Self-perceived gender typicality, gender-typed attributes, and gender stereotype endorsement in elementary-school-aged children

by Meagan M. Patterson

2012

Self-perceived gender typicality, gender-typed attributes, and gender stereotype endorsement in elementary-school-aged children
By
Meagan M. Patterson

Abstract:

This study examined relations among self-perceived gender typicality, gender-typed attributes, and gender stereotype endorsement with a sample of elementary-school-aged children (N = 100, ages 6 to 12) from the Midwestern United States. Children who perceived themselves as more gender-typical were more interested in same-gender-typed activities and occupations and less interested in other-gender-typed activities and occupations than children who perceived themselves as less gender-typical. Gender typicality was linked to gender stereotype endorsement, as predicted based on Liben and Bigler's (2002) dual-pathway model of gender development, with children who perceived themselves as less gender-typical having more egalitarian (less stereotyped) attitudes than children who perceived themselves as more gender-typical. The observed relations between gender-typed attributes and self-perceived gender typicality and between self-perceived gender typicality and gender stereotype endorsement did not differ across gender or age. These findings indicate that even young elementary-school-aged children use their knowledge of cultural gender roles to make subjective judgments regarding the self, and, conversely, that views of the self may influence personal endorsement of cultural gender stereotypes. Although the majority of extant research has focused on negative outcomes associated with low self-perceived gender typicality (e.g., low self-esteem), this research indicates that positive outcomes (e.g., flexible gender role attitudes) may also be associated with low self-perceived gender typicality.

Author Note

3

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Introduction

Gender is a central aspect of identity throughout the life course and across cultures (Leaper & Bigler, 2011; Ruble, Martin, & Berenbaum, 2006), and gender identity has been a topic of consistent interest to gender development researchers (Zosuls, Miller, Ruble, Martin, & Fabes, 2011). One key aspect of gender identity is self-perceived gender typicality (i.e., the extent to which an individual perceives him- or herself to be similar to or different from others of the same gender; Egan & Perry, 2001). The purpose of this study was to examine several questions about self-perceived gender typicality in elementary-school-aged children. Specifically, the current study examined (a) relations between children's self-perceived gender typicality and gender-typed attributes, as well as whether those relations varied by gender and age and (b) relations between children's self-perceived gender typicality and gender stereotype endorsement, as well as whether those relations varied by gender and age. These comparisons were aimed at testing aspects of models of the development of gender-related cognitions and attitudes (Egan & Perry, 2001; Liben & Bigler, 2002) and extending research using these models to younger age groups than have been studied in previous research.

Self-Perceived Gender Typicality

Historically, most research on gender typicality has focused on clinically referred populations (e.g., Bradley & Zucker, 1997; Zucker & Green, 1992), but recently, interest in gender typicality among non-clinical populations has increased (e.g., Bailey, Bechtold, & Berenbaum, 2002; Carver, Yunger, & Perry, 2003; Corby, Hodges, & Perry, 2007; Drury, Bukowski, Saldarriaga, & Santo, 2009; Leaper & Brown, 2008; Lee & Troop-Gordon, 2011; Menon, 2011; Smith & Leaper, 2006; Tobin et al., 2010; Yu & Xie, 2010; Yunger, Carver, & Perry, 2004). Nearly all extant studies of gender typicality have been conducted with samples from the United States (all studies cited are based on U.S. samples with the

exception of Drury et al. (2009), which used a Colombian sample, Menon (2011), which used an English sample, and Yu & Xie (2010), which used a Chinese sample). Given the likelihood of cultural influences on the impact of gender typicality (e.g., gender typicality may have a greater impact on outcomes in cultures with more rigid gender norms), caution should be exercised in extending these findings beyond the U.S. context.

The most prominent line of research on self-perceived gender typicality is that of Perry and colleagues (e.g., Carver et al., 2003; Egan & Perry, 2001; Yunger et al., 2004). According to Perry and colleagues, individuals may base their self-perceived typicality on a wide variety of personal characteristics, including traits, interests, and appearance (see also Spence, 1984). For example, a girl with strong interest in mathematics (a masculine-typed academic domain) may still consider herself highly gender-typical due to her possession of a nurturing personality and a typically feminine appearance.

A number of studies with late childhood and early adolescent participants have found that self-perceived gender typicality is positively related to psychological adjustment. For example, higher self-perceived gender typicality has been linked to higher self-esteem (Egan & Perry, 2001; Yu & Xie, 2010) and lower levels of internalizing problems (Carver et al., 2003; Menon, 2011; Yunger et al., 2004). Work by Perry and colleagues indicated that low self-perceived gender typicality was particularly detrimental when low typicality occurred in conjunction with strong pressure to conform to gender norms (Carver et al., 2003; Egan & Perry, 2001; Yunger et al., 2004). Self-perceived gender typicality has also been linked to various aspects of peer interactions, such as preschool-aged children's peer choices (Martin, Fabes, Hanish, Leonard, & Dinella, 2011) and peer acceptance in childhood and adolescence (Drury, Bukowski, Saldarriaga, & Santo, 2009; Smith & Leaper, 2006).

Children are also capable of using gender typicality as a factor in their evaluations of others in middle childhood (Biernat, 1991; Martin, Wood, & Little, 1990) and can use these evaluations to guide their own behavior. For example, by age 8, children are more likely to imitate a same-gender model who has behaved in gender-consistent ways in the past than they are to imitate a model who has previously behaved in a gender-inconsistent manner (Perry & Bussey, 1979). Such gender-identity-based decisions can have ramifications throughout the life course; for example, peer and activity choices in childhood may influence subsequent gender-typed characteristics (Maccoby, 1998; Martin & Fabes, 2001; McHale, Kim, Dotterer, Crouter, & Booth, 2009) and patterns of interaction developed in the context of gender-segregated friendships have been theorized to influence adolescents' behavior in heterosexual romantic relationships (Leaper & Anderson, 1997).

The participants in most extant research on gender typicality have been older children and young adolescents; little research has examined self-perceived gender typicality in middle childhood (for exceptions, see Bos & Sandfort, 2010; Lamb, Bigler, Liben, & Green, 2009). One reason for the dearth of research on gender typicality in middle childhood is the lack of a measure of self-perceived gender typicality specifically designed for elementary-school-aged children. The most widely used measure of self-perceived gender typicality (Egan & Perry, 2001) was developed and validated with fourth through eighth grade students and may be difficult for younger children to understand. For example, the measure uses a double-ended stem that may overload the processing capacities of younger elementary-school-aged children (Bos & Sandfort, 2010; Van Den Bergh & Marcoen, 1999). Researchers using the Egan and Perry measure with younger participants have altered the measure in various ways in order to facilitate understanding (Bos & Sandfort, 2010; Lamb et al., 2009), and in doing so may have affected the reliability or validity of the measure.

Gender differences in self-perceived gender typicality. Findings on gender differences in self-perceived gender typicality have been somewhat mixed. Some studies have found higher levels of self-perceived gender typicality among boys than girls (Bos & Sandfort, 2010; Carver et al., 2003; Egan & Perry, 2001; Yunger et al., 2004), whereas other studies have not found significant gender differences (Lamb et al., 2009; Smith & Leaper, 2006; Yu & Xie, 2010). Researchers have posited that the observed higher levels of gender typicality among boys may be due to greater pressure for gender conformity among boys (Egan & Perry, 2001) or the higher status of men and boys relative to women and girls (and of masculine to feminine activities and characteristics) in most cultures (Lurye, Zosuls, & Ruble, 2008).

