

Gender-Role Cognition in Three-Year-Old Boys and Girls

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Although the multidimensionality of gender roles has been well established, few researchers have investigated male and female roles separately. Because of the substantial differences in the ways male and female roles are portrayed in our culture, boys and girls may think and learn about these roles differently. The male role is more clearly defined, more highly valued, and more salient than the female role; thus, children's cognitions about these two roles may be expected to differ. The present study addressed the question of whether there is sex-typical variation in gender labeling, gender-role knowledge, and schematicity. Participants were 120 families; 15% were from minority ethnic groups, and 17% were single-parent families; 25% of the parents had a high school education or less. Results indicated that at 36 months of age, boys were less able to label gender and less knowledgeable about gender roles than were girls. Boys' knew more about male stereotypes than female stereotypes, whereas girls knew considerably more than boys about the female role and as much as boys about the male role. Boys and girls were found to be similar in gender schematicity. Traditionality of parental attitudes regarding child-rearing and maternal employment were not strongly related to children's gender cognition.

Recent reviews of the literature regarding children's understanding and adoption of gender roles have acknowledged the multidimensional nature

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of the construct of gender and the need to examine both cognitive and socialization processes as contributors to gender-role development (Bigler, 1997; Fagot & Leinbach, 1993; Huston, 1983, 1985; Martin, 1993; O'Brien, 1992; Signorella, Bigler, & Liben, 1993). Despite this general agreement on principles, many researchers in the field have continued to study either cognitive or socialization factors independently. Furthermore, research in the area of gender-role acquisition continues to be plagued by definitional and measurement issues that limit generalizability of findings and comparison of results across studies (Huston, 1983; Signorella et al., 1993). Even given these difficulties, developmental researchers remain interested in the topic of gender, largely because of its pervasive influence on social attitudes and behavior and evidence that rigid attitudes about gender unnecessarily limit children's perceptions of the educational and occupational options open to them (Eccles, 1987; Jacobs & Eccles, 1992; Katz, 1985).

Although the idea of gender roles as multidimensional in nature is well accepted, little attention has been paid to the idea that children may be learning the content of male and female gender roles separately, rather than as a single set of associations with gender (Stangor & Ruble, 1987). Certainly, male and female gender roles and stereotypes are portrayed very differently in our culture, and it is likely that these differences influence children's learning of gender roles. Male and female roles differ in clarity, salience, and value. The male role is clear and consistent; it tends to be portrayed similarly within families, at school, in children's books, and in the media (Calvert & Huston, 1987; Dambrot, Reep, & Bell, 1988; Garrett, Ein, & Tremaine, 1977; Ignico, 1990; Tognoli, Pullen, & Lieber, 1994). Furthermore, the male role is associated with positive characteristics, even to young children (Urberg, 1982), who selectively attend to male rather than female models (Citron, Serbin, & Connor, 1979; Slaby & Frey, 1975). Although recently there has been increased emphasis on adult males' nurturing roles, particularly as fathers, young boys are still expected to spend their time in traditional activities, such as sports (Pellett & Harrison, 1992), and to view their life goals in occupational terms. When boys do not meet social expectations for males, there are likely to be negative consequences (Roopnarine, 1984). By contrast, females receive mixed messages. There is no single consistent expectation for how girls should look, what they should wear, how they should behave, or what they should play with (Williams, Goodman, & Green, 1985). In fact, adults often encourage young girls toward the more highly socially valued masculine alternatives to traditional ideas of feminine behavior and occupation choices. Thus, when girls choose masculine clothes or activities, they are much less likely to experience negative consequences than are boys who choose feminine clothes or activities. The female role in our society is broader in many ways than the male

role, but at the same time is lower in status and value. Overall, there is less clarity within our culture regarding the boundaries of what is appropriate for girls and women to be and do than there is regarding the male role.

In this paper, we propose that these differences in the salience, consistency, and social value of the two gender roles will be reflected in early gender-role cognitions of boys and girls. Specifically, because of the clarity and uniformity in portrayal of the male role, its widespread social acceptance, and its prominence in contrast to the lower status and less consistently portrayed female role, we predict that boys will know more about the properties of the male role than they do about the female role, but that girls will be equally familiar with both female and male roles. In addition, we expect boys to be more sex-typed or schematized in their attitudes about gender than girls, beginning as soon as children are reliably able to identify males and females.

