sons two statements: "My son avoids wearing feminine clothing and colors like pink," and "My son loves to wear really masculine

things like baseball caps, basketball shoes, and/or sports jerseys" (1 = Not at all true, 2 = A little

bit true, 3 = Somewhat true, 4 = Very true, 5 = Extremely true). We averaged the responses to

these two statements to make a scale, $M = 3.66$, $SD = 1.09$; all boys - $r(137) = .30$, $p < .001$; by

ethnicity - Chinese-: $r(44) = .58$, $p < .001$; Mexican-: $r(25) = -.13$, ns; Dominican-: $r(34) = .35$, p

$= .043$; African-American: $r(25) = .10$, ns. For mothers of daughters we read: "My daughter

loves to wear dresses and skirts," and "My daughter loves to wear pink clothing and

accessories." We also averaged the responses to make a scale for girls, $M = 3.95$, $SD = .88$; all

girls - $r(129) = .47$, $p < .001$; by ethnicity - Chinese-: $r(45) = .42$, $p = .004$; Mexican-: $r(32) =$

$.47$, $p = .007$; Dominican-: $r(27) = .08$, ns; African-American: $r(25) = .64$, $p = .001$(see

supplemental materials for more information on the cross-cultural equivalence of the measure).

We selected these items from a larger questionnaire on general gender rigidity because they

directly asked about the appearance rigidity qualities apparent in Study 1.

Results

Prevalence of gender appearance rigidity by gender. We analyzed girls' and boys'

appearance rigidity separately. Among girls, gender appearance rigidity was very high ($M =$

3.95, $SD = .88$). In fact, 69% of girls were reported to exhibit appearance rigidity (4 [*very true*]

or 5 [*extremely true*] on the response scale). This also means that 31% of girls exhibited some

(23%), little (5%), or no (3%) appearance rigidity (scores of 1 [*not at all true*] or 2 [*a little bit*

true] or 3 [*somewhat true*]). Among boys, gender appearance rigidity was also high ($M = 3.66$,

$SD = 1.09$). A little over half (56%) of boys were reported to exhibit appearance rigidity (4's or

5's). Thus, 44% of boys exhibited some (20%), little (17%), or no (7%) gender appearance

rigidity.

Ethnic group differences in prevalence of gender appearance rigidity. Because the

distributions leaned towards being negatively skewed (for girls: -1.25, for boys: -.58), to examine whether rigidity varied by ethnic group, we conducted chi squares contrasting children who exhibited appearance rigidity (4's or 5's) versus children who did not (1's to 3's). Among girls there were significant differences by ethnicity, x^2 (3, $N = 129$) = 7.87, $p = .049$, $\varphi = .25$. Fewer Mexican-American girls (50%) showed appearance rigidity compared to Dominican- (82%) ($p = .012$), Chinese- (73%) ($p = .036$), and African-American girls (72%) ($p = .093$), who did not significantly differ from each other, as determined by follow-up pair-wise chi square tests. Hence, appearance rigidity was generally prevalent in these 4-year-old girls from low-income, ethnically diverse backgrounds.

Among boys there was a marginally significant effect for ethnicity, x^2 (3, $N = 138$) = 7.37, $p = .061$, $\varphi = .24$. More Dominican-American boys (77%) were reported to express appearance rigidity compared to boys from the other ethnic groups (Mexican- [48%], Chinese- [51%], African-American [50%]; all p's < .05), who did not significantly differ from each other. Thus, appearance rigidity was found among over half of these 4-year-old boys across a diverse number of cultural groups, and was even more prevalent among Dominican-American boys.

Discussion

Study 2 showed that appearance rigidity is not limited to White, middle-class samples. Two-thirds of four-year-old girls and over half of four-year-old boys from diverse ethnic backgrounds, including Chinese, Dominican, and Mexican immigrant children, as well as African American children, on average showed a moderately high to very high degree of gender appearance rigidity. As in Study 1, the data also point to the variability in children's appearance rigidity. One-third of ethnic minority 4-year-old girls and 44% of ethnic minority 4-year-old boys showed a more tempered or no interest in gender-typed clothing. Perhaps these children

may be low on gender-typing generally, their gender identities may not be not as central to their general self-identities, or perhaps gender is made less salient in their peer environments.