Self-Perceived Gender Typicality and Gender-Typed Attributes

Self-perceived gender typicality is a flexible construct, in that individuals may base their perceived typicality on a variety of personal characteristics, including interests, abilities, personality traits, and physical appearance (Egan & Perry, 2001; Spence, 1984). Consistent with these theoretical predictions, previous research has found relations between self-perceived gender typicality and various gender-typed characteristics, including activity preferences, personality traits, and peer preferences (e.g., Egan & Perry, 2001; Martin et al., 2011). Several extant studies have found relations between gender typicality and gender-typed behaviors or characteristics, but there is some disagreement regarding the aspects of gender-typed attributes that are most relevant. Some research indicates that children low in gender typicality tend to engage in more other-gender-typed behavior, but not less same-gender-typed behavior, than children high in gender typicality (Kreiger, 2005; Van Volkom, 2003). Other research, however, indicates that self-perceived gender typicality is more strongly related to same-gender-typed interests than other-gender-typed interests (Egan & Perry, 2001). Self-perceived gender typicality may also be related to other aspects of gender typing, such as physical appearance; however, such relations have not been examined in extant research.

Gender differences in relations between gender typicality and gender-typed attributes. Based on previous research, it is possible that factors related to self-perceived gender typicality may differ for boys and girls. For example, Lamb et al. (2009) found that self-perceived gender typicality was positively related to same-gender-typed interests (but unrelated to other-gender-typed interests) for girls, and unrelated to either same-gender-typed or other-gender-typed interests for boys. In contrast, Egan and Perry (2001) found that self-perceived gender typicality was positively related to same-gender-typed activity preferences and personality traits for both boys and girls, but positively related to other-gender-typed personality traits for boys and unrelated to other-gender-typed personality traits for girls.

Some researchers have argued that the avoidance of other-gender-typed attributes (e.g., not wearing clothes that are pink or otherwise marked as feminine) may be perceived as especially important by boys, given the greater pressure for gender conformity for boys and lower cultural status of feminine-typed attributes (e.g., Halim & Ruble, 2010; Powlishta, 2002). Some support for this notion comes from work by Martin et al. (2011), who found that, for boys, self-perceived gender typicality was positively related to time spent playing with boys and negatively related to time spent playing with girls, whereas for girls self-perceived gender typicality was positively related to time spent playing with girls, but unrelated to time spent playing with boys.

Gender typicality, gender-typed attributes, and age. Due to the subjective nature of self-perceived gender typicality, individuals may choose to base their sense of typicality on a number of factors (Egan & Perry, 2001), and an individual who has gender-atypical characteristics or interests may continue to view him- or herself as gender-typical based on other qualities (Spence, 1984). Given that younger children tend to be more rigid in their thinking about gender than older children (Martin, Ruble, & Szkrybalo, 2002; Ruble et al., 2006; Signorella, Bigler, & Liben, 1993), they may be less able to engage

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

in these trade-offs than older children. Thus, it may be that younger children's self-perceived gender typicality will be more closely tied to their gender-typed attributes than that of older children.

Self-Perceived Gender Typicality and Gender Stereotype Endorsement

In contrast to previous studies, which have focused primarily on negative outcomes associated with low self-perceived gender typicality (e.g., peer rejection or low self-esteem), the present study aims (in part) to examine whether low self-perceived gender typicality is associated with low levels of gender stereotype endorsement. Low endorsement of gender stereotypes, along with other aspects of egalitarian gender role attitudes, is associated with a variety of positive outcomes, including higher levels of educational attainment (Scott, 2004), academic motivation (Leaper & Van, 2008), and academic performance (Patterson & Pahlke, 2011).

The theoretical rationale for examining relations between self-perceived gender typicality and gender stereotype endorsement comes from theoretical models (e.g., Liben & Bigler, 2002; Martin & Halverson, 1981; Martin et al., 2002; Tobin et al., 2010) positing that children's gender stereotype endorsement should be related to their gender-typed views of the self (e.g., perceptions of one's own gender-typed interests, abilities, and characteristics). One relevant theoretical model is Liben and Bigler's (2002) dual-pathway model of gender differentiation, which includes two proposed pathways of gender development. Both pathway models predict relations between gender-typed self-views and gender stereotype endorsement, at least for children who consider gender to be an important and personally meaningful social category, but the proposed direction of effect differs based on the pathway. In the attitudinal (or "other-to-self") pathway, an individual's personal endorsement of cultural gender stereotypes drives views of and decisions about the self, whereas in the personal (or "self-to-other") pathway, self-perceptions drive gender stereotype endorsement. Liben and Bigler

(2002) do not view these pathways as competing models, but rather argue that both pathways can explain relations between self-views (e.g., self-perceived gender-typed attributes) and other-views (e.g., gender stereotype endorsement) and that the relations between self- and other-views may be reciprocal.

In addition, it is important to note that the proposed relation between self-perceptions and gender stereotype endorsement is for prescriptive, rather than descriptive, gender stereotypes. Liben and Bigler (along with other theorists) argue that descriptive stereotypes (i.e., knowledge of who generally engages in particular behaviors or fulfills particular roles, sometimes labeled gender correlates) are unlikely to be related to gender-typed self-views because such knowledge will generally be similar among individuals of similar cultural background and developmental level, and is often near ceiling levels by middle childhood. Prescriptive stereotypes (i.e., attitudes regarding who *should* engage in a given behavior or fulfill a given role), however, can vary widely among individuals, based on factors such as personal gender salience and ideological perspective. These prescriptive stereotypes are an important component of gender role attitudes and are theoretically predicted to be related to gender-typed self-views (Liben & Bigler, 2002).

There are several possible mechanisms by which an individual's gender-typed characteristics might be related to his or her gender stereotype endorsement (Liben & Bigler, 2002; Ruble & Martin, 2002). One possibility is that children with many other-gender-typed interests or characteristics might develop more egalitarian gender role attitudes (i.e., show lower levels of gender stereotype endorsement) by projecting their own attributes onto their gender ingroup, consistent with the personal ("self-to-other") pathway model. Research indicates that individuals do tend to project their personal attributes and attitudes onto other ingroup members (see Robbins & Kreuger, 2005, for review). For example, Martin, Eisenbud, and Rose (1995) found that children projected their own views of novel toys

10

onto their gender ingroup (e.g., girls assumed that other girls would like toys that they personally liked). Another possibility is that children who have gender-atypical attributes may consequently have a greater awareness of within-group variability than more gender-typical children, thus leading to more flexible and egalitarian gender stereotypes. Consistent with this view, research with self-identified "tomboys" found that girls who viewed themselves as tomboys showed greater variability in their stereotypes of girls' interests compared to more traditional girls (Martin & Dinella, 2012).

