

## **A Multicomponent, Developmental Analysis of Sex Typing<sup>1</sup>**

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*A study of the sex-typed self-descriptions of subjects from five grade/age levels (kindergarten through early college) addressed whether (a) levels of sex typing change developmentally, and (b) the attributes on which individuals are most strongly sex typed change with age. Subjects were asked to rate themselves on 24 sex-relevant attributes, including personality traits, physical characteristics, roles or behaviors, and occupations. Overall levels of sex typing did not change developmentally, but the attributes on which subjects were most strongly sex typed were influenced by age: kindergartners, 3rd graders, 7th graders, and college students showed strongest evidence of sex typing on physical attributes, while 10th graders did so on behaviors. Males in general were most likely to distinguish themselves physically from females, while female distinguished themselves behaviorally from males. Findings are discussed in regard to a componential model of the gender concept.*

Recent research by Deaux and Lewis (1983, 1984) suggests that gender stereotypes are made of component parts, including characterizations about personality, physical traits, roles, occupations, and sex role orientation, and that these components, while relatively independent, do "implicate each other in systematic ways" (p. 1002). This "componential" model recommends taking

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a multidimensional view of the gender concept, rather than the unitary perspective implicit in most research on sex typing and gender stereotypes.

If one's understanding of gender, and particularly one's *own* gender identity, includes the various components described above, an important question concerns the sorts of attributes that are most significant for the sex typing of individuals. When we say an individual is strongly sex typed, do we mean that this person looks like a female/male should look? That (s)he behaves in ways or possesses the personality characteristics appropriate for her/his sex? Unfortunately, answers to these questions are usually bound by methodology. For example, sex-typing inventories used among adults [e.g., the Bem Sex Role Inventory (BSRI), Bem, 1974; and the Personal Attributes Questionnaire (PAQ), Spence, Helmreich, & Stapp, 1974, 1975] primarily include *personality traits*, and the most common methods for measuring sex role preferences in children [the It Scale for Children (ITSC), Brown, 1956; and the Sex Role Learning Index (SERLI), Edelbrock & Sugawara, 1978] focus on *activities*. To understand the attributes on which masculinity and femininity are most strongly based, subjects of different ages must be asked to describe themselves on a number of gender-relevant dimensions.

The present study examines the sex typing of females and males from five different grade/age levels: kindergarten, 3rd grade, 7th grade, 10th grade, and early college. Two questions guide this research: (1) Are there overall developmental differences in the extent to which sex-typing occurs? (2) Do the attributes on which subjects are most strongly sex typed change with age?

### *The Development of Knowledge About Gender*

Since gender is probably one of the most obvious ways in which people differ, it may be one of the first judgment categories children acquire (Kohlberg, 1966; Kohlberg & Ullian, 1974). Around ages 2-3, most children learn to label themselves as boys or girls, and can classify themselves with others of the same sex (Slaby & Frey, 1975; Thompson, 1975). After acquiring this awareness of own sex (gender identity) and preliminary categorization capacity, a child is likely to attend to gender-related information, and be motivated to master the appropriate gender role. Gender constancy—the understanding that one will *always* be a boy or girl, regardless of changes in behavior or dress—seems to develop monotonically from ages 2-9, will most children achieving this knowledge by age seven (Stangor & Ruble, 1987).

Along with gender identity comes knowledge of what boys and girls are like, and what constitutes appropriate sex-typed behavior (Fagot, Leinbach, & Hagan, 1986; Kuhn, Nash, & Brucken, 1977; Weinraub, Clemens, Sockloff, Ethridge, Gracely, & Myers, 1984). Children attain this informa-

tion about male and female sex roles through observation of the association of physical attributes, traits, activities, etc., with the female and male gender categories (Mussen, 1969), and they learn to express their appropriate sex roles through modeling (Bandura, 1968), identification (Sears, 1970), and imitation (Bandura, Ross, & Ross, 1963). Eventually a rich associative network (i.e., a "gender schema") is established that corresponds to the sex role norms of the culture. By age 3, for example, most American children know traditional sex stereotypes relating to toys, clothing, tools, household objects, games, and work (see Huston, 1983). Since studies using 24- to 36-month old children have produced inconsistent findings regarding gender stereotype knowledge, Huston (1983) suggests that this age period may mark the time during which such knowledge is initially acquired.

Children's personal behavioral choices and preferences seem to parallel their knowledge of gender stereotypes. For example, sex-typed toy preferences are apparent by age 3 (Connor & Serbin, 1977; Maccoby & Jacklin, 1974), and by ages 4 and 5, children have stereotyped occupational goals (Huston, 1983). There is also clear evidence that preschool children process information according to a "gender" dimension (Cordua, McGraw, & Drabman, 1979; Kail & Levine, 1976; Martin & Halverson, 1981, 1983; Serbin & Sprafkin, 1986), and that knowledge of gender stereotypes increases into adolescence (see Ruble & Ruble, 1980, and Signorella & Liben, 1985, for reviews).