A tendency for preschool-age boys to think and behave in more strongly sex-typed ways than girls has been documented repeatedly in the developmental literature. Beginning in the second year of life, boys exhibit stronger preferences for same-gender-typed toys than girls do (Blakemore, LaRue, & Olejnik, 1979; Caldera, Huston, & O'Brien, 1989; Lloyd, Duveen, & Smith, 1988; O'Brien & Huston, 1985). Boys are also more rigid in their stereotypes than girls are, from the preschool years through middle childhood (Edelbrock & Sugawara, 1978; Katz & Ksansnak, 1994; Lobel & Menashri, 1993; Urberg, 1982).

With regard to knowledge about gender roles, we predict that both boys and girls will learn the highly visible and high-status characteristics associated with the male role, whereas only girls will acquire knowledge about female roles. There is evidence in the research literature that girls have more knowledge of gender-role stereotype content than boys and also that they acquire this knowledge earlier (Edelbrock & Sugawara, 1978; Fagot & Leinbach, 1995; Katz & Boswell, 1986; Perry, White, & Perry, 1984), and Kohlberg (1966) speculated that the higher value and "interest" of the male role would result in earlier acquisition of male gender-role knowledge.

The present study examines several different dimensions of gender-role cognition: labeling, knowledge of social stereotypes, and schematicity. Recent research indicates that the ability to label people as male or female is closely tied to the advent of sex-typical preferences for toys and playmates (Fagot & Leinbach, 1993, 1995; Fagot, Leinbach, & Hagan, 1986; Martin & Little, 1990). Thus, labeling appears to be an early indicator of awareness of gender.

A second measure of the cognitive bases of sex typing is knowledge of gender-role stereotypes (Bem, 1981; Liben & Signorella, 1987; Martin &

Halverson, 1981). Most investigators have found that stereotypes are well developed in the preschool years, and thus little variability in stereotype content can be observed by age 4 years (Fagot, Leinbach, & O'Boyle, 1992; Serbin & Sprafkin, 1986; Urberg, 1982; Williams, Bennett, & Best, 1973). Measures of stereotype knowledge have typically included only objects and activities narrowly defined as appropriate for one sex or the other (e.g., Edelbrock & Sugawara, 1978). More recently, efforts have been made to include the broad network of attributes, qualities, and even inanimate characteristics that are associated with being male or female in our culture in order to tap into individual variability in knowledge (Bigler, 1997; Leinbach, Hort, & Fagot, 1997; Martin, 1993; Martin, Wood, & Little, 1990). In the present study, children's knowledge of gender roles is assessed at 36 months, when individual differences in knowledge of these broader associative aspects of gender stereotypes can be expected.

The third measure of gender-role cognition used in this study focuses on cognitive processing of gender-related content as opposed to knowledge (Carter & Levy, 1991; Levy, 1989a; Levy & Carter, 1989). In this approach, the extent to which children use gender as a salient organizing characteristic in processing information, termed gender schematicity, is of interest. In the task developed by Levy and his colleagues, children select their preferred toys from pairs of pictures representing male, female, and neutral stereotypes, and their latency to respond is measured. Those who make rapid choices between toys in different categories but take longer to choose between toys in the same gender category are said to have strong gender schemas. Children who are highly schematized are expected to focus selectively on gender-related information and therefore will be more likely to remember such information. The research evidence to date is consistent with these predictions (Carter & Levy, 1988; Levy & Carter, 1989; Levy, 1989a; Signorella, 1987).

In past research both gender knowledge and schematicity have been related to socialization factors, specifically, the traditionality of parental attitudes toward child rearing (see review by Katz, 1987). More traditional parents are reported to have children who hold stereotyped gender-role attitudes (e.g., Weisner & Wilson-Mitchell, 1990), are early labelers of males and females (Fagot & Leinbach, 1995; Fagot et al., 1992), and are highly gender schematized (Levy, 1989b). Thus, previous research suggests that parental attitudes and beliefs are associated with both children's knowledge about gender stereotypes and the emphasis children place on gender-related information. However, the line of research examining gender knowledge has used different measures from that examining schematicity, and neither has analyzed data separately for boys and girls to determine whether parental attitudes are differentially related to gender cognition for boys

versus girls. Furthermore, few studies have examined both mothers and fathers, despite the fact that some researchers have suggested a stronger role for fathers than mothers in early gender-role development (Biller, 1993; Block, 1976; Bradley & Gobbart, 1989; Levy, 1989b; Siegel, 1987; Weinraub et al., 1984).

