

Self-Regulatory Mechanisms Governing Gender Development

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BUSSEY, KAY, and BANDURA, ALBERT. *Self-Regulatory Mechanisms Governing Gender Development*. CHILD DEVELOPMENT, 1992, 63, 1236–1250. This study tested predictions about development of gender-related thought and action from social cognitive theory. Children at 4 levels of gender constancy were assessed for their gender knowledge, personal gender standards, and gender-linked behavior under different situational conditions. Irrespective of gender constancy level, all children engaged in more same-sex than cross-sex typed behavior. Younger children reacted in a gender stereotypic manner to peers' gender-linked behavior but did not regulate their own behavior on the basis of personal gender standards. Older children exhibited substantial self-regulatory guidance based on personal standards. They expressed anticipatory self-approval for same-sex typed behavior and self-criticism for cross-sex typed behavior. Their anticipatory self-sanctions, in turn, predicted their actual gender-linked behavior. Neither gender knowledge nor gender constancy predicted gender-linked behavior. These results lend support to social cognitive theory that evaluation and regulation of gender-linked conduct shifts developmentally from anticipatory social sanctions to anticipatory self-sanctions rooted in personal standards.

Because so much of human experience is affected by gender differentiation, the processes governing gender development continue to be the subject of much developmental theorizing and research. Proponents of cognitive-developmental theory (Kohlberg, 1966) advanced gender constancy as the driving force guiding young children's gender-related behavior (Stangor & Ruble, 1987). According to this theory, once children achieve gender constancy—a conception of their own gender as fixed and irreversible—they positively value and seek to adopt only those behaviors congruent with the gender concept they have acquired. Children are not expected to adopt sex-typed behaviors consistently until after they have labeled themselves unalterably as a boy or a girl, which usually is not achieved until about age 6. However, many studies have failed to corroborate the link between children's attainment of gender constancy and their gender-linked conduct (Huston,

1983). For example, children prefer same-sex toys (Carter & Levy, 1988; Marcus & Overton, 1978), imitate same-sex models (Bussey & Bandura, 1984), and reward peers for gender-appropriate behavior before they have fully attained gender constancy (Lamb & Roopnarine, 1979). Moreover, growing awareness of gender constancy does not increase children's preferences for same-sex roles and activities (Marcus & Overton, 1978; Smetana & Letourneau, 1984). Thus, factors other than gender constancy seem to guide children's gender-linked behavior.

Because of its limitations, cognitive-developmental theory has been modified and extended within the explanatory framework of gender schema theory (Carter & Levy, 1988; Martin & Halverson, 1981). This theory bears many similarities to cognitive-developmental theory, but departs from it in two significant ways. First, the attainment of complete gender constancy is not consid-

This research was supported by Public Health Research grant MH-5162-25 from the National Institute of Mental Health to Albert Bandura, and Australian Research Council grant A78930570 to Kay Bussey. We are grateful to Kathleen Davies, Elizabeth Grimbeek, and Gwyn Wachtel for assisting with the data collection, and to the children at Bing Nursery School for their participation in the study. We thank Barry Zimmerman for helpful comments on an earlier draft of the manuscript. Requests for reprints should be sent either to Kay Bussey, School of Behavioral Sciences, Macquarie University, North Ryde, Sydney, Australia, 2109, or to Albert Bandura, Department of Psychology, Stanford University, Stanford, CA 94305-2130.

ered necessary to motivate and guide children's gender-linked behavior (Martin & Halverson, 1981; Stangor & Ruble, 1987). Second, the information-processing functions of the schema are given greater emphasis in gender schema theory than in Kohlberg's theory (Bem, 1981; Martin & Halverson, 1981).

Gender schema theory initially proposed that only the attainment of gender identity was necessary for the acquisition of gender-linked behavior (Martin & Halverson, 1981). Once children could label their own gender and that of others, they were expected to behave in ways consistent with traditional gender roles. In keeping with these expectations, Fagot and Leinbach (1989) found that children who acquired gender-labeling skills prior to 28 months (early labelers) were more likely to play with traditional gender-linked toys than those who had not yet mastered gender labeling by that age (late labelers). However, it remains unclear whether gender labeling and gender-linked preferences are coeffects of social influences or are causally linked. Early labelers may simply be more precocious than late labelers, demonstrating gender-related play preferences learned earlier from parents, peers, and the media. Moreover, at this age, children are unable to label accurately the gender linkage of toys (Weinraub et al., 1984), regardless of their ability to label accurately the gender of persons. Hence, knowledge of gender-linked labeling cannot explain the early phases of gender development. To complicate matters even further, Martin and Little (1990) have recently found that the strongest correlate of gender-linked preference was gender stability. A weaker relation was found with gender identity, but none was obtained between gender consistency and gender-linked preference. Although gender schema theory differs from Kohlberg's theory in the level of gender understanding that is considered necessary for the acquisition of gender-linked behavior, the measures of gender conception remain the same.

With regard to the information-processing aspect of gender schema theory, the more salient or available the schema, the more individuals are expected to attend to, encode, represent, and retrieve information relevant to gender. Research conducted within this conceptual framework has added to our understanding of how gender-schematic processing affects allocation of attention, organization, and memory of gen-

der-related information. However, the relation of gender schematization to children's gender preferences has been problematic. The findings have been inconsistent across different measures of gender schematization and across age groups (Carter & Levy, 1988; Edwards & Spence, 1987; Signorella, 1987). Moreover, Signorella (1989) has noted that children's knowledge about gender-related stereotypes is unlikely to explain gender development, because most young children "know" the gender stereotypes but differ in gender-linked conduct. Apparently, gender knowledge is not the main determinant of children's gender-linked conduct. Both cognitive-developmental theory and gender schema theory have focused on gender conceptions, but neither devotes much attention to the translation of gender-linked conceptions to gender-linked conduct. Nor do they specify the motivating mechanism for acting in accordance with a conception (Bandura, 1986). Knowing a stereotype does not necessarily mean that one strives to behave in accordance with it. For example, self-conception as elderly does not enhance valuation and eager adoption of the negative stereotypic behavior of old age.