We found a few ethnic differences. Unexpectedly, Mexican girls showed the least amount of gender appearance rigidity, which contrasts with assumptions that Latino culture may endorse more gender-typing. Moreover, African American girls showed as much gender appearance rigidity as girls in the other ethnic groups, contrary to the idea that African American girls may endorse gender roles less because of African American family structures (e.g., Hill, 2002). Gender is multidimensional (Ruble et al., 2006); thus, gender rigidity may be expressed in different ways depending on what is emphasized in one's culture. Perhaps as an alternative to appearance, Mexican girls express their gender in their play or peer preferences (Halim, Ruble, Tamis-LeMonda, & Shrout, 2013). And perhaps African American girls learn that appearance is particularly important in order to ensure a sense of respectability and social status (Wolcott, 2001). In the case of the ethnic group difference among boys, Dominican boys showed marginally more appearance rigidity than the boys in all the other ethnic groups. Scholars have noted that gender roles are often clearly defined in Dominican culture (Lopez, 2002). Perhaps gender is particularly salient to Dominican boys, and they are choosing appearance as the choice avenue of gender identity expression.

General Discussion

Across multiple studies, mixed methods, and diverse samples, we found that most girls were reported to show a keen interest in dressing in gender-typed ways at some point in early childhood (68% of 3- and 4-year-olds in Study 1; 69% of 4-year-olds in Study 2). Similarly, but to a lesser degree, a number of boys (over half of ethnic minority boys, about a quarter of White middle-class boys), also were reported to show an affinity for especially masculine clothing. We

consider this prevalence among boys to be remarkable given our expectations that appearance

rigidity would be a phenomenon found primarily among girls. Although gender may be more or

less salient in different cultural communities, children from multiple ethnic backgrounds –

particularly girls - on average exhibited a penchant for gendered clothing, thereby demonstrating

the robustness of gender appearance rigidity in early childhood.

Gender Differences

Girls generally were reported to exhibit more gender appearance rigidity than were boys

across both studies. This contrast may be due to gender differences in the construction of the

meaning of gender identity. For girls, being a girl may mean *looking* like a girl. For boys, we

speculate that being a boy may largely mean something else, like *acting* like a boy. Children's

stereotypes about girls are largely defined by appearance, whereas children's stereotypes about

boys are more often defined by behavior and activities (Miller et al., 2009). It is also possible

that boys do not *have* to be obsessed with appearances because their wardrobe choices are more

constrained, as boys' clothing already usually excludes feminine options. Boys may have less

choice in what they wear and thus find other avenues for the expression of their gender identities.

Although appearance rigidity was less prevalent among boys, when boys did show

appearance rigidity, it often revolved around avoiding other-gender-typed clothing, as in Study 1.

We speculate that knowledge of status differences could be emerging; thus, boys may desire to

avoid looking feminine because females have lower status than males (Rudman & Glick, 2012).

It is also possible that boys may be punished more for looking feminine than vice versa

(Smetana, 1986). Perhaps also, at an early age, boys' avoidance of femininity can be seen in their

avoidance of feminine clothing, and later on in development this type of avoidance is extended to

other domains such as boys' self-censorship in expressing certain emotions (Adler, Kless, &

Adler, 1992). Because the avoidance of femininity was a noticeable theme among boys, it would be beneficial in future research to directly and systematically assess the avoidance of cross-gender-typed clothing.

Ethnic similarities and differences

Study 1 and 2 showed that appearance rigidity was comparably prevalent in both White (68% of 3- and 4-year-olds) and ethnic minority (69% of 4-year-olds) young girls. Thus across five different ethnic groups, appearance rigidity was the norm among young girls, although in each sample there were girls who did not express the highest levels of appearance rigidity as well (31-32% in 3- or 4-year-olds). In contrast, cross-cultural comparisons among boys revealed an interesting finding. In Study 1, only 11% of 3- and 4-year-old White boys showed appearance rigidity. Based on these results, it was unexpected to find that over half (56%) of 4-year-old ethnic minority boys expressed appearance rigidity (and among Dominican 4-year-old boys, the prevalence rate was 77%). This finding suggests that appearances may be more integral to the gender identities of ethnic minority boys (see Archer & Yamshita, 2003). Alternatively, as 44% of 5- and 6-year-old White boys in Study 1 showed appearance rigidity, nearing the 56% of the 4-year-old ethnic minority boys, it is possible that appearance rigidity has an earlier developmental course for ethnic minority boys than White boys. A future, direct cross-cultural comparison and a longitudinal study on the developmental trajectories of appearance rigidity could elucidate this finding. If other dimensions of gender-typing (sex segregation, play) also showed earlier developmental courses for ethnic minority boys than for White boys, this might suggest that general gender identity development may begin earlier for them than for White boys. We speculate that perhaps gender is more salient in the environments of ethnic minority boys compared to White boys.