The primary goal of the present study was to determine whether there is sex-typical variation in gender labeling, gender-role knowledge, and schematicity. We predicted differences between boys and girls related to the differences in the consistency, desirability, and salience of male and female roles in our culture. The children were studied at 36 months of age, when their concepts of gender are first emerging (Fagot & Leinbach, 1993; Huston, 1983). Our specific predictions were: (1) Girls would demonstrate more knowledge of gender (both labeling of people and content of stereotypes) than boys, (2) boys would show less knowledge of the female than the male role, whereas girls would have equivalent knowledge of male and female roles, and (3) boys would be more strongly schematized than girls.

Finally, we examined the relation between parents' traditional attitudes and individual differences in boys' and girls' gender cognitions. We measured family traditionality in terms of parental attitudes toward child rearing and toward maternal employment, constructs which represent more general parental beliefs than specific measures of gender-role attitudes. Traditional parents in this study are considered to be those who endorse parental role differentiation and authoritarian parenting approaches, and who view maternal employment as presenting risks and not benefits to children. Based on previous findings in the literature, we predicted that parents with more traditional attitudes would have (1) more highly gender schematized children, (2) boys who had more knowledge about their own gender role, (3) girls who had more knowledge about both male and female roles, and (4) children who scored higher on the labeling task. Because fathers as well as mothers participated, we were able to examine the association between each parent's attitudes and their preschoolers' gender-role development, although we made no specific predictions regarding differential relationships of mother and father traditionality for sons versus daughters.

METHOD

Participants

The families who participated in this study were a subset of those taking part in a larger multisite longitudinal study of children's development. For the larger study, families were recruited at the time of their child's birth

using a conditional random sampling plan that ensured the sample would include at least 10% low-income, low-education, and minority families. At this site, 134 families were initially enrolled in the study. At 36 months, 120 families participated in a lab visit, after which the gender labeling, gender knowledge, and schematicity measures were collected. The length of the previous lab session meant that child fatigue and parental schedules prevented all children from completing all measures. The numbers of children on whom data are available are as follows: gender labeling, 45 boys and 47 girls; gender knowledge, 42 boys and 45 girls; and gender schematicity, 44 boys and 38 girls. Of the families who participated at 36 months, 120 of the mothers and 83 of the fathers had completed the questionnaire measures used in the study. Each analysis included all participants for whom data were available. Overall, the sample included 15% minority families and 17% single-parent families, and 25% of the mothers and fathers had a high school education or less. Family characteristics of those who completed all measures were not significantly different from those of the original sample, nor were there differences in demographic characteristics associated with child gender.

Procedures

Demographic information on participating families was collected from parent report during a home visit approximately 1 month after the birth of the child. During this same visit, all mothers, and those fathers who were willing to participate, completed questionnaires regarding their attitudes toward child rearing and toward maternal employment.

At 6, 15, 24, and 36 months, children and families were visited at home and beginning at 15 months, families also completed a laboratory visit. At these times, demographic information was updated and additional questionnaire measures were collected. At the end of the 36-month lab visit, the children were administered a gender labeling task, a measure of gender stereotype knowledge, and a gender schematicity task.

Measures

Gender Labeling

Children's ability to label pictured people as male or female was assessed using a labeling task based on the task described by Leinbach and Fagot (1986). Children were asked to verbally label the gender of six

pictured children and six pictured adults, half of whom were male and half female. The gender of the people in the pictures was readily identifiable from appearance and dress. Each picture was presented individually, pictures of children first, and children were asked, "What is this a picture of?" Total scores for labeling were calculated based on the number of pictures children labeled correctly. Leinbach and Fagot (1986) reported high test-retest reliability on this measure over 2 weeks and a clear increase with child age from 17 to 40 months in ability to label the gender of pictured people.