Social cognitive theory provides a third perspective on gender development and the mechanisms governing the motivation and regulation of gender-linked behavior (Bandura, 1986, 1989). This theory specifies the multifaceted determinants of thought and action and the regulative mechanisms by which they are linked. Social cognitive theory does not require that action be dependent on gender knowledge in the early phase of gender development. Because gender-related cues are available for gender labeling, in this view, children learn to label their own and others' gender before they learn to label and categorize objects, activities, tasks, and roles that, of themselves, have no inherent gender linkage. It is from children's social and observational experiences that gender-linked knowledge emerges. As children develop stronger gender-linked preferences, their knowledge of the constellations of attributes that are linked to gender increases. In social cognitive theory (Bandura, 1986), children's growing cognitive competence is but one factor involved in their gender-related development. Proximal social influences of parents, teachers, and peers, as well as distal social and symbolic influences from the mass media and cultural institutions, all serve to promote gender development. In this theory of

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triadic reciprocal causation, the social environment, children's knowledge structures and cognitive capabilities, and their behavior interact to produce gender-related standards and action.

Viewed from the sociocognitive theoretical perspective, it is not surprising that children exhibit gender-linked preferences prior to achieving gender constancy. From the moment of birth children are socialized according to their gender (Rheingold & Cook, 1975). Parents explicitly and implicitly convey to their children gender-appropriate behavior. As a consequence, children act in accord with gender-linked stereotypes before they are fully cognizant of the culturally derived gender-linked stereotypes and before they have achieved gender constancy (Blakemore, LaRue, & Olejnik, 1979; Weinraub et al., 1984). Social cognitive theory posits that, in the course of development, the regulation of behavior shifts from predominantly external sanctions and direction to gradual substitution of internal sanctions and mandates rooted in personal standards (Bandura, 1986). Initially, behavior is self-regulated on the basis of anticipatory outcomes mediated by the social environment. With increasing experience, social knowledge, and cognitive development, children construct their own personal standards relating to gender-linked conduct. Such conduct is then motivated and regulated mainly by the exercise of self-reactive influence.

Evaluative self-reaction is the mechanism whereby standards motivate and regulate conduct anticipatorily (Bandura, 1986, 1991a). After an internalized self-regulative mechanism is developed through the combined influence of modeling, tuition, evaluative feedback, and environmental structuring, children guide their conduct by sanctions they apply to themselves. They do things that give them self-satisfaction and a sense of self-worth. They refrain from behaving in ways that violate their standards to avoid self-censure. The standards provide the guidance; the anticipatory self-sanctions the motivators. Self-sanctions thus keep conduct in line with internal standards. Developmentally, children learn to evaluate and regulate gender-linked conduct on the basis of external anticipatory sanctions before they do so in terms of anticipatory self-sanctions rooted in personal standards. Whereas gender schema theory emphasizes conception matching as the primary regulative process, social cognitive theory posits

both a standard-matching function and an affective self-reactive function. Research conducted in different domains reveals that both functions are necessary in the motivation and regulation of conduct (Bandura, 1991b).

The self-regulatory mechanisms specified in social cognitive theory have been shown to operate as important motivators and regulators of children's conduct in other major domains of functioning. For example, children exhibit self-reactive control of transgressive conduct (Bandura, 1991a; Grusec & Kuczynski, 1977; Perry, Perry, Bussey, English, & Arnold, 1980), aggressive patterns of behavior (Perry & Bussey, 1977), and of the course of their cognitive development (Zimmerman, 1989). However, the regulative role of self-influence through personal standards in gender-related behavior has not been systematically examined.

The present study was primarily designed to test predictions from social cognitive theory regarding the emergence and regulation of gendered thought and action. However, for comparative interest, the contributions of factors emphasized in cognitive-developmental theory and gender schema theory, such as gender labeling, gender constancy, and gender-linked knowledge, were also examined. Children were selected at four levels of gender conception, ranging from gender labeling to gender constancy, and their gender-related standards and conduct were assessed. Evaluative standards are manifested not only in self-reactions but in the sanctions applied to the behavior of others. Therefore, children's gender-linked knowledge and social sanctions toward peers' behavior that is traditionally regarded as cross-sex were also measured.

Based on social cognitive theory of gender development, it was predicted that children would be aware of social sanctions for sex-typed behavior and behave in gender-related ways before they displayed anticipatory self-approval for same-sex typed behavior and self-criticism for their own cross-sex typed behavior. It was further hypothesized that after children adopted gender standards, their anticipatory self-sanctions would predict their gender-linked conduct. In accord with findings of previous tests of cognitive-developmental theory, children at higher levels of gender constancy were not expected to be more likely to engage in same-sex behavior and shun cross-sex behav-

ior than children at lower levels of gender constancy. In gender schema theory, gender identity, and more recently gender stability, rather than the complete attainment of gender constancy, are considered necessary to guide children's gender-linked behavior. Hence, from this perspective, children who had attained the lower levels of gender conception, gender identity and gender stability, would be expected to engage in more same-sex behavior than cross-sex behavior.

Method

Subjects

Subjects were 40 nursery school children (20 girls and 20 boys) from predominantly middle-class families. They ranged in age from 2.5 to 4.7 years, with a mean age of 3.5 years. Equal numbers of boys and girls were selected at one of four levels of gender conception. Three female experimenters conducted different phases of the study.

All children participated in two sessions approximately 3 to 5 days apart. In the first session, children's level of gender conception was measured. In the second session, gender-related knowledge, evaluative standards, and conduct were measured. One experimenter conducted the first session, and a second experimenter conducted the second session. A third experimenter recorded children's evaluative responses and conduct from behind a one-way observation mirror. Each experimenter was blind to children's performances on the other aspects of the assessment.

Gender Conception

Children's level of gender conception was assessed from their performances on the Slaby and Frey (1975) gender constancy test, which consists of three components that most children master in the following sequential order: (1) gender identity—knowledge of self and other's gender; (2) gender stability—knowledge that gender remains invariant across time; (3) gender consistency—knowledge that gender remains invariant across situations (Fagot, 1985; Slaby & Frey, 1975). Those children who failed the gender identity component of the test were administered the lower-level gender-labeling test (Fagot, Leinbach, & Hagan, 1986). This test requires only that the child points to the picture of a man/woman and boy/girl when the gender labels are provided by the experimenter. Further, it does not use the more complicated repeated questioning procedure of the Slaby and Frey

test. It was used in this study to establish children's gender labeling competence that may have been masked by the Slaby and Frey (1975) test. All children exhibited accurate gender labeling. Consequently, four progressive levels of gender conception were established: (1) no gender identity, but accurate gender labeling; (2) gender identity; (3) gender identity and gender stability; (4) gender identity, gender stability, and complete or almost complete gender consistency (one out of the three questions incorrect).