A number of studies also indicate that patterns of sex-typed preferences may differ for boys and girls. For example, research using Brown's (1956) ITSC has indicated that by age 3, boys show a dominant preference for the masculine role, while girls show less preference for the feminine role and more variability in their choices (see Edelbrock & Sugawara, 1978). In general, preschool boys seem to be more sex typed than preschool girls (Gold & Berger, 1978; Stein, Pohly, & Mueller, 1971). Furthermore, boys' preference for the masculine role tends to increase with age, while girls' preference for the feminine role peaks at age 4, then stabilizes or incorporates more masculine preferences into adolescence (Brown, 1957; Hartup & Zook, 1960; Marantz & Mansfield, 1977; Marcus & Overton, 1978; Nadelman, 1974; Thompson & McCandless, 1970). These patterns could be due to the higher societal value placed on the masculine as opposed to the feminine role (Eagly & Steffen, 1984; Seidenberg, 1973) or to the greater flexibility typically allowed of females vs. males: it is generally less accepted (by parents as well as by children) for boys to exhibit femininity than it is for girls to exhibit masculinity (Carter & McCloskey, 1983-1984; O'Leary & Donoghue, 1978). For example, boys who engage in feminine behaviors are rated as less popular by their peers than girls who engage in masculine behaviors (Berndt & Heller, 1986; Huston, 1983).

*Multiple Meanings of Gender*

As mentioned previously, Deaux and her colleagues (Deaux & Lewis, 1983, 1984) have suggested that under the umbrella of the “gender stereotype” concept are a variety of component attributes, including personality traits, physical characteristics, roles, occupations, and sex role orientations. These components are, in general, modestly related to each other, but some seem to be more influential than others. For example, in their correlational social judgment data from college-aged subjects, Deaux and Lewis (1984) found that knowledge about the *physical* attributes of a target strongly implicated other stereotype components, while knowledge about *personality* traits did so to a much weaker degree. In other words, people believe that knowing a person’s physical fit to traditional gender standards may tell one more about that person than knowing his or her personality fit to those standards.

This is so, perhaps, because of the greater perceived overlap in the distribution of male and female personality traits than in the comparable distributions for male and female physical characteristics (see Deaux & Kite, 1985). That is, some components of gender—personality traits, behaviors, and other *ascribed* characteristics—may be more strongly associated with one sex than the other, but nonetheless show substantial amounts of overlap between the sexes. The personality trait “assertive,” for example, is culturally more descriptive of men than women, although one accepts and is not surprised by the presence of an assertive woman. On the other hand, some attributes of gender—chromosomes and genitalia—*define* and absolutely distinguish between female and male. Between these two extremes lie *identifying* characteristics—visible physical features—which are readily apparent on first meeting an individual. Muscularity and short hair length, for example, more clearly indicate masculinity than does the personality trait assertiveness, and thus such physical characterization might be expected to have a strong influence on subsequent processing about a person (McArthur, 1982). Surprisingly, however, very few studies of sex typing and sex stereotypes have considered physical description as a primary component of gender beliefs. Furthermore, very little theoretical or empirical work has focused on the issue of the changing meanings of one’s masculinity and femininity (Ullian’s work, described below, is an exception). To remedy this, the research reported here explores a variety of aspects of gender beliefs, including physical characterizations, and examines their importance in the sex typing of different age groups.

We expect, for example, that sex-typed physical descriptions may be particularly important to a young child’s sense of self as a girl or boy (particularly to those who do not yet understand gender constancy), but that other gender-relevant characteristics may become increasingly important with age. Ullian (1976) has proposed a developmental model suggesting that sex typ-

ing may have different meanings at different ages. She argues that “concepts of masculinity and femininity undergo significant changes as a result of cognitive and social development” (p. 31). At Level I of her model (around age 6), male–female differences are primarily viewed as the result of biology; salient features on which sex role judgments are based include “size, strength, length of hair, and voice characteristics” (p. 33). Children at this level view conformity to sex differences as necessary in order to maintain and express one’s gender. This stage is characterized by rather rigid adherence to traditional sex role standards.

At level II (around age 8), children move away from the belief that male–female differences are based on biology alone. Because they have attained gender constancy, these children are more flexible than the younger group, and act based on personal choice rather than strict adherence to sex role norms. Level III (age 10) is a period of sex role rigidity, in which children understand the larger social system that distinguishes between female and male roles. This is followed by a period of flexibility (age 12), characterized by an awareness that the system of social roles is arbitrary and variable; and once again, a stage of rigidity (ages 14–16), marked by a strong insistence that people conform to cultural norms as a means of maintaining identity, self-esteem, and successful heterosexual relationships. At Level VI (age 18), individuals are sex typed as a result of years of socialization, but are flexible in that they have incorporated principles of equality and freedom into their gender beliefs.

If the concepts “feminine” and “masculine” are based on changing beliefs about the nature of the social world, we should find that females and males of different ages are sex typed in slightly different ways. The Ullian (1976) model suggests that physical description should be particularly important to young children; social roles should most distinguish the sexes around ages 10 and 14. This model does not predict a simple age effect on degree of sex typing, since all individuals are products of a culture that emphasizes differentiation between the sexes, and because developmental periods of rigidity in sex roles are followed by periods of flexibility. Deaux’s multicomponent model of gender, which has thus far been applied only to adults, seems quite useful for exploring questions of developmental change in sex typing. The model provides a framework and a methodology for investigating how children’s understanding of themselves as male or female unfolds.