Knowledge of Gender Stereotypes

Children's knowledge about male and female social stereotypes was measured using a simplified version of the Gender Stereotyping Test used by Leinbach et al. (1997) with older children. For the present study, color pictures were substituted for the black-and-white pictures used by Leinbach et al. (1997), and items were organized into sets so that the most concrete objects associated with male and female stereotypes (e.g., bat and ball, needle and thread) were presented first, followed by items that are metaphorically associated with gender (e.g., a bear, the color pink). Each set included six pictures of common objects, three associated with male and three with female stereotypes. The original measure for children 4 to 7 years included a total of 48 items. Initial efforts to administer all 48 items to the 3-year-olds in the present study indicated high rates of fatigue and failure after about half the pictures were presented. Therefore, only 24 of the items (four sets of six) were administered to all children, and the scores used in the present report are based only on these 24 items. Each picture was presented individually, and children were asked to name the item and then whether it was "more for boys" or "more for girls." When children categorized an object as "for both boys and girls," the tester asked a second time. The child's response to this second probe was recorded. Total male and total female scores (possible range 0-12) were calculated for each child as the sum of "correct" answers (i.e., responses that met social stereotypes), excluding responses of "both." Leinbach et al. (1997) found children's identification of items as associated with males or females to increase with age from 4 to 7 years, and ability to make metaphorical connections to be correlated with level of gender identity.

Gender Schematicity

Children's gender schematicity was measured using the task developed by Carter and Levy (1988). In this task, children are presented

with a pair of pictured toys and asked to point to and touch their favorite of the two toys as quickly as they can; their latency to respond to each pair of pictures is recorded. The pictures were black-and-white line drawings of feminine (toy mixer, jewelry, and Raggedy Ann doll), masculine (jet airplane, gun, truck), and neutral (telephone, playing cards, checkers) toys. Following Levy (1989a), pictures of these nine toys were presented to children in 24 different pairs: 9 masculine–feminine, 4 masculine–neutral, 3 feminine–neutral, 2 masculine–masculine, 3 feminine–feminine, and 3 neutral–neutral choices. The left–right position of the masculine, feminine, and neutral toys was counterbalanced across trials. At the beginning of the task, children were trained to point to and touch their preferred toy quickly using pictures of objects unrelated to the gender-typed stimuli. Children were videotaped during this task, and their latency to respond to each pair of toys was later coded from the videotapes. Reliability of coding was assessed by having a second coder record response times for 25% of the tapes. Pearson correlations between the latencies recorded by the two coders averaged .98.

As described by Carter and Levy (1988), children's reaction time to each item pair was standardized by subtracting the child's overall mean latency to respond and then dividing by the standard deviation of the child's reaction times across all pairs, yielding a score ranging between -1 and $+1$. Two scores were calculated from these standardized scores. The *facilitated* score, considered to be the extent to which a child's gender schema facilitates choices between clearly sex-typed items, was calculated as the mean of the child's reaction times to masculine–feminine toy pairs. In the original studies, a low *facilitated* score indicates that the child reacted quickly to these choices and therefore that the child has a strong gender schema. For ease of interpretation of the present results, the facilitated scores were reversed so that higher scores represent stronger gender schemas. The *inhibited* score, or the extent to which a child's gender schema inhibits or interferes with making a choice between two toys, was calculated as the mean of the child's reaction times to same-category toy pairs. A high *inhibited* score indicates that these choices were difficult for the child and suggests a strong gender schema. These two scores were significantly correlated ($r = .47$ for boys, $.50$ for girls, $p = .001$). In previous research with slightly older children, children's degree of schematicity on the toy choice task has been found to be related to their accuracy and persistence of memory for gender-related information on a variety of tasks and to preferences for same-gender-typed toys (Carter & Levy, 1988; Levy & Carter, 1989; Levy, 1989a).