Gender-Linked Self-Evaluative Standards

A second experimenter, blind to the child's level of gender conception, brought each child individually to the testing room. The experimenter explained that she was helping a friend set up a toy store. Her friend wanted to know which toys children liked to play with so she could stock them in her toy store. It was further explained that *only* the toy store lady, not the experimenter, needed to know how the children would feel about playing with each of the toys. The children were told that their responses would be recorded automatically and anonymously on a "computer" and that the experimenter would sit with her back to the computer so that she was unaware of their responses. It was also explained that the toy store lady was asking many children about their reactions to the toys and that she would not be able to identify their particular responses. The "computer" consisted of a panel of lights and switches for reporting self-evaluative reactions. This format enabled even the youngest children in the study to express their evaluative reactions privately without the experimenters being aware of their responses. This response procedure thus provided full control over any possible experimenter bias and social influence of the children's evaluative reactions.

Children were first trained to use the lights and switches to record the nature and strength of their self-evaluative reactions by playing a ring toss game. They were taught to record their positive and negative evaluative reactions by pressing a switch that activated the light behind it. When the light was activated a buzzer sounded to inform the experimenter that the child had responded. The use of the buzzer enabled the experimenter to sit with her back to the lights to remain blind to the child's response. The observer, also blind to the child's level of gender constancy, was located behind a one-

way mirror and recorded the children's evaluative reactions.

To measure strength of self-reactions, five lights were mounted vertically: a large red light, a small red light, a large orange light, a small green light, and a large green light. The lights signified five different self-evaluative reactions using descriptors established in pretest as those used by nursery school children to represent approving and critical affective reactions. Specifically, children were told that they should press the switch on the large green light if they anticipated feeling *real great* with themselves for having played with a particular toy. Similarly, they should activate the small green light if they would feel *kinda great*, the orange light for feeling *nothing special*, the small red light for feeling *kinda awful*, and the large red light for feeling *real awful* with themselves after having played with each of the toys.

Children were trained to respond evaluatively to their attainments with the ring toss game until they could correctly use the lights to signify approving and critical self-reactions. This preparatory training removed the novelty of activating lights and ensured full understanding of their evaluative import. Following instruction in the procedure, children's gender-linked personal standards were measured by the degree to which children anticipated self-satisfaction or self-criticism for playing with different types of toys. Two parallel sets of toys (A and B), each consisting of five toys, were used. One set was used to measure personal standards and the other to measure spontaneous gender-linked behavior. Within each of the four levels of gender conception, sets A and B were counterbalanced for assessing self-evaluative standards and gender-linked behavior to control for any possible variation in the attributes across the two sets of toys. Toys were selected on the basis of gender-linked ratings by adults. Each set included a dump truck (highly masculine), robot (moderately masculine), xylophone (neutral), kitchen set (moderately feminine), baby doll (highly feminine). The two sets of toys differed in color and other appearance features, but not in size. Children were shown each of the toys separately in one of four different sequences, and they registered their anticipated self-evaluative reaction. For half of the children in each condition the red light was uppermost and for the other half the green light was uppermost to control for any possible position affects. Evaluative reactions

were scored on a 5-point scale with 1 representing *real awful* and 5 representing *real great*.

Gender-Linked Behavior

Each child's gender-linked behavior was measured during an unstructured play session. The experimenter removed the box containing the toys used for the personal standards measure and explained that she was taking them to children in the room next door. She left the other set, randomly arranged in one of four orders on the floor for the child to play with while she was gone. The child was told that she or he could play with any of the toys while the experimenter was away and that when she returned she would knock on the door to let the child know that she was coming back into the room. They were given the information about the signaled entry to remove any possible external constraint on their gender-linked behavior for fear that the experimenter would walk in on them unannounced and see what they were doing.

The duration of play with each toy was recorded by an observer who observed the play sessions through a one-way mirror. The observer was provided with a behavior form that listed each of the toys available for play. Each time the child touched a toy a timer was started and the duration of the play behavior was recorded. If the child played simultaneously with several toys, the behavior durations were recorded separately for each toy. A second observer independently recorded the duration of play behavior for eight of the children. The interobserver agreement for duration of play with each of the various toys was 94%, indicating very high scorer reliability.

After 3 min the experimenter returned and explained that the children next door needed more toys and that she would take some to them. She removed three of the toys—two same-sex and one neutral—and remarked that the child could continue playing with the remaining toys, which were both cross-sex, one highly gender-linked and one moderately gender-linked toy. Again, the child's spontaneous play behavior was recorded. During both of the behavior test sessions children were left alone to play with the toys.

Evaluative Social Reactions

Upon her return, the second experimenter invited the child to watch some video clips with her. She explained that the toy store lady had produced some videos to

advertise her store on television, and that she would like the children's appraisal of the videos. Four 7-year-old children, two boys and two girls, enacted cross-sex preferences following a standardized format. The video depicted a child entering a toy store where six toys were displayed on a table. The toys included a dump truck (highly masculine), tool set (moderately masculine), a piano and puppet (both neutral), a tea set (moderately feminine), and a baby doll (highly feminine).

The children in the videotaped presentation examined each of the toys closely and then selected a highly cross-sex typed toy. The boy selected the baby doll and played with it for 2½ min. He changed the doll's diaper, fed her, and patted her. The girl selected the dump truck and played with it for 2½ min. She put blocks in the back of the truck, tipped them out, and scooped them back up again. Four videotapes were produced with different girl and boy actors to control for any possible idiosyncrasies of the child actors, and to counterbalance the order of appearances of girl and boy actors.

The children watched the video clips of the girl and boy separately engage in cross-sex behavior and then recorded their evaluative reactions using the light switches. At the outset, a procedural check was performed to ensure that the child remembered the meaning of the lights and the operation of the switches. They all did. The response options were the same as those used in the assessment of personal standards: real great, kinda great, nothing special, kinda awful, real awful. After watching the video for approximately 30 sec the child was asked, "What would this girl's/boy's *friends* think about her/him playing with this doll/truck?" The child was asked to record his or her evaluations by activating the appropriate light switch. The experimenter was again seated with her back to the lights, blind to the responses. The child watched the video for a further 30 sec before being asked, "What do *you* think about this boy/girl playing with the doll/truck?" Again, the child was instructed to record his or her evaluations using the light switches.