## METHOD

### *Overview*

In the context of a larger study on social judgment, subjects from five different age/grade levels—kindergarten, 3rd grade, 7th grade, 10th grade,

and college—were asked to indicate the extent to which a series of sex-typed attributes described themselves. Subjects were told the study concerned how they “think about other people and themselves,” and no mention was made of the concepts of masculinity and femininity. The two younger age groups were interviewed by female researchers in one-on-one face-to-face sessions, and the older groups completed questionnaires containing comparable material. The older groups also completed the PAQ (Spence et al., 1974, 1975), a commonly used measure of psychological masculinity and femininity. Demographic data was collected from the parents of the younger children, and from the 10th-grade and college students themselves.

### *Subjects*

Five separate samples of subjects (total  $n = 491$ ) were recruited and questioned in the following ways:

*College Sample.* Eighty-nine subjects (45 females, 44 males, mean sample age = 19.9 years) at the University of Michigan participated in the study in return for course credit. Subjects were simply asked to report for a half-hour testing session, during which they completed questionnaires, working at their own pace.

*Tenth-Grade Sample.* Subjects were recruited by teachers from two different high schools—one in a northern suburb of Detroit ( $n = 12$ ), the other in a rural town in central Michigan ( $n = 46$ ). In the former group, teachers distributed questionnaires during a specified class period, and students worked independently, with the teacher available to answer clarification questions. At the other school, two experimenters (one female, one male) administered questionnaires during a single session held in the school auditorium. Students were given a brief explanatory introduction to the survey, then worked at their own pace, again with the experimenters available to answer questions. The total sample consisted of 30 male and 28 female 10th graders with a mean age of 15.2 years.<sup>3</sup>

*Seventh-Grade Sample.* A junior high school in another Detroit suburb was contacted on the recommendation of the district curriculum supervisor, and agreed to participate. Every 7th grader at the school ( $n = 200$ ) was given

<sup>3</sup>It is difficult to determine an exact response rate, because teachers at the participating schools recruited subjects randomly. Comparisons between students from the two schools were made on demographic features and the dependent variables of interest. The only differences noted were that students from the Detroit-area school had more educated fathers and were more likely to be Jewish. The single black subject in the sample also attended this school. In all analyses, the 10th-grade sample is treated as a single group, with no reference made to the particular school from which subjects were drawn.

a parental permission slip. Of these, 159 were returned with an affirmative response, for a response rate of 80%. All subjects who returned slips participated in the study; 95 of these were females, 64 were males (mean age = 12.1 years). Data collection occurred on one school day during students' regularly scheduled science period. A female experimenter distributed questionnaires, ascertained that subjects understood the instructions, then allowed them to work at their own pace.

*Third-Grade and Kindergarten Samples.* Five elementary schools in the same suburb as the 7th-grade sample were contacted; three of these agreed to participate. Permission slips were distributed by teachers to all kindergartners and 3rd graders, and every child whose parents granted consent participated in the study. The total kindergarten enrollment at the three schools was 189, of which 105<sup>4</sup> participated (56%, 50 subjects were girls, mean sample age = 5.3 years). The third grade enrollment was 132; 91 participated (69%, 51 girls, mean age = 8.4 years). Comparisons among the schools on demographic and dependent variables revealed few differences.

Each child was interviewed individually and privately by one of six female researchers. The interviews, which lasted between 25 and 35 minutes, took place in various schoolrooms as arranged by school personnel, over a period of six weeks. To maintain children's attention during the interview, they were allowed to choose stickers from a box and place them on cardboard "bookmarks" as different parts of the interview ended.

### *The Questionnaire*

The bulk of the questionnaire involved vignettes in which target boys or girls were described as possessing masculine or feminine attributes. Subjects were asked to judge the target on a variety of other sex-linked characteristics. Results from this portion of the questionnaire are described elsewhere (Biernat, in press).

The portion of the questionnaire/interview most relevant to the present topic was the self-ratings segment. Subjects were asked to rate themselves on a series of sex-typed attributes, listed in Table I. From previous work, four types of components of gender stereotypes were identified: personality traits, physical characteristics, roles/behaviors, and occupations. Three feminine and three masculine instances of each of these four components were generated or drawn from various sources. The personality traits were adapted from the PAQ (Spence et al., 1974, 1975); the roles/behaviors were those

<sup>4</sup>Only 94 of these subjects were used in the main study; the other eleven participated in a shorter interview designed to test whether the stimulus materials were perceived as sex typed. These data are described in the Discussion.

used by Deaux and Lewis (1984) and by Martin (1989); the occupations were also selected from Deaux and Lewis' (1984) work, from Huston (1981), and from Ruble and Ruble (1980); and the physical characteristics were in part selected from Deaux and Lewis (1984), although some were created for the study (short hair, pretty smile, big muscles).