Although they posit a clear relation between gender-typed attributes and gender stereotypes in their pathway models approach, Liben and Bigler do not account for the influence of self-perceived gender typicality in these models. It is possible that, in addition to the personal importance of gender (i.e., gender salience) and cultural gender stereotypes, children also take into account their gender typicality when making decisions or drawing conclusions about gender-typed objects or behaviors (Martin et al., 2011; Tobin et al., 2010). For example, a girl might conclude that although playing football is not an appropriate activity for most girls, it is an acceptable activity for her, as she is not a typical girl.

Gender differences in relations between gender typicality and gender stereotype endorsement. Very little research has examined relations between self-perceived gender typicality and gender stereotype endorsement, but research on relations between gender-typed attributes and gender stereotype endorsement suggests that the relations between these variables may differ by gender. For example, Liben & Bigler (2002) found that gender-typed attributes were related to concurrent gender stereotype endorsement for girls, but not for boys (although boys' gender-typed attributes were related to gender stereotype endorsement at a later time point). Thus, it is possible that a similar gender difference may be seen for gender typicality, with stronger relations to gender stereotype endorsement for girls than boys.

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Gender typicality, gender stereotype endorsement, and age. As with research on gender typicality, much of the research on relations between gender-typed views of the self and gender-typed views of others (e.g., gender stereotype endorsement) has been conducted with late childhood and early adolescent participants. Several researchers (Powlishta, 2002; Ruble & Martin, 2002) have advocated for extending the age range of such research downward and examining relations among gender-typed views of self and others in early and middle childhood. One rationale for extending these questions to younger children is the notion that by early adolescence, decisions regarding a number of gender-typed aspects of the self (e.g., interests and aspirations) may have already been made, and thus relations between gender stereotypes and gender-typed self-views observed in adolescence may be weaker than those that might be observed earlier in childhood (Ruble & Martin, 2002).

In addition, younger children are less flexible in their thinking about gender (Martin et al., 2002; Ruble et al., 2006; Signorella et al., 1993) and tend to have more essentialist views of gender (Gelman & Taylor, 2000; Taylor, 1996) than older children and adults. These ways of thinking may lead younger children to perceive little within-group variability in gender categories. This perception of all gender category members as highly similar may also make younger children more likely to project their views of themselves onto their gender ingroups. Some empirical data support this notion of decreasing relations between gender-typed self-perceptions and gender stereotype endorsement with age. For example, Signorella and Frieze (2008) found stronger relations between gender-typed attributes (e.g., activity and occupational preferences) and gender stereotype endorsement among elementary-school-aged children than among adolescents. Thus, both theoretical and empirical predictions suggest that self-perceived gender typicality may be more strongly tied to gender stereotype endorsement for younger children than for older children.

The Present Study

The purpose of the present study was twofold: (a) to examine the established relations among gender typicality and gender-typed attributes (e.g., Egan & Perry, 2001) with a younger population than has been included in previous research and (b) to test the personal ("self-to-other") pathway of Liben and Bigler's (2002) pathway model of gender differentiation, extending the notion of gender-related self-views to include self-perceived gender typicality. Many theoretical models of the relations among gender typicality, gender-typed attributes, and gender stereotype endorsement posit reciprocal relations among these constructs (e.g., Liben & Bigler, 2002; Tobin et al., 2010). The proposed pathway of influence tested in this study is one in which gender-typed attributes drive self-perceived gender typicality, which in turn drives gender stereotype endorsement; this model is the one most strongly supported by existing theory and empirical research (e.g., Egan & Perry, 2001; Liben & Bigler, 2002). These hypothesized relations were tested with two sets of analyses: (a) relations between self-perceived gender typicality and gender-typed attributes, including an examination of whether these relations differed by gender or age, and (b) relations between self-perceived gender typicality and gender stereotype endorsement, including an examination of whether these relations differed by gender or age. In addition, the current study used a measure of gender typicality specifically developed for use with elementary-school-aged children.

Relations between self-perceived gender typicality and gender-typed attributes. Given the support in existing research for relations of gender typicality with both same-gender-typed (Egan & Perry, 2001) and other-gender-typed (Kreiger, 2005; Van Volkom, 2003) interests and behaviors, the predictions were that self-perceived gender typicality would be positively correlated with same-gender-typed interests (H1) and negatively correlated with other-gender-typed interests (H2) and other-gender friends (H3).

Gender differences in relations between self-perceived gender typicality and gender-typed attributes. The relations discussed in H1 – H3 were predicted for both boys and girls. However, given the greater pressure on boys to conform to gender norms and avoid other-gender-typed interests (e.g., Egan & Perry, 2001; Smith & Leaper, 2006), it was predicted that the negative relations between self-perceived gender typicality and other-gender-typed interests and other-gender friends would be stronger for boys than for girls (H4).

Self-perceived gender typicality, gender typed attributes, and age. Based on younger children's more rigid attitudes about gender (Martin et al., 2002; Ruble et al., 2006), it was predicted that the relations between self-perceived gender typicality and gender-typed attributes would be stronger for younger children than for older children (H5).

Relations between self-perceived gender typicality and gender stereotype endorsement. Based on theoretical models positing relations among beliefs about gender for the self and others (e.g., Liben & Bigler, 2002), the prediction was that self-perceived gender typicality would be positively related to gender stereotype endorsement (H6).

Gender differences in relations between self-perceived gender typicality and gender stereotype endorsement. Self-perceived gender typicality and gender stereotype endorsement were predicted to be related for both boys and girls. However, based on previous findings of concurrent relations between gender-typed attributes and gender stereotype endorsement for girls but not boys (Liben & Bigler, 2002), the prediction was that the relation between self-perceived gender typicality and gender stereotype endorsement would be stronger for girls than for boys (H7).

Self-perceived gender typicality, gender stereotype endorsement, and age. Based on younger children's more rigid thinking about gender (Martin et al., 2002; Ruble et al., 2006; Signorella et al.,

1993), the prediction was the relation between self-perceived gender typicality and gender stereotype endorsement would be stronger for younger children than for older children (H8).

Method

Participants

Participants (N = 100; 56 boys, 44 girls) were recruited from after school care programs at two elementary schools in a suburban area in the Midwestern United States. Recruitment letters and consent forms were distributed to the parents or guardians of all children attending the two after school care programs. All children whose parents returned signed consent forms and who themselves assented to participate were included in the study. Participants ranged in age from 6 to 12 years (M = 105.14 months, SD = 22.24 months). Racial background data was available for 90% of participants. Among these participants, the sample was 4% African American, 2% Asian American, 75% European American, 6% Latino, and 13% other races or multiracial.

Both participating schools served primarily European American students (90% and 73%); one school served a high-income population (3% of students eligible for free or reduced-price lunch) and one school served a lower-income population (63% of students eligible for free or reduced-price lunch). The two schools did not differ in mean age of participating children, $t(98)$ = 1.00, p = .32, the proportions of children in each gender category $\chi^2(1, 100)$ = 0.72, p = .40, or the proportions of European American and non-European American children, $\chi^2(1, 90)$ = 2.09, p = .15. The two gender groups did not differ in mean age, $t(98)$ = 0.81, p = .42, or the proportions of European American and non-European American children, $\chi^2(1, 90)$ = 0.01, p = .91.