Gender Knowledge

The gender knowledge test was administered as the final task. The experimenter explained that the toy store lady wanted to display the boys' toys separately from the girls' toys in her shop. Toys played with by both boys and girls would be displayed in a third location in the store. Children were

asked to sort each of the 12 toys comprising the A and B sets and two highly sex-typed toys, one feminine and one masculine, from the videos into one of three boxes: a boys' box, a girls' box, and a boys' and girls' box. Pictures of either two boys, two girls, or a boy and a girl were placed in front of the corresponding boxes to remind the children of the three categories. The observer recorded the sorting choices. Items were scored as correct if the toy was sorted into a box that matched the cultural sex role stereotype of masculine, feminine, or neutral, as rated by adults prior to the study. Children received a score of 1 for each toy correctly sorted. The total possible score was 12.

Results

A primary aim of this study was to examine the influence of sanctions arising from gender-linked personal standards on gender-related conduct. Hence, the first analysis reported is of children's gender-linked standards and the way in which self-regulatory control of their own gender-related conduct and that of peers changes with age. To test predictions from social cognitive theory concerning regulatory processes, a micro-level analysis of the relation between anticipatory self-evaluative reactions and gender-linked conduct is reported. Children's gender conceptions and their relations to gender-linked conduct is also examined.

Evaluative Reactions and Age

To examine age differences in children's evaluative self-reactions, children were divided into two equal groups on the basis of their age. The younger children's mean age was 37 months, and the older children's mean age was 48 months. Table 1 presents the means and standard deviations for children's affective evaluative reactions toward gender-linked conduct as a function of age, sex, and agent of the conduct.

Self-evaluative reactions.—A 2 (age) \times 2 (sex) \times 2 (gender-linked toys) analysis of variance was performed on children's self-evaluative reactions. In this and all subsequent analyses, when significant interactions were obtained, the source of the effects were examined using the Bonferroni method with an alpha of .05. There was a significant interaction for sex of subject and gender-linked toy type, $F(1,36) = 32.88, p < .0001$. This interaction was, however, qualified by a three-way interaction involving age, sex of subject, and gender-linked toys, $F(1,36) =$

TABLE 1

MEANS (and Standard Deviations) FOR CHILDREN'S EVALUATIVE REACTIONS
TOWARD GENDER-LINKED CONDUCT AS A FUNCTION OF AGE,
SEX, AND THE AGENT OF THE CONDUCT

EVALUATIVE REACTIONS	YOUNGER		OLDER	
	Girls	Boys	Girls	Boys
Self-evaluative reactions:				
Feminine-linked behavior	3.9 (.7)	3.6 (1.3)	4.3 (1.1)	1.9 (1.0)
Masculine-linked behavior	3.2 (1.2)	4.3 (1.2)	2.9 (1.6)	4.7 (.3)
Social-evaluative reactions:				
Self-reactions:				
Boys' cross-sex behavior	3.0 (1.4)	2.7 (1.2)	2.8 (1.8)	2.5 (1.5)
Girls' cross-sex behavior	3.0 (1.4)	3.4 (1.3)	2.9 (1.6)	2.0 (1.2)
Peers' reactions:				
Boys' cross-sex behavior	3.2 (1.6)	3.2 (1.7)	3.0 (2.1)	2.2 (1.3)
Girls' cross-sex behavior	3.4 (1.3)	3.1 (1.5)	2.5 (1.5)	2.0 (1.7)

8.07, $p < .006$. The interaction is depicted graphically in Figure 1.

The younger children did not differ significantly in their self-evaluative reactions for gender-linked behavior. However, as predicted, the older children exhibited differential self-evaluations for gender-linked behavior. Both boys and girls exhibited anticipatory approving self-reactions for same-sex behavior and disapproving self-reactions for cross-sex behavior.

Social evaluative reactions.—Children's reactions to peers' cross-sex behavior and their judgments of how their peers would react to such behavior were subjected to separate 2 (age) \times 2 (sex of subject) \times 2 (sex of peer) analyses of variance. There were no significant main or interaction effects. The mean for the children's evaluative reactions to peers' behavior ($M = 2.79$) and that for assumed peers' reactions ($M = 2.83$) indicated that children reacted negatively to both boys' and girls' cross-sex behavior and expected their peers to react in the same way.

Gender Knowledge

Preliminary analyses revealed no significant differences between children at Levels 1 and 2 or between children at Levels 3 and 4 on any of the dependent measures. Fagot (1985) similarly found no difference between children at Levels 1 and 2 in

their gender-linked play, and Slaby and Frey (1975) found no difference between children at Levels 1 and 2 or Levels 3 and 4 in their attention to same-sex models. Therefore, to increase the size of the sample for the group comparisons, children assigned to Levels 1 and 2 were combined to form Level I and children at Levels 3 and 4 were combined to form Level II. Children at Level I had acquired gender labeling and children at Level II had mastered at least the gender-identity and gender-stability components of gender constancy.

A 2 (gender constancy) \times 2 (sex) analysis of variance was computed on the number of toys correctly assigned by each subject to the boys', girls', and both boys' and girls' category. The only effect to attain significance was a main effect for level of gender conception, $F(1,36) = 11.26$, $p < .002$. Children at the lowest level of gender conception displayed less gender knowledge ($M = 6.00$) than did children at the higher level of gender conception ($M = 8.65$). It might be argued that children who placed a sex-typed toy, either masculine or feminine, in the box for both boys and girls were evidencing flexible gender stereotypes. Hence, an analysis in which sex-typed toys placed in the neutral category were scored correct was conducted. Although the mean scores were raised, the pattern of results was identical to those obtained in the analysis reported above.

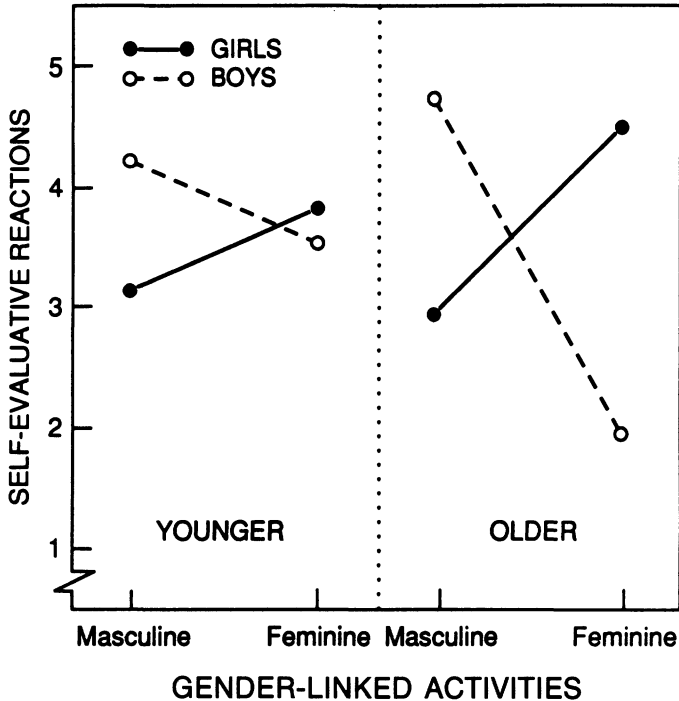


FIG. 1.—Mean self-evaluative reactions toward gender-linked behavior as a function of age, sex of subject, and gender-linked activity.