Another interesting cultural difference was that in the White, Chinese, and African American groups, appearance rigidity was more prevalent in girls compared to boys. However, both Latino groups showed parity in appearance rigidity between girls and boys (82% and 77% of Dominican girls and boys, respectively; 50% and 48% of Mexican girls and boys, respectively). We speculate that the importance of looking feminine or masculine may be stressed equally for girls and boys in Latino groups.

Testing Cognitive Theories of Gender Development

Supporting cognitive theories of gender development, several key findings point to the role of children's self-socialization as an important addition or alternative to socialization factors in explaining gender appearance rigidity. First, a greater understanding of gender stability was associated with currently appearing more gender-typed in Study 1b. Second, currently looking more gender-typed was linked to motivational underpinnings such as positive feelings and evaluations of one's own gender group in Study 1b. Third, consistent with predictions from the Phase Model of Transitions (Ruble, 1994), we found in Study 1a that girls' gender-typed appearances followed the trajectory of rigidity followed by flexibility (marginally for the lifetime appearance rigidity measure, significantly for the current appearance rigidity measure). These cohort differences suggest that appearance rigidity may change over the course of early childhood and follow a phase-like pattern similar to gender-related cognitions, such as gender stereotyping. However, as to the specific timing of rigidity followed by flexibility, prior research has found that the rigidity of gender stereotyping peaked around ages 5 and 6 and then became more flexible (Miller et al., 2006; Trautner et al., 2005). Thus, these data suggest that, for girls, a somewhat earlier period of rigidity may occur for gender-related behavior than for gender-related cognition. It remains to be seen if rigid gendered behavior becomes more flexible after age 6 for

boys. If so, then boys' trajectories of gender-typed behavior may align with the trajectories of their gender-related cognitions. Overall, these data suggest that cognitive processes may underlie children's gender appearance rigidity, though longitudinal research is needed to establish the causal direction of this relation. Future studies should also test whether the same cognitive processes are linked to appearance rigidity in ethnically diverse groups.

Limitations and Future Directions

In the current study, parent preferences were not associated with children's gender-typed appearances. However, because our primary focus concerned testing cognitive theories of gender development, our measures of parent preferences were limited in the number of items used. Also, it is possible that some parents may have been biased in their reports, either unaware of or downplaying how much they actually encourage their children to dress in stereotypical ways. In addition, it is possible that parent preferences interact with some other factors, such as children's cognitive development, in affecting their gender-typed dress, but we lacked the power to adequately examine this kind of interaction. Nevertheless, our parent measures had the benefit of being very specific (Zosuls et al., in press). More research is needed to understand the intersection between parent preferences and children's gender-typed dress. Perhaps a more nuanced measure would capture a bidirectional influence between children and parents in determining children's gendered appearances. Alternatively, parent preferences may not be as strongly connected to appearance rigidity at this age, but at earlier ages, when children are not as attuned to gender categories and are not as invested in their gender identities.

Another limitation was that our measure of appearance rigidity in Study 2 showed low correlations for some of the ethnic by gender groups. However, sample sizes were relatively small when split by ethnic and gender group. Thus, we lacked the power to draw firm

conclusions about the cross-cultural equivalence of the measure (Cohen, 1992). In addition,

because the items in the measure were very concrete ("skirts", "baseball caps") and did not ask

about abstract concepts (like "appearance rigidity") we are confident that mothers from all ethnic

groups understood the questions. Nevertheless, it would be interesting for a future study to

directly examine the particular ways gender manifests itself in the adornments and dress of

different cultural groups.

The present findings suggest a number of other important directions for future research.

One issue concerns the social identity implications of gender-related appearance rigidity. For

example, if appearance rigidity represents strong gender identification, as our research suggests,

then children who are rigid may show more ingroup favoritism than those who are more flexible.

Our finding that girls showed more gender appearance rigidity than boys is consistent with

literature sometimes finding that girls show more intergroup bias than do boys (Leroux, 2008,

Powlishta, 1995; Susskind & Hodges, 2007; Zosuls et al., 2011).