Measures

Overview. Each child was interviewed individually by a trained female interviewer. The order of presentation of the measures was counterbalanced, with the exception that the gender-typed interests measure (COAT-PM) always appeared before the gender stereotyping measure (COAT-AM). Presenting the COAT-PM before the COAT-AM is recommended by the creators of these measures to reduce the salience of gender stereotypes during the completion of the personal interests measure (Liben & Bigler, 2002). Visual representations of response scales (e.g., smiling and frowning faces) accompanied each measure.

Self-perceived gender typicality. Participants completed a measure of self-perceived gender typicality (see Appendix). The gender typicality scale is part of a larger measure of gender identity that also includes measures of gender satisfaction, satisfaction with gender roles, and perceived pressure to conform to gender roles (full measure can be obtained from the author). The gender typicality scale (10 items; $\alpha = .68$) assessed perceived similarity to same-gender children in various domains (e.g., appearance, activity preferences). Participants were asked to rate the veracity of each statement (e.g., "I like to do the same kinds of things as most girls [boys]") as it applied to them, from *really true* (4) to *really not true* (1). The final score for this scale was the mean of the 10 items.

Gender-typed attributes. Gender-typed interests were assessed with the activity and occupation scales of the COAT-PM (Liben & Bigler, 2002). Participants indicated their personal interest in masculine- and feminine-gender-typed activities (e.g., "how often do you build with tools?") and occupations (e.g., "how much would you want to be a nurse?"). Based on research indicating that gender-typed activity and occupation preferences tend to be related on this measure, but that masculine and feminine interests are not strongly related (Liben & Bigler, 2002), occupation and activity scales were combined, but mean scores were calculated separately for masculine- and feminine-typed interests (masculine $\alpha = .83$, feminine $\alpha = .85$).

Participants were also asked to report how many of their friends at school were of the other gender. Response options ranged from *none or hardly any* (1) to *almost all or all* (4).

Gender stereotype endorsement. Gender stereotype endorsement was assessed with the activity and occupation scales of the COAT-AM (Liben & Bigler, 2002). Participants indicated their beliefs regarding the gender-appropriateness of activities (e.g., "who should fix bicycles?") and occupations (e.g., "who should be a nurse?"). The proportion of items for which the participant gave a gender-stereotyped response (i.e., only boys/men for masculine items and only girls/women for feminine items) was calculated. Thus, possible scores range from 0 to 1, with higher scores indicating more stereotyped attitudes and lower scores indicating more egalitarian attitudes (α = .91). It is important to note that this measure is prescriptive (i.e., assessing children's level of personal agreement with cultural gender stereotypes) rather than descriptive (i.e., assessing children's knowledge of gender correlates).

Results

Preliminary Analyses

A MANOVA with gender (male versus female) as a predictor and age (in months) as a covariate was conducted to examine potential gender and age effects on gender typicality, gender-typed attributes, and gender stereotype endorsement (see Table 1 for means and Table 2 for correlations among measures). Results indicated overall effects of both gender, $F(2,97) = 23.81$, $p < .001$, and age, $F(2,97) = 3.37$, $p = .008$. Boys scored higher than girls in self-perceived gender typicality, $F(1,97) = 18.11$, $p < .001$, and masculine-typed interests, $F(1,97) = 33.32$, $p < .001$. Girls scored higher than boys in feminine-typed interests, $F(1,97) = 32.98$, $p < .001$. There were no gender differences in other-gender friends or gender stereotype endorsement. Masculine-typed interests, $F(1,97) = 6.17$, $p = .015$, and

other-gender friends, $F(1,97) = 8.20$, $p = .005$, decreased with age. There were no age effects on self-perceived gender typicality, feminine-typed interests, or gender stereotype endorsement.

Self-Perceived Gender Typicality and Gender-Typed Attributes

The first research question examined whether same-gender-typed interests, other-gender-typed interests, and other-gender friends were related to children's self-perceived gender typicality (H1 – H3), as well as whether relations between gender-typed attributes and self-perceived gender typicality varied by gender (H4). The prediction was that all three measures of gender-typed attributes would be related to children's self-perceived gender typicality. To examine this question, a hierarchical multiple regression analysis was conducted with gender and age (in months) in the first block, the three gender-typed attribute measures in the second block, and the interactions of gender with each of the three gender-typed attribute measures in the third block. All continuous predictor variables (age, same-gender-typed interests, other-gender-typed interests, and other-gender friends) were converted to z-scores, and these scores were used as predictors and in the calculation of interaction terms. Tests for multicollinearity indicated acceptable levels (all VIFs < 2).

Results indicated a significant ΔR^2 from the first to the second block, indicating that the addition of the gender-typed attribute variables significantly increased the variance accounted for by the model (see Table 3). Results indicated a significant positive effect of same-gender-typed interests; H1 was supported. Results also indicated a significant negative effect of other-gender-typed interests; H2 was supported. Results indicated no significant effect of other-gender friends; H3 was not supported. Children who perceived themselves as more gender-typical had higher levels of interest in same-gender-typed activities and occupations and lower levels of interest in other-gender-typed activities and occupations than children who perceived themselves as less gender-typical.

Results of the multiple regression analysis indicated no significant ΔR^2 from the second to the third block and no significant interaction effects of gender with any of the three gender-typed attribute measures (see Table 3). Fisher r-to-z transformations (Lowry, 2001) were also used to compare boys' and girls' partial correlations among variables (controlling for age). Results indicated no significant gender differences in the strength of the correlations between self-perceived gender typicality and other-gender-typed interests (r_{boys}(53) = -.20, r_{girls}(41) = -.25, z = 0.24, p = .81) or other-gender friends (r_{boys}(53) = -.15, r_{girls}(41) = -.20, z = 0.24, p = .81). Thus, results indicated that the relations between gender-typed attributes and self-perceived gender typicality were the same for boys and girls; H4 was not supported.

Self-perceived gender typicality, gender-typed attributes, and age. Based on older children's greater cognitive flexibility, it was predicted that gender typicality would be more strongly related to gender-typed attributes for younger children than for older children. To examine this question, a hierarchical multiple regression analysis was conducted with gender and age (in months) in the first block, the three gender-typed attribute measures in the second block, and the interactions of age with each of the three gender-typed attribute measures in the third block. All continuous predictor variables (age, same-gender-typed interests, other-gender-typed interests, and other-gender friends) were converted to z-scores, and these scores were used as predictors and in the calculation of interaction terms. Tests for multicollinearity indicated acceptable levels (all VIFs < 2). Results of the multiple regression analysis indicated no significant ΔR^2 from the second to the third block and no significant interaction effects of age with any of the three gender-typed attribute measures (see Table 4). Thus, H5 was not supported. (Analyses were also conducted separately by gender. For both boys and girls, adding the age by gender-typed attribute interaction terms to the models did not result in significantly improved model fit.)

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Self-Perceived Gender Typicality and Gender Stereotype Endorsement

The second research question addressed in this study was the possible relation of self-perceived gender typicality to gender stereotype endorsement. The prediction, based on Liben and Bigler's (2002) dual pathway model, was that self-perceived gender typicality would be positively related to children's gender stereotype endorsement (H6). To examine this question, a hierarchical multiple regression analysis was conducted with gender and age (in months) in the first block, self-perceived gender typicality in the second block, and the interaction of gender and gender typicality in the third block. Continuous predictor variables (age and self-perceived gender typicality) were converted to z-scores, and these scores were used as predictors and in the calculation of interaction terms. Tests for multicollinearity indicated acceptable levels (all VIFs < 2).