The subjects' task was to rate themselves on each of the 24 attributes, presented in random order (with the qualification that no more than two attributes from the same gender category and/or component category appeared in sequence). For the younger children, questions were phrased, for example, in this form: "Do you have big muscles?" "Would you maybe like to be a nurse when you get older?" "Are you tall?" Subjects responded using a scale they had become familiar with in the earlier part of the interview. They first responded to each question with a simple "yes" or "no," at which point the interviewer asked, "Do you think "really" yes/no or "just sort of" yes/no?" This was later transformed into a 4-point response scale, ranging from *really no* to *really yes*.

For the older subjects, ratings were made in response to statements of this form: "I enjoy cooking and baking" "I am tough and rough," and "I may want to be a truck driver when I get older." These subjects responded by circling a number on a scale ranging from 1 (*not at all true of me*) to 4 (*very true of me*). The older subjects then completed the 24-item PAQ.<sup>5</sup>

## RESULTS

### *Descriptive Analyses*

Eight self-judgment indices were created (i.e., masculine traits, physical characteristics, roles, occupations; feminine traits, physical characteristics, roles, occupations) by averaging subjects' ratings across the three instances that made up each category (see Table I). The means on these eight indices for male and female subjects at each grade level appear in Table II. A clear pattern of "appropriate" sex typing (that is, males rating themselves more highly on masculine attributes than females, and females rating themselves more highly on feminine attributes than males) is evident at all grade levels.<sup>6</sup>

<sup>5</sup>Correlations were computed between these older subjects' femininity and masculinity scores as measured by the PAQ and the items described here. The average correlation between the F scale of the PAQ and the "home-grown" femininity index was .59, and the average correlation between the corresponding masculinity scales was .44.

<sup>6</sup>The PAQ data, which were collected from 7th-grade, 10th-grade, and college subjects, supported this pattern as well. Subjects were, however, somewhat less likely to be sex typed on the Masculinity subscale than on the Femininity or M-F index.



**Table I.** Sex-Typed Attributes Used as Descriptors and Dependent Measures

Component	Masculine attributes	Feminine attributes
Physical features	Tall	Pretty smile
	Muscular (has big muscles)	Soft voice
	Short hair	Delicate and soft
Personality traits	Tough and rough	Emotional (cries easily)
	Can take care of self	Helpful and kind to others
	Makes decisions easily	Well behaved
Roles/behaviors	Good at fixing things	Babysits
	Leader in groups	Cooks and bakes
	Plays baseball	Decorates room
Occupations	Doctor	Nurse
	Truck driver	School teacher
	Construction worker	Secretary

To examine Deaux and Lewis' (1983, 1984) suggestion that different gender stereotype components are relatively independent yet related to each other in systematic ways, correlations among the components (trait, physical, role, and occupation) were also calculated within each grade level, and for male and female subjects separately. For each of these ten groups (males and females at five different grade levels), two *average* correlations were computed: one representing the average association among the masculine attributes and one representing the average association among the feminine attributes. For example, an average feminine correlation was based on the six relevant correlations among subjects' feminine ratings (trait-physical, trait-

**Table II.** Sample Sex Differences in Self-Ratings on Masculine and Feminine Attributes<sup>a</sup>

Subject sex	Attribute index							
	M trait	F trait	M phys.	F phys.	M role	F role	M occup.	F occup.
Kindergarten data								
Male	3.04	3.09 <sup>x</sup>	2.89	2.70	2.77	2.80	2.34	1.93
Female	2.43	3.13	2.32	3.19	2.20	3.25	1.93	2.57
Third-grade data								
Male	3.15	2.88	2.93	2.21	2.67	2.63	1.85	1.44
Female	2.70	3.12	2.09	2.77	2.36	3.48	1.52	2.41
Seventh grade data								
Male	2.81 <sup>x</sup>	2.67	2.66	1.96	2.58	2.58	1.42 <sup>x</sup>	1.21
Female	2.72	3.18	2.12	2.69	2.21	3.41	1.37	2.08
Tenth-grade data								
Male	2.98 <sup>x</sup>	2.57	2.69	2.08	3.05	2.03	2.09	1.44 <sup>x</sup>
Female	2.76	3.27	1.83	2.52	2.46	2.99	1.46	1.71
College data								
Male	2.99 <sup>x</sup>	3.10	2.67	1.99	2.94	2.61	1.31 <sup>x</sup>	1.30 <sup>x</sup>
Female	2.83	3.48	1.90	2.64	2.20	3.20	1.28	1.39

<sup>a</sup>Each of the male means was significantly different from its corresponding female mean ( $p < .05$ ) except in those cases indicated by a superscript "x."

**Table III.** Average Correlations Among Masculine and Feminine Attributes (Trait, Physical, Role, Occupation) for Males and Females at Each Grade Level

Grade level	Male subjects			Female subjects		
	Masculine	Feminine	<i>n</i>	Masculine	Feminine	<i>n</i>
Kindergarten	.11	.34 <sup>a</sup>	44	.32 <sup>a</sup>	.14	49
Third	.01	.28	40	.24	.17	51
Seventh	.19	.33 <sup>b</sup>	64	.28 <sup>b</sup>	.38 <sup>c</sup>	95
Tenth	.08	.49 <sup>b</sup>	30	.12	.19	28
College	.14	.28	41	.12	.23	41

<sup>a</sup>*p* < .05.