Gender-Linked Conduct

Children's gender-linked behavior was scored as the total number of seconds the children played with each of the toys. Table 2 presents the means and standard deviations for gender-linked behavior performed by boys and girls at different levels of gender constancy.

These data were analyzed by a 2 (sex) \times 2 (gender constancy) \times 2 (gender-linked behavior) analysis of variance with gender-typed behavior as the within-subjects variable. This analysis yielded a highly significant interaction for sex of subject and gender-typed activity, $F(1,36) = 31.04$, $p < .0001$. This interaction is depicted graphically in Figure 2.

Boys performed the masculine activities for a longer period of time than the feminine activities. Conversely, girls performed the feminine activities for a greater amount of time than they did the masculine activities. There was no main effect for gender constancy, nor did it interact with any other factors. A comparable analysis using all four levels of gender conception yielded the same pattern of results, as did the analysis

in which age was substituted for gender constancy level.

Cross-sex conduct.—A similar analysis of variance was performed for children's gender-linked behavior when only the cross-sex toys (highly and moderately sex-typed) were available. The main effect for sex of subject was significant, $F(1,36) = 4.51$, $p < .05$, as was the main effect for cross-sex play material, $F(1,36) = 16.98$, $p < .0001$. The interaction involving sex of subject and gender-linked activity was also significant, $F(1,36) = 5.72$, $p < .05$. This interaction is depicted graphically in Figure 3. Boys and girls did not differ in the extent of their moderately cross-sex behavior; girls, however, engaged in significantly more highly cross-sex behavior than did boys. As in the previous analyses, there was no main effect for gender constancy, nor did it interact with any of the other variables. A similar analysis using age rather than gender constancy level yielded the same pattern of results.

Relation of Theoretical Determinants to Gender-Linked Conduct

A major issue addressed in this study is the relation of children's self-evaluative

TABLE 2
MEANS (and Standard Deviations) FOR GENDER-LINKED CONDUCT PERFORMED BY
BOYS AND GIRLS AT DIFFERENT LEVELS OF GENDER CONSTANCY

GENDER-LINKED CONDUCT	GENDER CONSTANCY LEVEL			
	I		II	
	Girls	Boys	Girls	Boys
All toys:				
Feminine behavior	69.6 (70.0)	32.5 (30.9)	61.7 (50.4)	22.0 (35.4)
Masculine behavior	9.3 (12.7)	57.7 (45.0)	9.7 (16.8)	102.7 (55.9)
Cross-sex toys:				
High	24.8 (24.1)	3.3 (7.8)	44.0 (26.9)	1.2 (1.9)
Medium	49.5 (35.7)	63.2 (55.6)	44.7 (26.0)	36.9 (40.8)

reactions to their gender-linked conduct at different age levels. To assess this self-regulative function, children's gender-linked behavior was correlated with their anticipatory self-evaluative reactions associated with each gender-linked activity. These correlations, as well as those for gender conceptions and gender knowledge, are presented

in Table 3. For the older children, self-evaluative reactions were consistent predictors of gender-linked behavior. The stronger their self-approval for feminine-linked behavior, the more they engaged in traditionally feminine-typed activities and refrained from traditionally masculine-typed activities. Conversely, the more

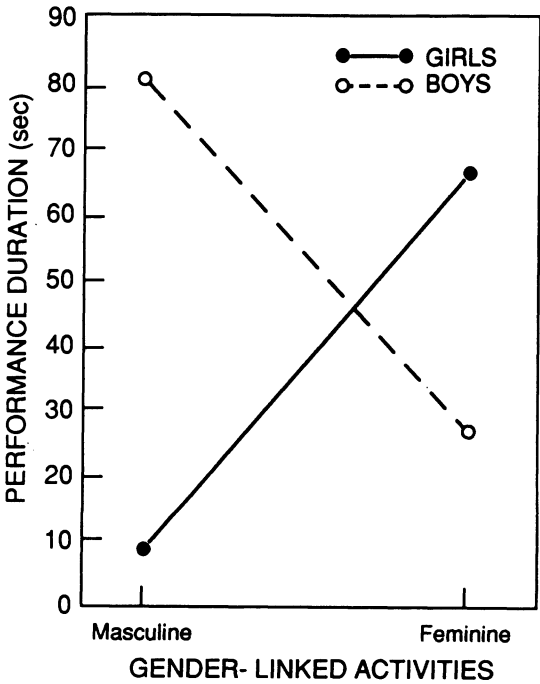


FIG. 2.—Mean duration of gender-linked behavior as a function of sex of subject and gender-linked activity.

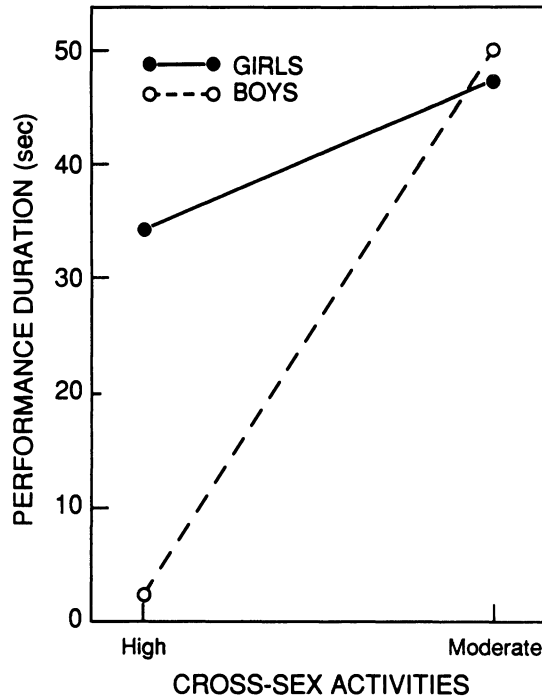


FIG. 3.—Mean duration of cross-sex behavior as a function of sex of subject

self-approving they were of masculine-linked behavior, the more they performed masculine-typed activities and shunned feminine-typed activities. However, the younger children's reactions were unrelated to either feminine-linked or masculine-linked behavior.