Results of the multiple regression analysis indicated a significant ΔR^2 from the first to the second block, indicating that the addition of the self-perceived gender typicality variable significantly increased the variance accounted for by the model (see Table 5). Children who perceived themselves as more gender-typical showed higher gender stereotype endorsement than children who perceived themselves as less gender-typical; H6 was supported. Results indicated no significant ΔR^2 from the second to the third block (see Table 5), indicating no gender by gender typicality interaction. Although the correlation between self-perceived gender typicality and gender stereotype endorsement was slightly stronger for girls than boys, a Fisher r-to-z transformation indicated that the difference in girls' and boys' correlations was not statistically significant (partial correlations controlling for age: $r_{girls}(41) = .56$, $r_{boys}(53) = .34$, $z = -1.36$, $p = .17$); H7 was not supported.

Self-perceived gender typicality, gender stereotype endorsement, and age. To examine whether the relations between self-perceived gender typicality and gender stereotype endorsement

varied by age, a hierarchical multiple regression analysis was conducted with gender and age (in months) in the first block, self-perceived gender typicality in the second block, and the interaction of age with gender typicality in the third block. Continuous predictor variables (age and self-perceived gender typicality) were converted to z-scores, and these scores were used as predictors and in the calculation of interaction terms. Tests for multicollinearity indicated acceptable levels (all VIFs < 2). Results of the multiple regression analysis indicated no significant ΔR^2 from the second to the third block (see Table 6), indicating no age by gender typicality interaction; H8 was not supported. (Analyses were also conducted separately by gender. For both boys and girls, adding the age by self-perceived gender typicality interaction term to the models did not result in significantly improved model fit.)

Discussion

Most extant research on self-perceived gender typicality has examined relations between typicality and psychological adjustment variables, such as self-esteem. The current study attempted to expand current understanding of self-perceived gender typicality by (a) examining the relations among gender-typed attributes, self-perceived gender typicality, and gender stereotype endorsement and (b) examining these relations with participants younger than those generally included in gender typicality research (i.e., elementary-school-aged children).

The first purpose of the current study was to examine the relations between gender-typed attributes and self-perceived gender typicality in order to evaluate the extent to which elementary-school-aged children based their perceptions of their own gender typicality on their gender-typed interests and preferences. Theory suggests that self-perceived gender typicality may be based on a wide range of personal characteristics, including abilities, interests, physical appearance, and personality traits (Egan & Perry, 2001; Spence, 1984). In the current sample, children's gender typicality was related

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

to same- and other-gender-typed interests, but not to other-gender friends, indicating that children do appear to base their judgments of their own gender typicality (at least in part) on their gender-typed attributes. This finding is consistent with previous research (e.g., Egan & Perry, 2001) and suggests that even young elementary-school-aged children can use their knowledge of gender roles to make judgments about the self.

The observed relations between self-perceived gender typicality and gender-typed attributes did not differ by gender, indicating that these relations were equally strong for boys and girls. Boys' self-perceived gender typicality was not, as predicted, more strongly negatively related to other-gender-typed attributes or other-gender friends than girls'. This was somewhat surprising given research indicating boys' greater focus on avoiding feminine-typed behaviors and characteristics (Halim & Ruble, 2010; Powlishta, 2002) and the greater pressure boys face to behave in stereotype-consistent ways (Egan & Perry, 2001; Smith & Leaper, 2006). However, the current study assessed gender-typed attributes only in terms of activity and occupational interests and friendship patterns; research examining other gender-typed attributes, such as personality traits or physical appearance, might find differing patterns for boys and girls.

Predictions regarding age-related changes in the strength of the relation between self-perceived gender typicality and gender-typed attributes were also not supported. This finding indicates that same-gender-typed and other-gender-typed interests have implications for self-perceived gender typicality throughout middle childhood. Despite older elementary-school-aged children's greater flexibility in thinking about gender (Martin et al., 2002; Ruble et al., 2006), these children continued to base their views of themselves as typical boys or girls (at least in part) on their interests in same- and other-gender-typed activities and occupations.

Results also indicated that gender typicality was related to gender stereotype endorsement, with children low in self-perceived gender typicality showing lower gender stereotype endorsement than children high in gender typicality. Egalitarian gender role attitudes (e.g., low gender stereotype endorsement) have been linked to a number of positive outcomes in adolescence and adulthood, including better academic performance (Patterson & Pahlke, 2011), higher educational attainment (Scott, 2004), higher academic motivation (Leaper & Van, 2008), higher marital quality (Amato & Booth, 1995), and lower rates of divorce (Kaufman, 2000). Thus, low gender stereotype endorsement may be a positive variable associated with low self-perceived gender typicality. It is unclear, however, what the direction of causality might be between these variables. One possibility is that children project their views of themselves onto their gender groups, leading to lower gender stereotype endorsement among children who view the self as gender-atypical, as in Liben and Bigler's (2002) personal pathway model of gender development. This view is also consistent with the stereotype construction hypothesis of Tobin et al.'s (2010) gender self-socialization model, which posits that children build their gender stereotypes based on their perceptions of their own gender typicality and gender-typed attributes. An alternate possibility is that children who have less-stereotyped attitudes may feel more comfortable viewing themselves as gender-atypical than children who endorse gender stereotypes more strongly, consistent with Liben and Bigler's (2002) attitudinal pathway model. That is, viewing the self as gender-atypical may be less stressful or threatening to the sense of self (and thus more likely to occur) among individuals with egalitarian gender role attitudes than individuals with more traditional or rigid attitudes. Future research should explore the possible causal mechanisms underlying the observed relation between self-perceived gender typicality and gender stereotype endorsement. The field's understanding of these relations could be strengthened with longitudinal research on the development of these relations over time. Another possible strategy for exploring the relations among these variables is

experimental research in which self-perceived gender typicality is experimentally manipulated. Extant experimental research (e.g., Patterson & Bigler, 2007; Pickett, Bonner, & Coleman, 2002) has found that leading individuals to view themselves as atypical of their groups can influence group-related attitudes, but little experimental research has been conducted on relations between self-perceived typicality and stereotype endorsement.

The current study, like the majority of extant research on gender typicality, was conducted with a predominantly European American U.S. sample (although several recent studies indicate that gender typicality is a meaningful construct in non-U.S. contexts as well; Drury et al., 2009; Menon, 2011; Yu & Xie, 2010). There are a number of reasons to expect that culture will have important influences on gender identity. First, culture may influence children's perceptions of the gender-appropriateness of particular attributes or behaviors. For example, in certain communities soccer may be an activity regarded as primarily or exclusively for boys, whereas in other communities soccer may be viewed as a more gender-neutral activity in which both boys and girls participate. Second, the impact of gender typicality on adjustment may differ based on cultural factors. For example, cultural differences have been observed in children's judgments of the acceptability of cross-gender-typed behavior (Lobel, Gruber, Govrin, & Mashraki-Pedhatzur, 2001), and gender typicality may be more influential when pressure to conform to gender norms is high (Carver et al., 2003; Egan & Perry, 2001; Yunger et al., 2004). In addition, research on students from different ethnic groups within the United States suggests that the impact of gender typicality on adjustment may differ based on race and ethnicity (Corby et al., 2007).