<sup>b</sup>*p* < .01.

<sup>c</sup>*p* < .001.

role, trait-occupation, physical-role, physical-occupation, role-occupation).<sup>7</sup> The exact procedure was to first transform each individual correlation into a *z* score using Fisher's *r* or *z* formula, then calculate an average based on the *z* scores, then transform this average into a correlation coefficient. These correlations appear in Table III.

In general, the correlations were modest, and roughly comparable to those reported by Deaux and Lewis (1983, 1984), using target- rather than self-ratings. In chi-square tests of the equality of correlations across grade level, no developmental differences were found. However, one sex difference deserves comment. Among males at every grade level, the average correlation among feminine attributes was higher than that among masculine attributes. This difference was statistically significant only among the 10th-grade males, but a sign test supported the overall pattern at *p* < .04. For males, feminine traits, physical characteristics, roles, and occupations were more interrelated than were the comparable masculine attributes. Such a pattern was *not* found among females.<sup>8</sup>

#### *Developmental Analyses: Age Differences in Sex Typing*

To specifically test for grade level differences in degree of sex typing, a 5 (grade level) × 2 (sex of subject) × 4 (component of gender stereotype — trait, physical, role, occupation) × 2 (judgment type — masculine, feminine) between-within mixed design analysis of variance (ANOVA) was computed. The first two factors (grade and sex) were at the between-subject level; the

<sup>7</sup>In general, these individual correlations were comparable in strength, although the weakest correlations were typically those between occupation-trait and occupation-physical characteristics.

<sup>8</sup>Correlations *between* masculine and feminine indices are reported elsewhere (Biernat, in press). In general, masculine-feminine correlations became increasingly negative with age.

**Table IV.** Summary of Repeated Measures Analysis of Variance on Masculinity and Femininity Self-Ratings

Factor	<i>F</i> test	<i>df</i>
Grade	13.62 <sup>d</sup>	4, 474
Subject Sex	2.50	1, 474
Component (trait, phys., role, occup.)	621.62 <sup>d</sup>	3, 472
Judgment Type (masculine, feminine)	47.31 <sup>d</sup>	1, 474
Grade × Subject Sex	3.27 <sup>a</sup>	4, 474
Grade × Component	13.29 <sup>d</sup>	12, 1249
Grade × Judgment Type	5.92 <sup>c</sup>	4, 474
Sex of Subject × Component	4.09 <sup>b</sup>	3, 472
Sex of Subject × Judgment Type	383.53 <sup>d</sup>	1, 474
Component × Judgment Type	13.46 <sup>d</sup>	3, 472
Grade × Sex of Subject × Component	3.20 <sup>c</sup>	12, 1249
Grade × Sex of Subject × Judgment Type	1.15	4, 474
Grade × Component × Judgment Type	4.96 <sup>d</sup>	12, 1249
Sex of Subject × Component × Judgment Type	18.22 <sup>d</sup>	3, 472
Grade × Sex of Subject × Component × Judge Type	2.40 <sup>b</sup>	12, 1249

<sup>a</sup>*p* < .05.<sup>b</sup>*p* < .01.<sup>c</sup>*p* < .001.<sup>d</sup>*p* < .0001.

latter two (component and judgment type) were within-subject factors. In this analysis, then, the eight attribute indices (i.e., masculine role, feminine role, masculine trait, feminine trait, etc.) were entered as repeated measures.

The results of this analysis are presented in Table IV. While nearly all of the main and interactive effects were significant, the most meaningful effects are those involving the "judgment type" factor (and particularly any interactions with subject sex), since our concern is with self-ascriptions of masculinity vs. femininity. The significant main effect of judgment type reflected subjects' greater endorsement of feminine ( $M = 2.58$ ) than masculine characteristics ( $M = 2.33$ ) as being self-descriptive. Not surprisingly, this was qualified by a highly significant interaction between sex of subject and judgment type: Males subjects ( $M = 2.56$ ) rated themselves significantly higher than female subjects ( $M = 2.26$ ) on *masculine* attributes, while females ( $M = 2.85$ ) rated themselves significantly higher than males ( $M = 2.13$ ) on *feminine* attributes ( $ps < .01$ ). These and all subsequent simple effect tests were calculated using the Bonferroni method. A comparison of these means also indicated that females were more likely than males to distinguish their masculine attributes from their feminine attributes (i.e., the mean absolute difference between masculine and feminine self-rating for females was .59; for males, .43).