Traditionality of Parent Attitudes

Traditional versus progressive attitudes of parents were measured in two ways. Mothers' and fathers' *attitudes toward child rearing* were measured when the child was 1 month old using the Parental Modernity Inventory (Schaefer & Edgerton, 1985), which assesses the traditionality of parents' attitudes about raising children. This 30-item questionnaire asks respondents to indicate the extent to which they agree or disagree with such attitudinal statements as, "The most important thing to teach children is absolute obedience to whoever is in authority," using a 5-point Likert-type scale. A total score is calculated, ranging from 30 to 150, with low scores representing more progressive attitudes and high scores representing traditional attitudes. Cronbach's alpha for the present sample of mothers was .88 and for fathers .87. Mothers' and fathers' *attitudes toward maternal employment* were measured at 1 month using a modified version of the scale developed by Greenberger, Goldberg, Crawford, and Granger (1988). This scale includes five items concerning the possible *benefits of maternal employment* to children (e.g., "Children whose mothers work are more independent and able to do things for themselves") and six items concerning possible *risks* (e.g., "Young children learn more if their mothers stay at home with them."). Each item is scored on a 6-point scale, ranging from strongly disagree to strongly agree. High scores represent high benefits (range 5–30) and high risks (range 6–36). Greenberger et al. (1988) reported beliefs about benefits and risks to be related to other measures of attitudes regarding mothers' employment, and scores on the risks of employment scale to be positively correlated with a measure of traditionalism in gender-role attitudes. In the present sample, Cronbach's alpha on the benefits scale was .79 for mothers, .70 for fathers, and on the risks scale, .87 for mothers, .91 for fathers.

Analyses

Gender differences in children's cognitive scores were analyzed using an independent-samples *t* test for labeling, and child gender (2) \times gender of stimulus or latency score (2) repeated-measures ANOVAs for knowledge and schematization. Gender differences in parental attitudinal measures were analyzed using parent gender (2) \times child gender (2) repeated-measures ANOVAs. All significant interactions were analyzed with tests of the simple main effects. Relations between parental attitudes and child scores were examined using a multiple regression approach, considering mothers and fathers separately.

RESULTS

Preliminary multiple regression analyses were used to examine the potential relation of family demographics (ethnicity, maternal education, and family income) to boys' and girls' scores on each of the gender-role measures: labeling, knowledge of masculine and feminine stereotypes, and gender schematicity. The analyses indicated no significant association between demographics and children's gender cognition. Thus, demographic factors were excluded from further analyses.

Sex Differences in Gender-Role Measures

Gender Labeling

Mean scores for boys and girls on the gender labeling task are shown in Table I. An independent-samples *t* test for unequal variances analyzing boys' and girls' ability to label pictures of males and females yielded a significant effect for child gender, $t(66.32) = 2.12, p < .05$, indicating that girls labeled more pictures correctly than boys did.

Knowledge of Gender Stereotypes

The mean total female, total male, and overall scores on the modified Gender Stereotyping Test for boys and girls are shown in Table I. A child gender (2) \times gender stereotype of picture (2) repeated-measures ANOVA indicated a significant interaction effect, $F(1,85) = 42.84, p < .001$. Analysis of the simple effect of gender stereotype of picture showed that girls performed significantly better than boys on the female-stereotyped items, $F(1,$

Table I. Means (and Standard Deviations) for Measures of Sex-Role Stereotyping

	Boys	Girls
Gender labeling	10.80 (1.88)	11.47 (1.00)
Knowledge of gender stereotypes		
Total female score	4.45 (2.99)	7.49 (3.28)
Total male score	6.29 (3.60)	5.18 (3.22)
Total gender knowledge score	10.74 (6.08)	12.67 (5.90)
Gender schematicity		
Facilitated score	.08 (.25)	.01 (.23)
Inhibited score	.10 (.31)	.06 (.31)

85) = 18.18, $p < .001$, but there was not a significant difference between boys and girls in their ability to categorize male-stereotyped items, $F(1, 85) = 1.41$, ns.

Gender Schematicity

The mean *facilitated* and *inhibited* scores from the gender schematicity task for boys and girls are shown in Table I. A child gender (2) \times schema score (2) repeated-measures ANOVA indicated no significant main effect of child gender or schematicity, and no significant interaction, indicating that boys and girls performed similarly on the schematicity measure.