Another important direction concerns the causes and consequences of individual

differences in appearance rigidity. Although we have emphasized how prevalent appearance

rigidity is for girls, it is important to remember that there was also a subset of girls who exhibited

no appearance rigidity. And although, depending on the sample, about a quarter to almost half of

boys exhibited appearance rigidity, many boys never did. What makes these individuals different

from one another? Some children could be generally more gender-typed than others due to

experiencing different hormonal environments in utero (e.g., girls exposed to high levels of

androgens could prefer more masculine dress, activities, and peers; Berenbaum & Snyder, 1995)

or experiencing different amounts of felt pressure to conform to gender norms from family, peers

or the media (Egan & Perry, 2001). Alternatively, perhaps some children are defining their

gender through other avenues besides their appearance.

Whatever the explanation for these individual differences, it would be interesting to track these differences over time and understand the developmental trajectory of appearance rigidity. Journalists have increasingly discussed the negative impact of the princess culture on girls' development (e.g., Fine, 2010; Orenstein, 2010). On the one hand, in light of the lower levels of appearance rigidity among older girls in Study 1 suggesting the dearth of elementary school-aged girls who wear pink, frilly dresses (Halim et al., 2011), we posit that appearance rigidity may be a short-lived phase. If so, then perhaps appearance rigidity need not elicit stress around parent-child interactions, potentially damaging parent-child relationships and making children perceive that expressing one's gender identity is bad. On the other hand, if appearance rigidity is more long-term and stable, then it may lead children, and especially girls, to focus too much on their physical appearance, especially if they are continually praised by others for looking pretty. Appearance rigidity may then feed into defining one's self and one's self-worth in terms of how one looks. In turn, one's self-esteem may become contingent on self-perceived attractiveness, which can contribute to psychological distress (Crocker & Wolfe, 2001; Eccles, Barber, Jozefowicz, Malenchuk, & Vida, 1999). A hyper-focus on one's physical appearance may also feed into girls' self-objectification, which has also been associated with poor psychological adjustment and math performance (e.g., Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998).

Conclusion

In conclusion, through multiple methods and across studies in a large and diverse sample, our study emphasizes that the clothing that children put on each day has significance and is a central, but previously missing piece, in the study of gender and identity development. Whether a girl dons a pink, frilly dress or a boy wears a red and blue Spiderman T-shirt may reflect

changing understandings of gender categories and developing motivations to master these

categories. Thus the present findings support the view of young children as active self-

socializing agents, picking up clues on what gender looks like, and doggedly following their

deductions.

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Table 1

Study 1a: Characteristic Examples of Appearance Rigidity

Parent quotes

Girls

Dresses and skirts   "No option, she wears dresses and won't wear anything else, always
stockings even when it is cold out."
"All the time, skirts – pastel colors, has to wear skirts, always done this
since turned 3."
"[She] always prefers a dress. I have to convince her if it's cold to wear
leggings."
"[Her typical outfit is] a dress or a skirt. We do negotiate if [we're] going
to the park, but [she] doesn't like jeans unless [they] have embroidered
flowers [on them]."
"Pretty dress – pink and frilly."
"Dress, tights, Mary Jane shoes; pink is [her] favorite color now."

Avoidance of pants   "Pants are not a choice. [She says,] 'I want to wear a dress and that's it.'
Dress over skort."
"I bought two pairs of corduroy pants [for her]. She won't wear them
because [they're] too masculine."
"[She] refuses to wear pants – I have to persuade her. [My daughter says,]
'I want to wear a dress – I don't like pants.'"

Other   "She'd wear [her pink ballet slippers] all the time if she could."

Boys

Avoidance of   "He wouldn't be caught dead in 'girls'' clothing."
feminine clothing   "Negated burgundy pants because 'red is for girls.'"
"He wouldn't wear a sweater that is feminine – he won't wear hand-me-
downs from his big sister."
"At [his] grandmother's he had no underwear. She put hers on him. He
got upset."
"Won't wear his sister's pink hand-me-downs."
"Won't wear pink or purple. Says boys' stuff is better in general."
"He refuses colors 'for girls.'"
"Wouldn't wear sandals because they looked like girls' [sandals]."

Superhero   "Superhero costumes—Superman, Spiderman."
"Batman outfits."

Formal menswear   "Suit and tie and shoes and briefcase! [He says to me,]'Don't I look
handsome!'"
"Loves to wear shirts and ties."

Other   "[He] loves to wear baggy cargo pants."