Future research should examine the impact of culture on children's self-perceived gender typicality and on relations among gender typicality, gender-typed attributes, and gender stereotype endorsement. The measure of gender typicality used in the current study may be particularly useful for

cross-cultural research because, unlike many existing measures, it does not include reference to specific gender-typed activities or behaviors (e.g., ballet), which may lack relevance in certain cultures. In addition, future research should examine whether the relations between gender typicality and gender stereotype endorsement found in this study are observed with other samples (including examinations of the possible influence of race and ethnicity).

Future research should also examine further the possibility of changes with development in the relations among gender typicality, gender-typed attributes, and gender stereotype endorsement. Cognitive-developmental theories of gender typing (e.g., Liben & Bigler, 2002; Martin et al., 2002) posit that age-related increases in cognitive flexibility may influence children's perceptions of what is gender-appropriate for the self and others. In addition, research with novel groups indicates that the influence of typicality on attitudes about group membership (e.g., satisfaction) may change with age (Patterson & Bigler, 2007). Although the current study did not find age-related changes in the strength of the observed relations among variables, it is possible that age effects could be found in future research with different age ranges (e.g., comparing middle childhood to early childhood or adolescent participants), or with different categories of gender-typed attributes (e.g., personality traits, appearance).

The current study relied on measures of gender-typed attributes and gender stereotype endorsement based on cultural norms of gender typing. Recently, some gender identity theorists (e.g., Martin, 2000; Tobin et al., 2010) have argued that researchers should also consider the role of individuals' idiosyncratic gender attitudes. Specifically, in their Gender Self-Socialization Model [GSSM], Tobin et al. argue that researchers should "…view gender from the perspective of the individual child. This involves respecting and assessing the unique meaning(s) that each child ascribes to gender (2010, p. 606)." Within the GSSM, Tobin et al. posit reciprocal relations between self-perceived gender typicality, self-perceptions of gender-typed attributes, and personal gender stereotypes, as well as interaction

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

effects on each element of the other two elements. Although the current study was based on a more traditional approach to gender-typing (in terms of both theoretical background and measurement of constructs), future research should explore the whether the observed relations between gender typicality, gender-typed attributes, and gender stereotype endorsement occur when using more individualized assessments of gender typing.

In conclusion, the results of the present study indicate that gender typicality is a measurable and influential construct among elementary-school-aged children, related to both gender-typed attributes and gender stereotype endorsement. Although researchers have generally focused on potential negative outcomes associated with low self-perceived gender typicality, this study indicates that it is also possible for positive outcomes, such as egalitarian gender role attitudes, to be associated with low self-perceived gender typicality. The findings of the present study should spur further research on gender identity and related constructs in middle childhood.

References

Amato, P. R., & Booth, A. (1995). Changes in gender role attitudes and perceived marital quality. *American Sociological Review, 60*, 58-66. doi:10.2307/2096345

Bailey, J. M., Bechtold, K. T., & Berenbaum, S. A. (2002). Who are tomboys and why should we study them? *Archives of Sexual Behavior, 31*, 333-341. doi:10.1023/A:1016272209463

Biernat, M. (1991). Gender stereotypes and the relationship between masculinity and femininity: A developmental analysis. *Journal of Personality and Social Psychology, 61*, 351-365. doi:10.1037/0022-3514.61.3.351

Bos, H., & Sandefort, T. G. M. (2010). Children's gender identity in lesbian and heterosexual two-parent families. *Sex Roles, 62*, 114-126. doi:10.1007/s11199-009-9704-7

Bradley, S. J., & Zucker, K. J. (1997). Gender identity disorder: A review of the past 10 years. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*, 872-880. doi:10.1097/00004583-199707000-00008

Carver, P. R., Yunger, J. L., & Perry, D. G. (2003). Gender identity and adjustment in middle childhood. *Sex Roles, 49*, 95-109. doi:10.1023/A:1024423012063

Corby, B. C., Hodges, E. V. E., & Perry, D. G. (2007). Gender identity and adjustment in Black, Hispanic, and White preadolescents. *Developmental Psychology, 43*, 261-266. doi:10.1037/0012-1649.43.1.261

Drury, K.-M., Bukowski, W. M., Saldarriaga, L. M., & Santo, J. B. (2009, April). *Gender Typicality Across Social Contexts*. Poster presented at the biennial meeting of the Society for Research in Child Development. Denver, CO.

Egan, S. K., & Perry, D. G. (2001). Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology, 37*, 451-463. doi:10.1037/0012-1649.37.4.451

Gelman, S. A., & Taylor, M. G. (2000). Gender essentialism in cognitive development. In P. H. Miller & E. Kofsky Scholnick (Eds.), *Toward a feminist developmental psychology* (pp. 169-190). Florence, KY: Taylor & Frances/Routledge.

Halim, M. L., & Ruble, D. N. (2010). Gender identity and stereotyping in early and middle childhood. In J. C. Christler & D. R. McCreary (Eds.) *Handbook of gender research in psychology* (pp. 495-525). New York: Springer. doi:10.1007/978-1-4419-1465-1_24

Kaufman, G. (2000). Do gender role attitudes matter? Family formation and dissolution among traditional and egalitarian men and women. *Journal of Family Issues, 21*, 128-144. doi: 10.1177/019251300021001006

Kreiger, T. C. (2005, April). *Gender-Atypical Behavior in Young Children and its Relation to Social Adjustment*. Poster presented at the biennial meeting of the Society for Research in Child Development, Atlanta, GA.

Lamb, L., Bigler, R. S., Liben, L. S., & Green, V. A. (2009). Teaching children to confront peers' sexist remarks: Implications for theories of gender development and educational practice. *Sex Roles, 61*, 361-382. doi:10.1007/s11199-009-9634-4

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Leaper, C., & Anderson, K. J. (1997). Gender development and heterosexual romantic relationships during adolescence. *New Directions for Child and Adolescent Development, 78*, 85-103. doi:10.1002/cd.23219977808

Leaper, C., & Bigler, R. S. (2011). Gender. In M. K. Underwood & L. H. Rosen (Eds.) *Social development* (pp. 289-315). New York: Guilford.

Leaper, C., & Brown, C. S. (2008). Perceived experiences with sexism among adolescent girls. *Child Development, 79*, 685-704. doi:10.1111/j.1467-8624.2008.01151.x

Leaper, C., & Van, S. R. (2008). Masculine ideology, covert sexism, and perceived gender typicality in relation to young men's academic motivation and choices in college. *Psychology of Men & Masculinity, 9*, 139-153. doi:10.1037/1524-9220.9.3.139

Lee, E. A. E., & Troop-Gordon, W. (2011). Peer processes and gender role development: Changes in gender atypicality related to negative peer treatment and children's friendships. *Sex Roles, 64,* 90-102. doi: 10.1007/s11199-010-9883-2

Liben, L. S., & Bigler, R. S. (2002). The developmental course of gender differentiation: Conceptualizing, measuring, and evaluating constructs and pathways. *Monographs of the Society for Research in Child Development*, 67 (2, Serial No. 269). doi**:** 10.1111/1540-5834.t01-1-00187

Lobel, T. E., Gruber, R., Govrin, N., & Mashraki-Pedhatzur, S. (2001). Children's gender-related inferences and judgments: A cross-cultural study. *Developmental Psychology, 37*, 839-846. doi:10.1037/0012-1649.37.6.839

Lowry, R. (2001). Significance of the difference between two correlation coefficients. Retrieved from: http://faculty.vassar.edu/lowry/rdiff.html.