Sex Differences in the Traditionality of Parental Attitudes

Mean scores for mothers and fathers on the measures of traditional attitudes toward child rearing and attitudes toward maternal employment are shown in Table II. Differences between parents within the same families were analyzed using separate parent gender (2) \times child gender (2) repeated-measures ANOVAs. No parent or child gender effects were found for the measure of traditional attitudes toward child rearing. There was a significant parent gender \times child gender interaction for benefits of maternal employment, $F(1,81) = 4.61$, $p = .035$. Follow-up analyses indicated that fathers of boys considered maternal employment to have more benefits than did mothers of boys, $F(1,82) = 8.24$, $p = .005$, but there was no difference between mothers and fathers of daughters. For the measure of risks of maternal employment, there were significant main effects for both parent gender, $F(1,81) = 8.29$, $p = .005$, and child gender, $F(1,81) = 12.26$, $p = .001$, but no interaction. Overall, fathers considered the risks of maternal

Table II. Means (and Standard Deviations) on Family Attitudinal Factors

	Parents of boys	Parents of girls
Traditional attitudes toward child rearing		
Mothers	73.34 (18.62)	72.59 (14.34)
Fathers	75.14 (15.84)	73.13 (16.23)
Attitudes toward maternal employment		
Benefits of work		
Mothers	18.43 (2.86)	19.33 (2.91)
Fathers	19.75 (3.29)	19.21 (2.05)
Risks of work		
Mothers	19.91 (5.49)	15.28 (4.32)
Fathers	20.68 (6.55)	18.23 (5.06)

employment to be greater than did mothers (fathers' $M = 19.53$, $SD = 5.99$; mothers' $M = 17.74$, $SD = 5.46$), and parents of boys found the risks greater than did parents of girls (boys' parents' $M = 20.30$, $SD = 6.02$; girls' parents' $M = 16.76$, $SD = 4.69$).

Traditionality of Family Attitudes and Children's Gender-Role Acquisition

We also examined the relation between parental attitudes about child rearing and children's gender-role cognitions. Multiple regression analyses were used in these analyses. It has often been suggested that fathers exert significant influence on children's gender-role development; therefore, we examined the role of fathers' and mothers' traditional attitudes separately. For each dependent variable (labeling, knowledge of male stereotypes, knowledge of female stereotypes, facilitated score, and inhibited score), a block of three parental attitudinal variables (attitudes toward child rearing, risks of employment, and benefits of employment) was entered after controlling for child gender. Because we were interested in the role that child gender may play in the association between parental attitudes and gender-role acquisition, a block of variables representing the interaction between child gender and each attitudinal variable was also entered into each regression analysis after the block of attitudinal variables.

Mothers' attitudes accounted for a significant portion of the variance in only two of the five analyses, and fathers' not at all. After accounting for child gender, mothers' attitudes were significantly associated with children's gender labeling, $R^2\Delta = .12$, $F\Delta(3,87) = 4.09$, $p = .009$. Univariate analyses indicated that mothers with more traditional views toward child rearing had children who labeled fewer pictured people correctly. Mothers' attitudes were also significantly associated with the inhibited score from the gender schematicity task, $R^2\Delta = .12$, $F\Delta(3,77) = 3.31$, $p = .024$. The regression results for the inhibited score are shown in Table III. Univariate analyses indicated that mothers with lower scores on the benefits of maternal employment scale had children who were more schematized, measured by the inhibited score. Neither mothers' nor fathers' attitudes were associated with children's knowledge of gender stereotypes.

The only regression equation in which the interaction block was significant was that for the inhibited score from the gender schematicity task, and only for fathers, $R^2\Delta = .17$, $F\Delta(3,43) = 3.04$, $p = .039$. Univariate results indicated that child gender interacted significantly with fathers' attitudes toward both benefits and risks of maternal employment. In order to explore these findings further, the sample was divided into three groups

Table III. Hierarchical Multiple Regression Analyses of Gender Schematization Inhibited Score

	Mothers		Fathers	
	$R^2\Delta$	Beta	$R^2\Delta$	Beta
Child gender	.00	.06	.01	-.07
Parental attitudes	.12*		.06	
Attitudes toward child rearing		-.20 ⁺		-.26
Benefits of maternal employment		-.25*		-.05
Risks of maternal employment		.04		.13
Interaction	.07		.17*	
Child gender \times Attitudes toward child rearing		-.23		.08
Child gender \times Benefits of maternal employment		1.87*		-.70*
Child gender \times Risks of maternal employment		1.15*		-.79**

Note. $R^2 = .19$, $F(7,74) = 2.41$, $p = .028$ ($N = 82$) for mothers; $R^2 = .23$, $F(7,43) = 1.81$, $p = .110$ ($N = 51$) for fathers. Standardized betas reflect value at point of entry. Gender coded as 0 = girls; 1 = boys.