To evaluate the relation between children's gender conceptions and their gender-linked behavior, their gender conception scores were correlated with their duration of play with feminine-linked and masculine-linked materials (Table 3). Neither gender identity, gender stability, level of gender constancy, nor gender-linked knowledge bore any relation to gender-linked conduct. Not surprisingly, gender identity, stability, and constancy are highly interrelated.

Relation of Gender-Linked Variables to Age

A further set of correlations was computed relating age to level of gender conception and gender-linked behavior. Age was significantly correlated with children's gender-constancy score ($r = .65, p < .0001$) and their gender-knowledge score ($r = .38, p < .01$). However, age was unrelated to same-sex ($r = .07$) or opposite-sex ($r = .04$) gender-linked behavior. Age was also unrelated

to self-evaluative reactions for same-sex behavior ($r = .14$), but related to self-evaluative reactions for cross-sex behavior ($r = -.43, p < .01$). Thus, with increasing age children expressed increasingly critical self-reactions for cross-sex behavior.

Discussion

The findings of this study lend support to a social cognitive model of gender development as involving a shift from socially guided control to self-regulatory control of gender-linked behavior with increasing age. Younger children did not exhibit any differential anticipatory self-reactions to same-sex or cross-sex behavior, whereas older children reacted self-approvingly for same-sex behavior and self-critically for cross-sex behavior. This differential self-reaction was true for both older boys and girls. Thus, with increasing age children revealed a greater ability for anticipatory self-regulation of gender-linked behavior. Moreover, the older children's anticipatory self-evaluative reactions predicted their actual gender-linked behavior. They engaged in the gender-linked behavior they regarded self-approvingly but shunned cross-sex behavior that would lead them to react self-critically.

TABLE 3
CORRELATIONS BETWEEN THEORETICALLY RELEVANT DETERMINANTS AND GENDER-LINKED BEHAVIOR

	GI	GS	GC	GK	Fem. Beh.	Masc. Beh.	Fem. S-E	Masc. S-E
Gender constancy (GC) .....	.87*** .74***	.80*** .86***	. . . .81***	-.25 -.19	.14 .01	.12 -.03	.01 .16	-.18 .02
Gender identity (GI) .....		.40*** .67***	. . . .33**	-.24 -.05	-.01 -.06	-.06 .08	.14 .34*	-.16 .01
Gender stability (GS) .....			. . . .50***	-.17 .35**	.01 .02	.12 -.03	-.14 .03	-.14 -.15
Gender consistency (GC) .....				. . . -.06	. . . -.01	. . . -.10	. . ..07	. . ..16
Gender knowledge (GK)					-.13 -.02	-.09 -.06	-.08 .26	.17 .27
Feminine-linked behavior (Fem. Beh.)						-.15 -.39***	.01 .35**	-.21 -.43***
Masculine-linked behavior (Masc. Beh.)							-.30 -.56***	.04 .44***
Self-evaluative reactions toward feminine-linked behavior (Fem. S-E) .....								.12
Self-evaluative reactions toward masculine-linked behavior (Masc. S-E)								-.47***

NOTE.—The top correlation coefficients in each cell within each column are for the younger children, and the bottom correlations are for the older children. No correlation coefficients were computed between gender consistency and the other variables for the younger children because none of these children had attained gender consistency.
 * $p < .05$.
 ** $p < .025$.
 *** $p < .01$.
 **** $p < .001$.

Younger children neither exhibited any differential anticipatory evaluative self-reactions nor any linkage between anticipatory self-reactions and gender-linked conduct. Thus, with increasing age, children's gender-linked behavior came increasingly under self-regulatory control.

With expanded gender-related experiences, children's cognitive understanding of gender emerges, as do personal standards for gender-related conduct. Children showed a developmental change in which social sanctioning of gender-related behavior precedes self-sanctioning of the same activities. Even the youngest children in this study behaved toward others in a gender-stereotypic manner, despite their limited gender-linked knowledge. Consistent with the social cognitive theory of gender self-regulation, the findings of this study show that children first learn to discriminate and evaluate gender-linked conduct and later to guide their own conduct by self-evaluative reactions. The youngest children disapproved of peers' cross-sex conduct but did not apply evaluative standards to their own gender-related behavior. Irrespective of children being able to label objects as gender-linked, they were aware of the social standards associated with gender-linked objects. Most children, by 3 years of age, would have been exposed to the play material used in this study and would have learned which ones were acceptable for them and for others to play with and which ones were not (Caldera, Huston, & O'Brien, 1989).

When only cross-sex material was available, boys displayed stronger self-sanctions against cross-sex behavior than did girls. Some tried to have the stereotypic feminine toys removed. For example, when it became apparent that they were being left with "feminine" toys, one boy hastily announced to the departing experimenter, "No, I'm finished with those toys," even though he had completely shunned them. They were not at all hesitant in expressing their displeasure with the selections they were left with: "I don't like baby dolls." During the session they tried to do anything but play with the cross-sex toys. One boy flung the doll across the room and turned his back on it, getting it at least out of sight if not out of mind. Some sought to restructure their limited options by sticking to the moderately sex-typed material and transforming it into masculine tools, as, for example, using beaters in the cooking set as guns or drills. Getting boys to change diapers on the baby doll for the film-

ing of the peer videotape was no easy matter, either. As one 7-year-old boy remarked at the completion of the filming, "It's the most awful thing I have ever done." Although girls expressed much weaker self-evaluative reactions to cross-sex behavior, some of their comments were most revealing. In expressing her self-sanctions against playing with a truck, one girl explained, "My mommy would want me to play with this, but I don't want to." Her personal standards had evidently come under the sway of extrafamilial influences.

The findings do not support the view that children were striving to match their behavior to their gender labeling. From as young as 30 months children chose to play with same-sex toys. Their behavior conformed to gender-linked stereotypes regardless of level of gender conception. Children were not first labeling play material in a gender-linked manner and then engaging in gender-linked behavior. Gender-linked behavior was guided by factors other than matching gender labeling with behavior. These findings offer little support for either cognitive-developmental theory or for gender schema accounts of gendered development. Although this study supported the finding of Martin and Little (1990) linking gender stability to gender knowledge, neither gender knowledge nor gender stability predicted gender-linked behavior. Martin and Little (1990) found that gender stability was related to both children's gender knowledge and gender-linked preferences. It should be noted, however, that the present study measured gender-linked behavior, not verbalized preferences. Gender preferences are not always predictive of gender-linked conduct (Huston, 1983). Children's gender knowledge was highly correlated with age. Consistent with previous research (Bussey & Bandura, 1984; Signorella, 1989), gender knowledge was unrelated to gender behavior. This finding is not surprising since most children even at an early age are fully aware of the gender-linked stereotypes but show substantial variation in gender-linked behavior.