Lurye, L. E., Zosuls, K. M., & Ruble, D. N. (2008). Gender identity and adjustment: Understanding the impact of individual and normative differences in sex typing. *New Directions for Child and Adolescent Development, 120*, 31-46. doi:10.1002/cd.214

Maccoby, E. E. (1998). *The two sexes: Growing up apart, coming together.* Cambridge, MA: Harvard University Press.

Martin, C. L. (2000). Cognitive theories of gender development. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 91-122). Mahwah, NJ: Lawrence Erlbaum.

Martin, C. L. & Dinella, L. M. (2012). Congruence between gender stereotypes and activity preference in self-identified tomboys and non-tomboys. *Archives of Sexual Behavior, 41*, 599-610. doi: 10.1007/s10508-011-9786-5

Martin, C. L., Eisenbud, L., & Rose, H. (1995). Children's gender-based reasoning about toys. *Child Development, 66*, 1453-1471. doi:10.2307/1131657

Martin, C. L., & Fabes, R. A. (2001). The stability and consequences of young children's same-sex peer interactions. *Developmental Psychology, 37*, 431-446. doi:10.1037//0012-1649.37.3.431

Martin, C. L., Fabes, R. A., Hanish, L., Leonard, S., & Dinella, L. M. (2011). Experienced and expected similarity to same-gender peers: Moving toward a comprehensive model of gender segregation. *Sex Roles, 65*, 421-434. doi:10.1007/s11199-011-0029-y

Martin, C. L., & Halverson, C. (1981). A schematic processing model of sex typing and stereotyping in children. *Child Development, 52*, 1119-1134. doi:10.2307/1129498

Martin, C. L., Ruble, D. N., & Szkrybalo, J. (2002). Cognitive theories of early gender development. *Psychological Bulletin, 128*, 903-933. doi:10.1037/0033-2909.128.6.903

Martin, C. L., Wood, C. H., & Little, J. K. (1990). The development of gender stereotype components. *Child Development, 61*, 1891-1904. doi:10.2307/1130845

McHale, S. M., Kim, J., Dotterer, A. M., Crouter, A. C., & Booth, A. (2009). The development of gendered interests and personality qualities from middle childhood through adolescence: A biosocial analysis. *Child Development, 80*, 482-495. doi:10.1111/j.1467-8624.2009.01273.x

Menon, M. (2011). Does felt gender compatibility mediate influences of self-perceived gender nonconformity on early adolescents' psychosocial adjustment? *Child Development, 82*, 1152-1162. doi: 10.1111/j.1467-8624.2011.01601.x

Patterson, M. M., & Bigler, R. S. (2007). Effects of physical atypicality on children's social identities and intergroup attitudes. *International Journal of Behavioral Development, 31,* 433-444. doi:10.1177/0165025407081472

Patterson, M. M., & Pahlke, E. (2011). Student characteristics associated with girls' success in a single-sex school. *Sex Roles, 65*, 737-750. doi: 10.1007/s11199-010-9904-1

Perry, D. G., & Bussey, K. (1979). The social learning theory of sex differences: Imitation is alive and well. *Journal of Personality and Social Psychology, 37*, 1699-1712. doi:10.1037/0022-3514.37.10.1699

Pickett, C.L., Bonner, B.L., & Coleman, J.M. (2002). Motivated self-stereotyping: Heightened assimilation and differentiation needs result in increased levels of positive and negative self-stereotyping. *Journal of Personality and Social Psychology, 82*, 543-562. doi:10.1037//0022-3514.82.4.543

Powlishta, K. K. (2002). Commentary: Measures and models of gender differentiation. *Monographs of the Society for Research in Child Development, 67*, 167-178. doi:10.1111/1540-5834.00201

Robbins, J. M., & Krueger, J. I. (2005). Social projection to ingroups and outgroups: A review and meta-analysis. *Personality and Social Psychology Review*, 9, 32-47. doi:10.1207/s15327957pspr0901_3

Ruble, D. N., & Martin, C. L. (2002). Commentary: Conceptualizing, measuring, and evaluating the developmental course of gender differentiation: Compliments, queries, and quandaries. *Monographs of the Society for Research in Child Development, 67*, 148-166. doi: 10.1111/1540-5834.00200

Ruble, D. N., Martin, C. L., & Berenbaum, S. A. (2006). The development of gender-related constructs and content. In W. Damon & R.M. Lerner (Series Eds.) & N. Eisenberg (Volume Ed.) *Handbook of Child Psychology: Vol. 3, Social, Emotional, and Personality Development* (6th ed., pp. 858-932). New York: John Wiley & Sons.

Scott, J. (2004). Family, gender, and educational attainment in Britain: A longitudinal study. *Journal of Comparative Family Studies, 35*, 565-589.

Signorella, M. L., Bigler, R. S., & Liben, L. S. (1993). Developmental differences in children's gender schemata about others: A meta-analytic review. *Developmental Review, 13*, 147-183. doi:10.1006/drev.1993.1007

Signorella, M. L., & Frieze, I. H. (2008). Interrelations of gender schemas in children and adolescents: Attitudes, preferences, and self-perceptions. *Social Behavior and Personality, 36*, 941-954. doi:10.2224/sbp.2008.36.7.941

Smith, T. E. & Leaper, C. (2006). Self-perceived gender typicality and the peer context during adolescence. *Journal of Research on Adolescence, 16*, 91-103. doi:10.1111/j.1532-7795.2006.00123.x

Spence, J. T. (1984). Masculinity, femininity, and gender-related traits: A conceptual analysis and critique of current research. In B. A. Maher & W. B. Maher (Eds.), *Progress in experimental personality research* (Vol. 13, pp. 1-97). New York: Academic Press.

Taylor, M. (1996). The development of children's beliefs about social and biological aspects of gender differences. *Child Development, 67,* 1555-71. doi:10.2307/1131718

Tobin, D. D., Menon, M., Menon, M, Spatta, B. C., Hodges, E. V. E., & Perry, D. G. (2010). The intrapsychics of gender: A model of self-socialization. *Psychological Review, 117*, 601-622. doi: 10.1037/a0018936

Van Den Bergh, B. R. H., & Marcoen, A. (1999). Harter's self-perception profile for children: Factor structure, reliability, and convergent validity in a Dutch-speaking Belgian sample of fourth, fifth, and sixth graders. *Psychologica Belgica, 39*, 29-47.