⁺ $p < .10$; * $p < .05$; ** $p < .01$.

based on fathers' scores on these measures, and children's inhibited scores were graphed (see Fig. 1). As Fig. 1 shows, in both cases, the interaction effects are found in the groups of children whose fathers believe strongly that maternal employment has either benefits or risks to children. Both fathers who report maternal employment as highly beneficial and those who believe it to be risky for children have girls who are more schematized, based on the inhibited score, than boys.

DISCUSSION

The results of this study lend support to the idea that differences in male and female gender roles in our culture contribute to differential acquisition of each of these roles for boys and girls. At 36 months, boys in this sample were less able to label pictures of males and females and less knowledgeable about the female role than girls. Girls and boys had equivalent knowledge about the male role. These results support the predictions of this study and are consistent with the idea that all children learn the content of the culturally salient and consistently portrayed male role quite early in life. Because boys are encouraged to make male-sex-typed choices, they may tend not to explore aspects of the feminine gender role. Girls, on the other hand, may be more likely to explore and investigate properties of both female and male roles in order to resolve inconsistencies in social messages regarding femininity.

Contrary to our initial predictions, boys' and girls' degree of schema-

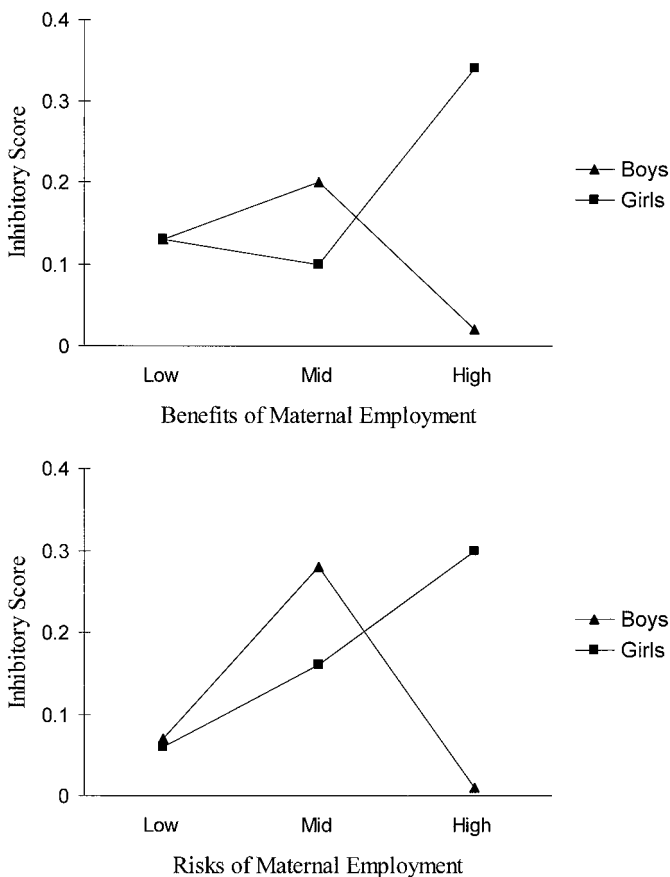


Fig. 1. Boys' and girls' inhibitory scores on the gender schematization task by fathers' reports of the benefits of maternal employment (top graph) and risks of maternal employment (bottom graph).

ticity was equivalent as measured by their latency to respond in the picture choice task. In previous research, this task has been used with slightly older children, and perhaps it was not as sensitive to individual differences at this age. However, the children in this study appeared to understand the task and participated readily in making choices. If in fact male and female roles are learned as separate constructs, perhaps it would be more informative to examine schematicity for male stimuli and female stimuli separately for boys and girls.