Table 2

Percentage of Children Who Have Shown Appearance Rigidity (Lifetime Appearance Rigidity)

	No interest	Little interest	Pretty interested	Insistent
Girls				
3- & 4-year-olds	16%	11%	5%	68%
5- & 6-year-olds	35%	15%	10%	40%
All girls	26%	13%	8%	54%
Boys				
3- & 4-year-olds	68%	21%	0%	11%
5- & 6-year-olds	33%	6%	17%	44%
All boys	51%	14%	8%	27%
All 3- & 4-year-olds	16%	11%	5%	68%
All 5- & 6-year-olds	35%	15%	10%	40%
All children	38%	13%	8%	41%

Note. Percentages are calculated for each row.

Figure 1
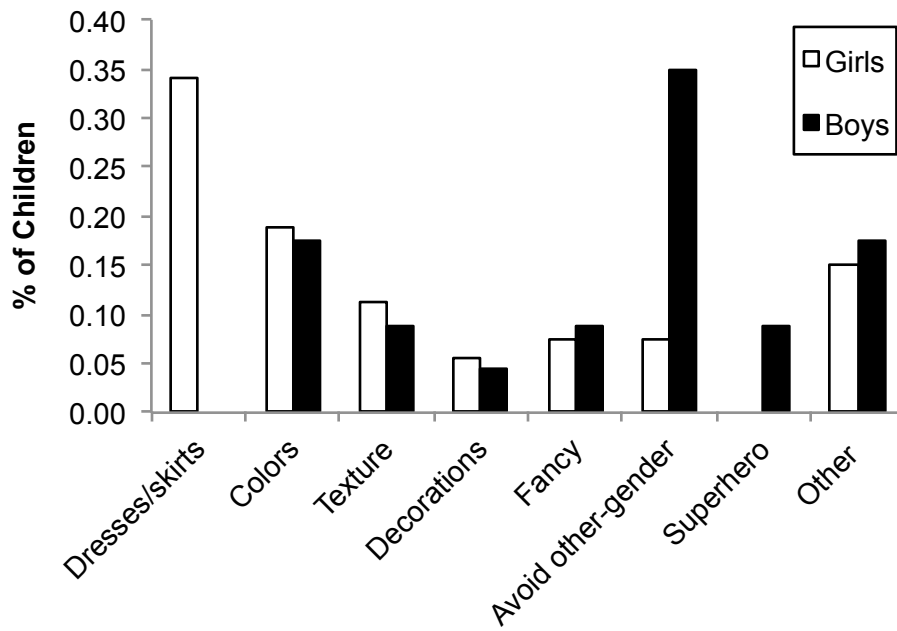
Study 1a: Categorization of the way girls' and boys' manifest appearance rigidity based on parents' reports.

Figure 2
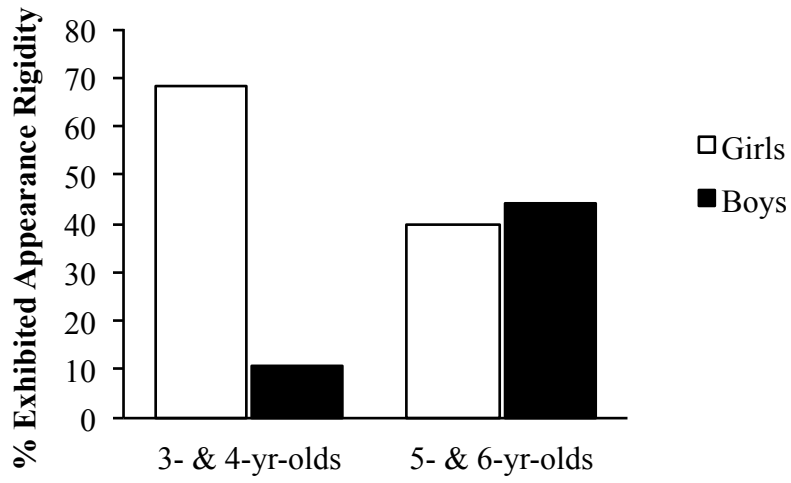
Study 1a: Prevalence of lifetime appearance rigidity by gender and cohort.