Related to this point, a more complex significant interaction of note was that between sex of subject, judgment type (masculine or feminine) and

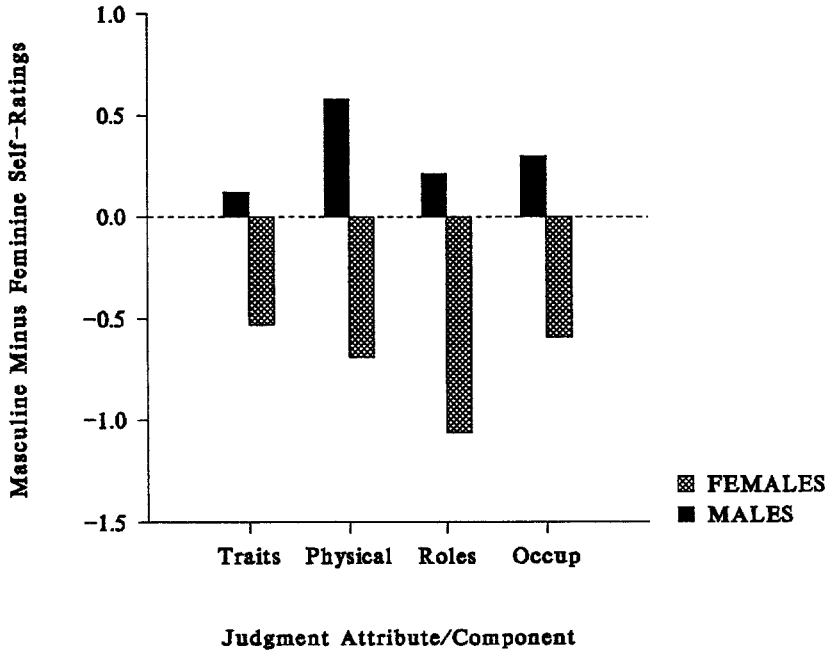


Fig. 1. Interaction between sex of subject, judgment type (masculine or feminine), and component of gender stereotypes.

component of judgment (trait, physical, role, occupation). For ease of presentation, this finding is depicted in Fig. 1 using masculine *minus* feminine self-ratings as the dependent variable. Thus, numbers above zero indicate that subjects described themselves as more masculine than feminine, and numbers below zero indicate the reverse. These data suggest that males and females are sex typed most strongly on different attributes. Specifically, males in this study most strongly distinguished their masculine *physical* qualities from their feminine physical qualities (i.e., the sex-typed distinction was significantly higher on physical attributes than on the other three attributes, among which no significant differences existed), while females most strongly distinguished their feminine *roles* from their masculine roles (again, differentiation was significantly greater on roles than on the other three attributes, which did not differ from each other).

Were there developmental differences in the self-descriptions of our male and female subjects? The three-way interaction between grade level, sex of subject, and judgment type was not significant, indicating that subjects from different age groups did *not* differ in overall degree of sex typing. However, the significant four-way interaction, also including *component* of gender stereotype, suggests that strong sex typing may occur on different at-

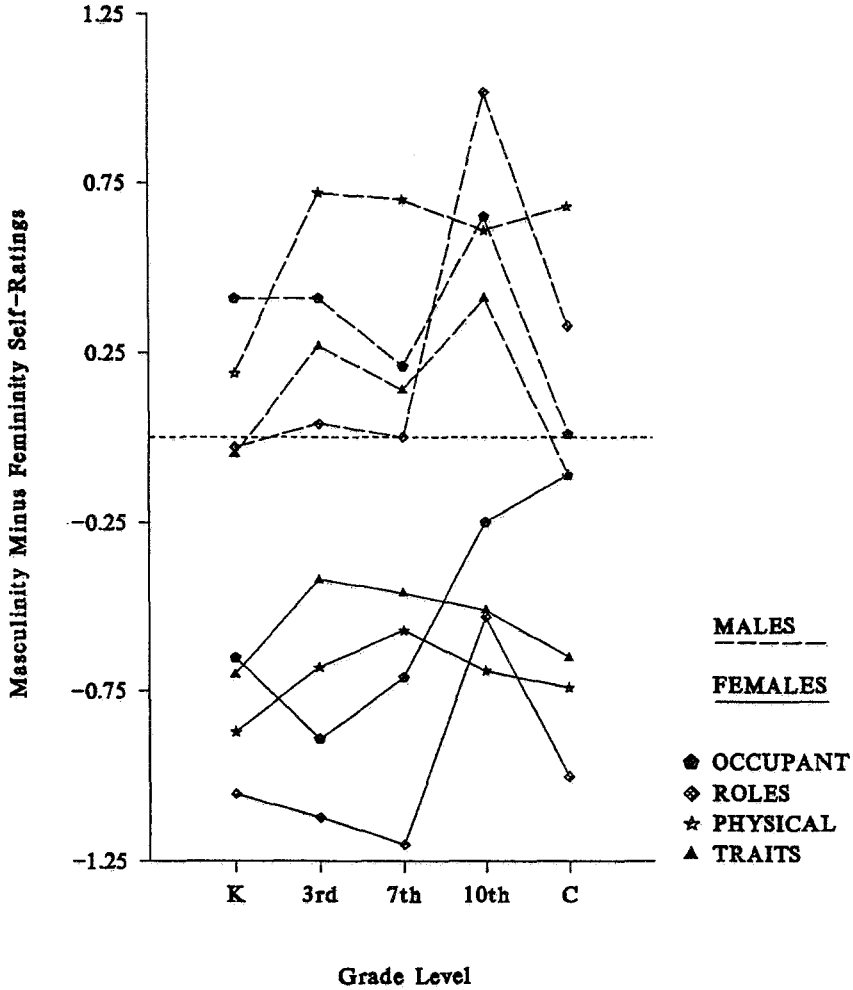


Fig. 2. Interaction between grade level, sex of subject, judgment type (masculine or feminine), and component of gender stereotypes.

tributes at different ages. That is, females and males at different developmental stages may show equal levels of traditional sex typing, but may differ in the aspect or component of gender on which their sex typing most strongly rests.