Van Volkom, M. (2003). The relationship between childhood tomboyism, siblings' activities, and adult gender roles. *Sex Roles, 49*, 609-618. doi:10.1023/B:SERS.0000003131.98867.a1

Yu, L., & Xie, D. (2010). Multidimensional gender identity and psychological adjustment in middle childhood: A study in China. *Sex Roles, 62*, 100-113. doi: 10.1007/s11199-009-9709-2

Yunger, J. L., Carver, P. R., & Perry, D. G. (2004). Does gender identity influence children's psychological well-being? *Developmental Psychology, 40*, 572-582. doi:10.1037/0012-1649.40.4.572

Patterson, Meagan M. (2012) Self-perceived gender typicality, gender-typed attributes, and gender stereotype endorsement in elementary- 33 school-aged children. *Sex Roles*, 67, 422-434. Publisher's official version: http://dx.doi.org/10.1007/s11199-012-0184-9 . Open Access version: http://kuscholarworks.ku.edu/dspace/.

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Zosuls, K. M., Miller, C. F., Ruble, D. N., Martin, C. L., & Fabes, R. A. (2011). Gender development

research in *Sex Roles*: Historical trends and future directions. *Sex Roles, 64,* 826-842. doi

10.1007/s11199-010-9902-3

Zucker, K. J., & Green, R. (1992). Psychogenderual disorders in children and adolescents. *Journal of Child

Psychology and Psychiatry, 33*, 107-151. doi:10.1111/j.1469-7610.1992.tb00860.x

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Appendix: Gender typicality measure

Note. Items given are from the girls' version of the measure. The boys' version is identical except that the word *girl* is replaced with *boy* and the word *boy* is replaced with *girl* in all items. Response options are the same for all items. The gender typicality scale is part of a larger measure of gender identity that also includes measures of gender satisfaction, satisfaction with gender roles, and perceived pressure to conform to gender roles. The full measure can be obtained from the author.

Instructions: Some things are more typical of the groups they belong to than other things—they are better examples of the group. For example, a robin or a pigeon is a more typical bird than a penguin or an ostrich. People also have ideas about what girls and boys are like and who is a typical girl or boy. We want to know how you feel about yourself, and how much you are like most girls or most boys.

1. I like to do the same kinds of things as most girls.

Really true	Sort of true	Sort of not true	Really not true
4	3	2	1

2. I look like most girls.

3. I like to dress the same way as most girls.

4. Sometimes people say that I am acting more like a boy than a girl. (R)

5. I would rather do activities that girls usually like than activities that boys usually like.

6. I talk the same way as most girls.

7. Some things I like to do are things that boys usually like more than girls. (R)

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

8. I like the same school subjects as most girls.

9. I am good at the same things as most girls.

10. I would rather do activities that boys usually like than activities that girls usually like. (R)

Note. (R) reverse-scored item.

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Table 1

Means and Standard Deviations

	Boys	Girls	Combined
	M (SD)	*M* (SD)	*M* (SD)
Self-perceived ***	3.24 (0.40)	2.83 (0.51)	3.06 (0.49)
gender typicality			
Masculine interests ***	2.54 (0.50)	2.01 (0.45)	2.31 (0.54)
Feminine interests ***	1.84 (0.46)	2.41 (0.50)	2.09 (0.56)
Other-gender friends	2.23 (1.08)	2.32 (0.86)	2.27 (0.98)
Gender stereotype	0.42 (0.19)	0.45 (0.22)	0.43 (0.22)
endorsement			

Note. Possible scores on the gender typicality measure range from 1 to 4, with higher scores indicating greater self-perceived typicality. Possible scores for masculine interests, feminine interests, and other-gender friends range from 1 to 4, with higher scores indicating higher levels of interest. Possible scores for gender stereotype endorsement range from 0 to 1, with higher scores indicating more stereotyped responding.

*** gender difference, *p* < .001

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Table 2

Correlations Among Variables

	1	2	3	4	5	6
1 Age (in months)	—	.00	-.41**	-.23†	-.42**	-.27*
2 Self-perceived gender typicality	-.34*	—	.18	-.19	.14	.33*
3 Same-gender-typed interests	-.03	.12	—	.45**	.29*	.30*
4 Other-gender-typed interests	.01	-.23	.27†	—	.33*	-.05
5 Other-gender friends	-.05	-.17	.05	.39**	—	.02
6 Gender stereotype endorsement	.08	.50**	.15	-.48**	-.36*	—

Note. Correlations for boys appear above the diagonal; correlations for girls appear below the diagonal.

† *p* < .10, * *p* < .05, ** *p* < .01

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Table 3

Multiple Regression Analysis Predicting Self-Perceived Gender Typicality from Gender, Gender-Typed

Attributes, and Their Interaction

Predictor	Step 1 $R^2_{adjusted} = .15$ $\Delta R^2 = .17, p < .001$ β	Step 2 $R^2_{adjusted} = .23$ $\Delta R^2 = .10, p = .007$ β	Step 3 $R^2_{adjusted} = .21$ $\Delta R^2 = .001, p = .99$ β
Gender	-.39***	-.31**	-.31**
Age	-.15	-.17†	-.17†
Same-gender-typed interests		.22*	.23†
Other-gender-typed interests		-.25*	-.25†
Other-gender friends		-.14	-.15
Gender x Same-gender interests			-.02
Gender x Other-gender interests			-.01
Gender x Other-gender friends			.03

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 4

Multiple Regression Analysis Predicting Self-Perceived Gender Typicality from Age, Gender-Typed

Attributes, and Their Interaction

Predictor	Step 1 $R^2_{adjusted} = .15$ $\Delta R^2 = .17, p < .001$ β	Step 2 $R^2_{adjusted} = .23$ $\Delta R^2 = .10, p = .007$ β	Step 3 $R^2_{adjusted} = .24$ $\Delta R^2 = .03, p = .31$ β
Gender	-.39***	-.31**	-.30**
Age	-.15	-.17†	-.17†
Same-gender-typed interests		.22*	.26*
Other-gender-typed interests		-.25*	-.24*
Other-gender friends		-.14	-.16
Age x Same-gender interests			-.15
Age x Other-gender interests			.11
Age x Other-gender friends			.04

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 5

Multiple Regression Analysis Predicting Gender Stereotype Endorsement from Gender, Self-Perceived

Gender Typicality, and Their Interaction

	Step 1	Step 2	Step 3
	$R^2_{adjusted} = .001$	$R^2_{adjusted} = .15$	$R^2_{adjusted} = .14$
	$\Delta R^2 = .02, p = .35$	$\Delta R^2 = .16, p < .001$	$\Delta R^2 = .001, p = .78$
Predictor	β	β	β
Gender	.07	.24*	.24*
Age	-.12	-.06	-.05
Self-perceived gender typicality		.43***	.40**
Gender x Self-perceived gender typicality			.04

* $p < .05$, ** $p < .01$, *** $p < .001$

[This document contains the author's accepted manuscript. For the publisher's version, see the link in the header of this document.]

Table 6

Multiple Regression Analysis Predicting Gender Stereotype Endorsement from Age, Self-Perceived

Gender Typicality, and Their Interaction

	Step 1	Step 2	Step 3
	$R^2_{adjusted} = .001$	$R^2_{adjusted} = .15$	$R^2_{adjusted} = .16$
	$\Delta R^2 = .02, p = .35$	$\Delta R^2 = .16, p < .001$	$\Delta R^2 = .02, p = .12$
Predictor	β	β	β
Gender	.07	.24*	.21*
Age	-.12	-.06	-.05
Self-perceived gender typicality		.43***	.43***
Age x Self-perceived gender typicality			-.15

* $p < .05$, ** $p < .01$, *** $p < .001$