The relation between children's anticipatory self-evaluative reactions for gender-related behavior and their actual behavior is consistent with predictions from social cognitive theory. Awareness or knowledge of the gender linkages of objects and activities alone will not produce behavior in line with the stereotypes unless one is motivated to conform to them. What is required is a mech-

anism that links knowledge to action. The present study provides supportive evidence for a self-regulatory mechanism rooted in an internalized standard as an important guiding and motivating link between gender knowledge and gender-linked conduct. These findings add to a growing literature on the self-regulation of conduct by verifying the operation of this mechanism in children's gender development.

The findings taken as a whole reveal that from an early age children adopt traditional patterns of gender-linked conduct. Neither gender constancy nor gender knowledge appear to guide this conduct. Rather, children learn the social sanctions against cross-sex behavior and social approval for same-sex behavior and direct their own behavior accordingly. They, in turn, influence their peers by approving and disapproving reactions to conform to the prevailing social standards. Eventually, children adopt self-evaluative standards for gender-linked behavior and regulate their own conduct through anticipatory self-sanctions.

Given the influential role that self-evaluative standards play in the self-regulation of gender-linked conduct, the appropriate next stage for research is to clarify the processes by which children construct self-regulative standards from the diverse sources of social influences that impinge upon them. In this construction process they must select, weight, and integrate information from a variety of sources including parents, teachers, peers, and the electronic media in forming their gender-linked standards (Bandura, 1986). It would be expected that as children's self-regulative functions develop, their gender-linked standards would have an increasing impact on their gender-linked behavior.

Gender-linked standards do not remain static. As children move increasingly into the larger community, they become aware of the diversity of gender-linked practices. Not only is the range of their social experiences expanded, but broader social changes alter the particular constellations of attributes that become linked to gender (Spence, 1985). In recent years, for example, long flowing locks and cooking skills have become compatible with masculinity. The developmental course that self-regulative standards take is thus another issue of considerable interest. The relations obtained in the present study are based on cross-sectional data. They need to be verified in experimental and longitudinal

studies that chart the emergence and changes in self-evaluative standards and their impact on gender-linked behavior.

Despite the emphasis in recent years on gender egalitarianism, the children in this study seem to be as stereotypically sex-typed as those of yesteryear. Where there was a break away from the stereotypic pattern, it was with girls rather than boys. A number of previous studies have shown that girls are less sex-typed than boys (Katz & Boswell, 1986) and that their sex-typed behavior is more modifiable than that of boys (Katz, 1986). It is hardly surprising that children's gender-linked conduct continues to conform to stereotypic gender-linked standards. Traditionally female-related activities and characteristics are still less valued than male-related ones (Connor & Serbin, 1978; Hall & Halberstadt, 1980; Zalk & Katz, 1978). There is little incentive for boys to abandon the status and privilege accorded the male role, unless females are portrayed as possessing the same status and benefits accorded males (Bandura, Ross, & Ross, 1963; Bussey & Bandura, 1984).

Certain classes of behaviors and attributes, such as toy play and dress and hair styles, convey highly salient and concrete gender-related information that is easily realized even by very young children, so it is not surprising that gender-linked knowledge and conduct emerge in these aspects. Different clothing styles and activities remain gender linked across the life span, but stereotypic gender conceptions extend beyond these highly salient aspects to include a vast array of human activities. Stereotypic gender-role socialization has reverberating effects into adulthood. A good case in point are the psychosocial influences that shape women's beliefs in their self-efficacy for different occupational pursuits (Bandura, 1991c; Betz & Hackett, 1986; Matsui, Ikeda, & Ohnishi, 1989). Women judge themselves highly efficacious for occupations traditionally held by women but inefficacious to master the demands of vocations dominated by men, even though they have the ability for them. The instilled self-efficacy beliefs have substantial impact on their career choice and development (Lent & Hackett, 1987).

The marked sex segregation that occurs from about 3 years of age onward contributes importantly to strong adherence to stereotypic gender-linked standards (Maccoby, 1990). However, children whose parents espouse and model gender egalitarianism,

who are in educational systems that foster such standards, and who interact with peers who endorse them are more apt to develop egalitarian gender-linked standards. Unlike moral standards, where there are incentives for selective engagement of self-regulative control (Bandura, 1986, 1991a), there are no parallel incentives for disengaging stereotypic gender-linked standards. Pressure from parents alone is unlikely to achieve egalitarian standards and conduct in children unless the peer group and other significant elements in the culture endorse them (Weisner & Wilson-Mitchell, 1990). Because of the overwhelming sex segregation of children and strong pressures for conformity from the peer group, stereotypic gender-linked standards may be particularly stable and resistant to modification in the absence of sweeping social changes.