This four-way interaction is depicted in Fig. 2, where the dependent variable is subjects' mean self-rating on masculine *minus* feminine attributes.<sup>9</sup> Subjects' sex differentiation is quite clear, with all female means lying below

<sup>9</sup>Observations made about this interaction were statistically supported using post hoc simple effects tests, except where otherwise noted.

zero and most male means above. This latter point is noteworthy, as it indicates that males (particularly kindergarten and college males) were more likely than females to ascribe *both* masculine and feminine attributes to themselves. This was particularly true of *roles*: All males in this study except 10th graders were as likely to endorse babysitting, cooking, and room decorating as self-descriptive as they were to endorse fixing things, being a leader, and playing baseball. The exceptions to this finding – 10th-grade males – were very highly sex typed on roles, as Fig. 2 indicates.

Kindergarten males exhibited their highest degree of sex typing on occupations; they much preferred doctor, truck driver, and construction worker as potential vocations to nurse, school teacher, and secretary. The other male subjects – 3rd graders, 7th graders, and college students – revealed strongest sex typing on *physical* attributes. They described themselves as tall, muscular, and shorthaired to the relative exclusion of the attributes pretty smile, soft voice, and delicate and soft. Turning now to the female subjects, Fig. 2 reiterates the previously discussed finding that females are strongly sex typed on roles. The exception to this pattern was 10th-grade girls, who exhibited their strongest levels of sex typing (although not significantly so) on *physical* attributes.

Finally, Fig. 2 can be examined for insight on which attributes most distinguish the sexes at different ages. In other words, where do we find the largest differences between male and female self-descriptions? At kindergarten, 3rd grade, 7th grade, and college, the greatest differentiation between male and female subjects was evident on *physical* descriptions. Kindergartners also showed equally strong sex differentiation on the *occupational* indices. Tenth graders, while exhibiting considerable distinction between the sexes on physical attributes, were most highly differentiated in regard to self-ascribed *roles*.

## DISCUSSION

Female and male subjects at all grade levels were substantially sex typed, although males were most likely to distinguish themselves *physically* from females, and females to distinguish themselves *behaviorally* from males. This finding was qualified, however, by an interaction with grade level. The physical differentiation noted above was particularly marked among 3rd-grade, 7th-grade, and college-aged males, but less so among kindergarten males (who were strongly sex typed on occupations) and 10th-grade males (for whom behaviors or roles served the strongest sex-typing function). Females at all grade levels (except Grade 7) were characterized by strong sex typing on roles; 7th-grade girls strongly differentiated their feminine from

their masculine physical features. We found the largest differences between female and male subjects on *physical* descriptors, except among 10th graders, for whom *behaviors* most clearly differentiated the boys from the girls.

Physical differences between the sexes are probably the most veridical, or at least the most verifiable sex differences at all age levels. Physical attributes are also distributed across the sexes with less overlap than is typically present when, for example, personality traits are considered (Deaux & Kite, 1975). Yet behavioral implications of gender may indeed ascend in importance during the early high school years (i.e., 10th grade) when choices must be made about involvement in a variety of possible social activities. Ullian's (1976) developmental model of sex role conceptualization also places 10th graders in a stage where conformity to sex roles is valued as a means of deriving self-esteem and maintaining successful heterosexual relationships. Deviation from traditional duties and roles "is viewed as a threat to the survival of both marriage and family" (p. 42). In this study, 10th grade boys in particular seemed to be demarcating the roles and behaviors they, as males, would and would not engage in: they would fix things, be leaders, and play baseball, but would not take care of children, cook, and decorate. Kindergartners' strongly sex-typed occupational choices may reflect their newly acquired knowledge of occupational stereotypes: it is at ages 4-5 that children begin to express stereotype-consistent occupational choices (Huston, 1983).

At this time, however, these data make more of a descriptive than a theoretical contribution. Ullian's (1976) propositions concerning cycles of rigidity and flexibility in children's sex roles were not supported, and only the finding that roles ascended in importance to 10th graders was consistent with her framework. Furthermore, little other theoretical work relevant to these issues appears in the literature. The greatest service of these data is, perhaps, in urging the development of a cohesive theoretical account of age-related changes in the extent, direction, and venue (i.e., important components) of sex typing. A componential model of gender is an intuitively appealing framework for organizing data on these issues.

The correlational findings in this study suggest that traits, physical characteristics, roles, and occupations are modestly interrelated, yet distinct aspects of gender for children in each of the age groups studied, thus concurring with findings from adults (Deaux & Lewis, 1983, 1984). The present data also indicate an interesting sex difference: that males' self-descriptions (but not females') involve relatively loose linkages among masculine attributes but relatively strong intercorrelations among feminine attributes. In other words, masculinity is a more differentiated construct than is femininity for males. That the converse pattern was not found among females make one hesitant to speculate, but it seems plausible that complexity and differentia-

tion of self-description will be greater on attributes appropriate to one's own gender than on those appropriate to the other gender group (see Linville, 1982, and Linville & Jones, 1980, for discussions of greater complexity of thought in regard to ingroup vs. outgroup members). These data require replication, and must also be considered in a theoretical developmental account of sex typing.