It is not clear why parental attitudes were associated with the inhibited score, but not the facilitated score from the schematicity measure. As would

be expected, the two scores were significantly intercorrelated for both boys and girls, yet they showed different patterns of association with parental attitudes. The facilitated score is calculated based on choices between masculine and feminine toys, whereas the inhibited score is calculated based on choices of paired masculine toys and paired feminine toys. Perhaps these two different types of choices have different psychological meaning to boys and girls. Results of a series of investigations examining the correlates of the facilitated and inhibited scores conducted by Levy and Carter (Carter & Levy, 1988, 1991; Levy, 1989a, b; Levy & Carter, 1989) indicate inconsistencies in associations with these two measures as well. For example, Levy (1989b) reports that for boys, the facilitated score, but not the inhibited score, was related to the amount of interaction with fathers and the number of siblings; for girls in the same study, the inhibited score, but not the facilitated score, was related to amount of interaction with both parents, lower parental education, and maternal work status. Further examination of the properties of these two scores and their association with other measures of sex typing is clearly warranted.

In general, the mothers and fathers of these young children were similar to one another in their attitudes about child rearing. When asked about the benefits and risks of maternal employment, however, there were some significant differences. Fathers of boys saw maternal employment as more beneficial than did mothers of boys. In considering the potential risks of maternal employment, parents of boys indicated more concern than did parents of girls. Furthermore, fathers viewed maternal employment as riskier for children than did mothers. These results are not surprising in that fully 97% of the mothers in this sample were employed at least part-time.

For the families participating in the present study, parental attitudes were not strongly related to children's gender cognition. The lack of association was particularly striking for fathers. Earlier reports have emphasized an important role for fathers in gender-role development (Biller, 1993; Fagot & Leinbach, 1989; Levy, 1989b; Siegel, 1987; Weinraub et al., 1984). The fathers who participated in the present study tended to be relatively involved with their families, and their attitudes toward maternal employment and toward parenthood were similar in most respects to those of the mothers. Nevertheless, fathers' attitudes were not directly associated with any aspect of children's gender cognition. The interaction between child sex and fathers' attitudes about maternal employment suggests that the ways in which fathers' beliefs about female roles are communicated to children may be quite complex. Further research on the role of fathers in all aspects of children's development

is clearly needed, especially as fathers in our society take more active roles in child rearing.

Perhaps early cognition about gender is influenced more by the overall representations of gender in society, rather than the more subtle variations occurring within individual families. The children in this study were in a phase of early acquisition of information about gender roles. Their developing schemas for male roles and female roles may ultimately be influenced by the attitudes and behaviors of their parents, but at the early stages, children may be acquiring information that is most salient in their environments. To the extent that boys and girls are exposed to different contexts, they would be expected to acquire different information (Huston, 1985; Levy, 1994; Serbin & Connor, 1979). But the salience, consistency, and importance placed on the male role in society will be experienced similarly by boys and girls, who therefore learn properties of the male role similarly. The results of the present study suggest that differences between boys and girls may emerge first in their knowledge about female roles; individual within-gender differences may become more evident later in the preschool years.

Although the results of the present study suggest there are differences in the gender cognitions of 3-year-old boys and girls, a number of factors limit the conclusions that can be drawn from these findings. First, the sample size is relatively small, and the nature of the analyses required to separate boys and girls and examine their acquisition of male and female stereotypes demands greater numbers. In addition, the gender schematicity task used was not intended to examine differences between categories of toys, as the calculation of the indices of schematicity do not separate choices involving male-sex-typed toys from those involving female-sex-typed toys. The task therefore does not clearly identify same-gender schematicity, which may differ for boys and girls.

The suggestion by Stangor and Ruble (1987) that children acquire two different gender-related schemas, one for male roles and one for female roles, has not previously been widely acknowledged or investigated. The results of the present study support the idea that there are differences in learning about male and female stereotypes for boys and girls. Given that male and female roles are portrayed very differently in our culture, even in the year 2000, it would be expected that these different portrayals would send different messages to and demand different responses from young boys and girls. Thus, in addition to recognizing the multidimensionality of gender, researchers studying gender-role cognition and sex-typed behavior should pay increased attention to the content and social significance of the roles being learned and examine all aspects of gender cognition and socialization separately for boys and girls.

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