Acknowledgments

Online Supplemental Materials

Study 1: Examples of current expression of appearance rigidity measure

	Examples from girls	Examples from boys
Femininity		
1 Not at all feminine	N/A*	*"...He play dresses a lot – cowboy, Jedi knight…"*
2 Neutral	*"Jeans and t-shirts"*	*"Jeans and a t-shirt"*
3 A little feminine	*"Pants, shoes, lacy socks"*	*"Pastel-colored shorts"*
4 Pretty feminine	*"Purple outfit, soft clothing, velour, pants with flowers"*	N/A*
5 Very feminine	*"Dress, tights, Mary Jane shoes. Pink is her favorite color now"*	N/A*
Masculinity		
1 Not at all masculine	*"A dress and a headband, no pants"*	N/A*
2 Neutral	*"A pair of pants and a shirt"*	*"Jeans, t-shirt"*
3 A little masculine	*"Overalls, a pink t-shirt, and hiking boots"*	*"Polo shirt, white socks, cap"*
4 Pretty masculine	N/A*	*"T-shirt with Rugrats, Pokemon, or a guy with a bike and jean shorts, socks, and sneakers"*
5 Very masculine	N/A*	*"Underwear [has] characters [on them] – male action heroes, any color other than pink, [anything] that has a graphic [on them] – sports, cars…"*

*No children received this rating based on parent report of their current typical outfit.

Study 1: Details of Parent Preferences for Child's Clothing measure:

An examination of the means of the components of the parent preference measure indicated that parents felt very comfortable if their child wore gender-typed clothing ($M = 6.66$ on a scale from 1 to 7, $SD = .70$), but, on average, preferred somewhat more gender-neutral clothing ($M = 3.59$ on a scale from 1 to 5, $SD = .79$). A paired t-test indicated that parents' average level of comfort differed from their mean level of preference concerning gender-typed dress, $t(69) = 12.94$, $p < .001$, $d = 3.12$ (the clothing preference item was converted to a 7-point scale). Separate paired t-tests by child gender indicated that this was true for both parents of boys and girls. These results suggest that parents may be accepting if their children desire to dress in very gender-stereotypical ways, but, on average, they actually prefer their child to wear less gendered clothing. Thus, although parents reported being comfortable with their children wearing very gender-typed clothing, they *preferred* more gender-neutral clothing. Perhaps this ambivalence on the part of parents explains the lack of association between parent preferences and children's clothing.

Study 1: Exploration of Gender Consistency as a Predictor of Appearance Rigidity

In our analyses, we focused on gender stability because of the timing at which we expected appearance rigidity to occur and also because it has been associated with other types of gender rigidity. However, we also felt it would be interesting to know if appearance rigidity behaviors decrease in children who understand gender consistency. To measure consistency, interviewers asked children 11 questions according to the methods of Ruble, Taylor, and colleagues (2007): "If you went into the other room and put on clothes like these (a picture of boys' clothes was shown for girls and vice versa), would you then *really* be a girl or *really* be a boy?" and "If this grownup (adult male) did the work that woman usually do, would this grownup *really* be a man or *really* be a woman?" The targets of the questions included themselves and others, about children and adults, and about boys/men and girls/women. A sum of correct answers was calculated and scores could range from 0 to 11. Given the young age of this sample, consistency scores were low (girls' $\alpha = .85$, boys' $\alpha = .82$; $M = 5.91$, $SD = 3.18$; Range: 0.00 to 11.00). We also explored a relation between an understanding of gender consistency and appearance rigidity, predicting that an increased understanding of gender consistency would correspond with a decrease in appearance rigidity. We conducted a multiple regression similar to the one used for gender stability, but substituted consistency for stability. The data revealed no significant effects. We also tested whether understanding gender stability, but having low understanding of gender consistency would predict more appearance rigidity by testing whether there was an interaction between gender stability and consistency in predicting appearance rigidity. However, the interaction was not significant ($p = .473$). Only gender stability remained a significant predictor ($p = .036$). The lack of predictive power of gender consistency may be due to the low level of understanding most of the sample exhibited.

Study 2: Cross-Cultural Equivalence of Gender Appearance Rigidity Measure

When we examined correlations between the items for the gender appearance rigidity measure by ethnicity and gender, 5 of the 8 groups had relatively robust correlations. We do not believe that the lack of a significant correlation for the other groups should cause great concern. For example, the scatterplot for the Dominican-American girls revealed that their low correlation was caused by the little variation shown in response to the items, or a ceiling effect. All Dominican-American girls scored from 3's to 5's on each item. When we examined the scatterplots to explain the low correlations found between scale items for Mexican- and African-American boys, we observed that many of these boys were low on avoidance of feminine attire, but still high on preference for masculine attire. Conceptually this was plausible to us, without invalidating the measures. To appropriately look at cultural differences in the reliability of a measure, an IRT analysis would be called for. However, with only two items, we believed an IRT analysis was inappropriate. In addition, we piloted these measures on different groups, and did extensive testing to make sure they translated well in each Spanish, Chinese, and English. Interviewers did not note any mothers who had problems responding to these questions.