Social cognitive theory accords an influential role to institutional structures and sanctions in shaping gender roles. However, structural influences on individual behavior are mediated, in large part, through self-referent processes (Bandura, 1991b). This causal structure requires integration of sociocultural determinants with personal determinants. Studies that relate changing societal valuation of gender-linked activities to children's construction of personal standards hold considerable promise in furthering our understanding of the self-regulation of gender-role development.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1989). Social cognitive theory. In R. Vasta (Ed.), *Annals of child development: Vol. 6. Six theories of child development* (pp. 1-60). Greenwich, CT: JAI.
- Bandura, A. (1991a). Social cognitive theory of moral thought and action. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Handbook of moral behavior and development* (Vol. 1, pp. 45-103). Hillsdale, NJ: Erlbaum.
- Bandura, A. (1991b). Self-regulation of motivation through anticipatory and self-regulatory mechanisms. In R. A. Dienstbier (Ed.), *Perspectives on motivation: Nebraska Symposium on Motivation* (Vol. 38, pp. 69-164). Lincoln: University of Nebraska Press.
- Bandura, A. (1991c). *Self-efficacy: The exercise of control*. Unpublished manuscript, Stanford University, Stanford, CA.
- Bandura, A., Ross, D., & Ross, S. A. (1963). A comparative test of the status env, social power, and secondary reinforcement theories of identificatory learning. *Journal of Abnormal and Social Psychology*, 67, 527-534.
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, 88, 354-364.
- Betz, N. E., & Hackett, G. (1986). Applications of self-efficacy theory to understanding career choice behavior. *Journal of Social and Clinical Psychology*, 4, 279-289.
- Blakemore, J. E. O., LaRue, A. A., & Olejnik, A. B. (1979). Sex appropriate toy preference and the ability to conceptualize toys as sex-role related. *Developmental Psychology*, 15, 339-340.
- Bussey, K., & Bandura, A. (1984). Gender constancy, social power, and sex-linked modeling. *Journal of Personality and Social Psychology*, 47, 1242-1302.
- Caldera, Y. M., Huston, A. C., & O'Brien, M. (1989). Social interactions and play patterns of parents and toddlers with feminine, masculine, and neutral toys. *Child Development*, 60, 70-76.
- Carter, D. B., & Levy, G. D. (1988). Cognitive aspects of children's early sex-role development: The influence of gender schemas on preschoolers' memories and preferences for sex-typed toys and activities. *Child Development*, 59, 782-793.
- Connor, J. M., & Serbin, L. A. (1978). Children's responses to stories with male and female characters. *Sex Roles*, 4, 637-645.
- Edwards, V. J., & Spence, J. T. (1987). Gender-related traits, stereotypes, and schemata. *Journal of Personality and Social Psychology*, 53, 146-154.
- Fagot, B. I. (1985). Changes in thinking about early sex role development. *Developmental Review*, 5, 83-98.
- Fagot, B. I., & Leinbach, M. D. (1989). The young child's gender schema: Environmental input, internal organization. *Child Development*, 60, 663-672.
- Fagot, B. I., Leinbach, M. D., & Hagan, R. (1986). Gender labeling and the adoption of sex-typed behaviors. *Developmental Psychology*, 22, 440-443.
- Grusec, J. E., & Kuczynski, L. (1977). Teaching children to punish themselves and effects on subsequent compliance. *Child Development*, 48, 1296-1300.
- Hall, J. A., & Halberstadt, A. G. (1980). Masculinity and femininity in children: Development of the Children's Personal Attributes Questionnaire. *Developmental Psychology*, 16, 270-280.
- Huston, A. C. (1983). Sex typing. In E. M. Hetherington (Ed.), P. H. Mussen (Series Ed.), *Handbook of child psychology. Socialization*,

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- personality, and social development (Vol. 4, pp. 387–467). New York: Wiley.
- Katz, P. A. (1986). Modification of children's gender-stereotyped behavior: General issues and research considerations. *Sex Roles*, **14**, 591–602.
- Katz, P. A., & Boswell, S. (1986). Flexibility and traditionality in children's roles. *Genetic, Social, and General Psychology Monographs*, **112**, 105–147.
- Kohlberg, L. (1966). A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E. E. Maccoby (Ed.), *The development of sex differences* (pp. 82–173). Stanford, CA: Stanford University Press.
- Lamb, M. E., & Roopnarine, J. L. (1979). Peer influences on sex-role development in preschoolers. *Child Development*, **50**, 1219–1222.
- Lent, R. W., & Hackett, G. (1987). Career self-efficacy: Empirical status and future directions. *Journal of Vocational Behavior*, **30**, 347–382.
- Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist*, **45**, 513–520.
- Marcus, D. E., & Overton, W. F. (1978). The development of cognitive gender constancy and sex role preferences. *Child Development*, **49**, 434–444.
- Martin, C. L., & Halverson, C. F. (1981). A schematic processing model of sex typing and stereotyping in children. *Child Development*, **52**, 1119–1134.
- Martin, C. L., & Little, J. K. (1990). The relation of gender understanding to children's sex-typed preferences and gender stereotypes. *Child Development*, **61**, 1427–1439.
- Matsui, T., Ikeda, H., & Ohnishi, R. (1989). Relations of sex-typed socializations to career self-efficacy expectations of college students. *Journal of Vocational Behavior*, **35**, 1–16.
- Perry, D. G., & Bussey, K. (1977). Self-reinforcement in high- and low-aggressive boys following acts of aggression. *Child Development*, **48**, 653–658.
- Perry, D. G., Perry, L. C., Bussey, K., English, D., & Arnold, G. (1980). Processes of attribution and children's self-punishment following misbehavior. *Child Development*, **51**, 545–551.
- Rheingold, H. L., & Cook, K. V. (1975). The content of boys' and girls' rooms as an index of parents' behavior. *Child Development*, **46**, 459–463.
- Signorella, M. L. (1987). Gender schemata: Individual differences and context effects. In L. S. Liben & M. L. Signorella (Eds.), *Children's gender schemata* (New Directions for Child Development, No. 38, pp. 23–37). San Francisco: Jossey-Bass.
- Signorella, M. L. (1989, April). *Gender-role attitudes versus knowledge in the study of children's gender schemas*. Paper presented at the meeting of the Society for Research in Child Development, Kansas City.
- Slaby, R. G., & Frey, K. S. (1975). Development of gender constancy and selective attention to same-sex models. *Child Development*, **46**, 849–856.
- Smetana, J. G., & Letourneau, K. J. (1984). Development of gender constancy and children's sex-typed free play behavior. *Developmental Psychology*, **20**, 691–696.
- Spence, J. T. (1985). Gender identity and its implications for the concepts of masculinity and femininity. In T. B. Sonderegger (Ed.), *Nebraska Symposium on Motivation* (Vol. 32, pp. 59–95). Lincoln: University of Nebraska Press.
- Stangor, C., & Ruble, D. N. (1987). Development of gender role knowledge and gender constancy. In L. S. Liben & M. L. Signorella (Eds.), *Children's gender schemata* (pp. 5–22). San Francisco: Jossey-Bass.
- Weinraub, M., Clemens, L. P., Sockloff, A., Ethridge, T., Gracely, E., & Myers, B. (1984). The development of sex role stereotypes in the third year: Relationships to gender labeling, gender identity, sex-typed toy preferences and family characteristics. *Child Development*, **55**, 1493–1503.
- Weisner, T. S., & Wilson-Mitchell, J. E. (1990). Nonconventional family life-styles and sex typing in six-year-olds. *Child Development*, **61**, 1915–1933.
- Zalk, S. R., & Katz, P. A. (1978). Gender attitudes in children. *Sex Roles*, **4**, 349–357.
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, **81**, 329–339.