It is interesting to note that females were, in general, more likely than males to endorse sex-consistent over sex-inconsistent attributes as self-descriptive (see Figs. 1 and 2). This seems to contradict evidence that: (1) boys' preference for masculine attributes increases with age, while girls' preference for feminine attributes peaks at age 4, then incorporates more masculine characteristics (Brown, 1957, Hartup & Zook, 1960; Marantz & Mansfield, 1977; Marcus & Overton, 1978; Nadelman, 1974; Thompson & McCandless, 1970); and (2) it is traditionally less acceptable for boys to exhibit femininity than it is for girls to exhibit masculinity (Berndt & Heller, 1986; Carter & McCloskey, 1983-1984; Huston, 1983; O'Leary & Donoghue, 1978). In this study, boys were more likely than girls to exhibit or admit to sex-inconsistent attributes, suggesting that they were allowed more latitude in their personal preferences. We also found greater overall endorsement of feminine ( $M = 2.58$ ) as opposed to masculine ( $M = 2.33$ ) attributes.

This naturally leads us to two questions: (1) Were the attributes used in this study (see Table I) clearly regarded as sex-typed? (2) Were the feminine attributes simply more favorable than the masculine attributes, leading all subjects to endorse them more frequently? In regard to the first question, nearly all of the attributes used in this study were selected from previous research on sex typing and sex stereotypes, and their relevance to gender has been well established. One might, nonetheless, be concerned that the youngest subjects in the sample were unaware of the appropriate cultural sex stereotypes regarding the attributes.

As mentioned briefly in a footnote, a small sample of kindergartners ( $n = 11$ ) were given a short interview in which they were presented with the individual attributes from Table I, and asked to judge if the persons so described were boys, were girls, or could be both. These children were quite accurate in inferring the gender link of the attributes: on average, 73% appropriately labeled the masculine roles "for boys," 82% did so for the masculine physical characteristics, and 91% for the masculine traits. The corresponding figures for feminine characteristics labeled "for girls" were 72, 82, and 73%. As for occupations, the highest accuracy rate was for "nurse" (82% correctly labeling this "for girls"), and the lowest was for "doctor" (with only 55% saying a doctor was likely to be a boy). Of the "errors" in categorizing, most involved judgments that attributes could signal either sex, not the opposite one. Overall, the young children in this sample were quite knowledge-



able about the cultural stereotypes associated with the specific attributes used in this study. The exception to this was their beliefs about doctors (a sign of positive social change?), which, nonetheless, cannot explain why feminine attributes were endorsed more frequently than masculine ones.

To examine the social desirability question, a sample of undergraduates ( $n = 41$ ) enrolled in advanced psychology courses at the University of Florida were asked to rate the "favorability" of each of the attributes listed in Table I, and presented in random order. One third of the subjects were instructed to think of the "average person" as they made their favorability ratings, one third were to think of the "average female," and the final third were asked to rate the favorability of the attributes in regard to the "average male." There was virtually no indication that the masculine and feminine attributes differed in favorability, in any of the judgment conditions (average person, female, or male). The exception to this was that masculine physical attributes were rated more favorably than feminine physical attributes by subjects instructed to think of the average male and the average person as they made their ratings. In other words, it is better for the average person, and particularly the average male, to look masculine than to look feminine. This difference in favorability, while probably contributing to male subjects' tendency to differentiate themselves from females on physical attributes, clearly cannot account for the overall tendency of all subjects to endorse feminine characteristics more strongly than masculine ones.

What, then, can be made of the finding that males were more likely than females to indicate that they possessed counterstereotypic characteristics? One heartening possibility is that the masculine role is becoming less rigid—that it incorporates a wider variety of attributes and self-expressions than was previously the case. We must, however, remain cautious in this interpretation, as the finding may still be due to the nature of the *particular* attributes used in this study. For example, if males and females perceived the masculine items to be more strongly stereotypical than the feminine items, girls might, indeed, appear more sex typed than boys. Replication of the present results is clearly needed. In the future, researchers would do well to use a larger set of a gender-relevant attributes, and to move from self-report to behavioral and observational data.

To summarize, during each developmental period covered in this study, sex typing in accordance with traditional sex role standards was readily apparent. Even by age 5, children presented themselves as products of a sex-differentiated culture. Overall levels of sex typing did not vary with age; thus no support was provided for Ullian's (1976) thesis concerning developmental fluctuations in the rigidity and flexibility of sex typing. The present data are probably most instructive in their indication that the attributes on which subjects most strongly manifest their masculinity and femininity (at least by

self-report) do change developmentally. Researchers too often describe femininity and masculinity as unitary concepts, without recognizing that their meaning is likely to change with age as different cognitive and social tasks are faced. Theoretical integration is clearly needed, but a multicomponent model of gender, of the sort proposed by Deaux and Lewis (19883, 1984), presents a promising and rich paradigm for future research on the meaning of gender in both self- and other-descriptions.

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