

Same-Sex and Cross-Sex Siblings: Activity Choices, Roles, Behavior, and Gender Stereotypes¹

Zolinda Stoneman² and Gene H. Brody²

Program for the Study of Competence in Children and Families, University of Georgia

Carol E. MacKinnon

University of North Carolina, Greensboro

Forty same-sex and cross-sex school-aged sibling pairs were observed in their homes during self-selected activities. The sex role learning index (SERLI) and a sex-typing room analysis were administered for the younger siblings, and maternal questionnaire information was obtained. Sibling gender constellation was associated with reliable differences in activity choices during the unstructured observations. Male dyads interacted less than other sibling groups, while older sisters in female dyads engaged in the most teaching. Older female siblings, regardless of the gender of the younger sibling, assumed the manager role frequently. Dyads containing an older girl also exhibited the greatest role asymmetries. Affective differences related to gender constellation were also noted. Younger girls with older brothers and younger boys with older sisters evidenced the least gender stereotyping.

In recent years, researchers have demonstrated renewed interest in the role of siblings in child development. It has become increasingly evident that brothers and sisters exert influences on each other that are different from the influences exerted by other powerful social agents, such as parents and peers (Hartup, 1980; Lamb, 1982). Most of the observational research on

¹This project was supported in part by HD-06016 awarded by the National Institute of Child Health and Human Development to Emory University and Georgia State University, and Grant BNS 84-15505 from the National Science Foundation.

²Reprints may be obtained from either the first or second author at the Department of Child and Family Development, Dawson Hall, University of Georgia, Athens, Georgia 30602.

siblings has focused on infants and preschool-aged children (Abramovitch, Corter, & Lando, 1979; Abramovitch, Corter, & Pepler, 1980; Dunn & Kendrick, 1981; Lamb, 1978a, b; Samuels, 1980). Several studies, however, have begun to investigate the interactions of school-age siblings (Brody, Stoneman, & MacKinnon, 1982, in press; Brody, Stoneman, MacKinnon, & MacKinnon, 1985; Bryant & Crockenberg, 1980; Minnett, Vandell, & Santrock, 1983; Stoneman, Brody, & MacKinnon, 1984).

One important area of inquiry for sibling researchers concerns the contexts in which siblings choose to interact. A contextual approach to sibling relationships (Brody & Stoneman, 1986) posits that sibling interaction patterns cannot be understood apart from the contexts in which they occur. Siblings conform their behavior to existing contexts and contribute to the creation of new contexts through their own actions and choices. Activities in which siblings engage when they play together at home constitute one important contextual parameter. For same-sex siblings, differences between the activities selected by male and female sibling pairs have been documented (Stoneman et al., 1984). Little is known, however, about the activities selected by sibling dyads containing both a boy and a girl. Therefore, the first purpose of the current study was to examine the activities in which same-sex and cross-sex siblings engaged while playing together at home.

A second important research question concerns the role relationships that occur during sibling interactions. In essence, a *role* is a patterned sequence of actions performed in an interactive or social context (Stoneman & Brody, 1982). These roles, it can be argued, have important developmental outcomes (Bargh & Schul, 1980; Bronfenbrenner, 1979; Zajonc & Markus, 1975). Learning and enacting a role not only teaches the child about that specific role, but also about the complementary roles. Effective social exchange requires the child to know the expectations of complementary roles in order to engage in smooth, predictable social interactions. Complementary roles such as teacher/learner, manager/manager, and helper/helpee, as well as roles such as playmate and interactor, have been described in the sibling literature as important to sibling socialization (Weisner & Gallimore, 1977). Distinct role asymmetries between older and younger siblings have been detected while same-sex siblings played a broad game together (Brody et al., 1982), as well as during a variety of self-selected activities (Brody et al., 1985; Stoneman et al., 1984). Older siblings tend to assume teacher and manager roles, while their younger brothers and sisters assume less dominant learner and manager roles.

Gender differences in the role relationships of school-aged siblings have been found in several studies. In general, female sibling pairs play together more than males (Brody et al., 1985; Stoneman et al., 1984). Among same-sex siblings, older girls assume a teacher role more than boys, even after dif-

ferential rates of interaction are equated (Brody et al., 1985). Extant research on school-aged cross-sex siblings (Cicirelli, 1975, 1976; Minnett et al., 1983) has utilized structured laboratory tasks, thus providing little information on naturally occurring role patterns. Therefore, the second purpose of the current study was to extend the extant literature on the role enactments of school-aged siblings by observing the role relationships and behaviors that characterize the in-home interactions of same-gender and cross-gender siblings.

One area that has received considerable attention in the sibling literature has been the effects of sibling status on sex role development (cf. Sutton-Smith & Rosenberg, 1970). This research has generally followed one or the other of two competing theoretical perspectives. One group of researchers has focused on sibling modeling of stereotypical sex role behavior; consequently, they have predicted that children in same-sex sibling pairs should be the most stereotypically sex typed, while children from cross-sex sibling pairs should be more androgynous. The classic study reflecting this approach was conducted by Brim (1958), who reanalyzed Koch's data (1955) on 384 sibling pairs. Brim argued that in the relationship between two siblings there is an assimilation of roles in which elements of the role of one child are incorporated into the role structure of the other. Thus, there is a "spillover" of role elements into the behavior of each child, whether or not the elements are sex appropriate for the specific child. Consistent with this argument, Brim found that girls with brothers were rated as possessing more masculine traits (but not fewer feminine traits) than girls with sisters. Similarly, boys with older sisters possessed feminine traits to a higher degree than boys with brothers. Brim noted that girls' acquisition of masculine traits when they have brothers seems to add to their overall behavioral repertoire, diluting, but not displacing, more feminine characteristics. Boys with sisters, however, seemed to have feminine traits replacing masculine ones. Findings from other researchers have provided at least partial support for Brim's position. Bigner (1972), studying preschool children, Rosenberg and Sutton-Smith (1964), studying school-aged children, and Lamke, Bell, and Murphy (1980) and Rosenberg and Sutton-Smith (1968), studying college undergraduates, have generally found stronger own-sex interests and sex role preferences for children with same-sex siblings.

Others have argued that the sibling modeling described by Brim (1958) occurs infrequently, and that, in the majority of instances, same-sex siblings become dissimilar on dimensions such as sex typing in order to avoid comparison and competition (Schachter, 1982). Schachter (1982) proposed a rivalry-defense hypothesis, which predicts that same-sex siblings deidentify (become different) more than opposite-sex siblings, because of the heightened sibling rivalry that accompanies the closeness in desires and interests that

occur for children of the same gender. Thus, same-sex siblings tend to develop dissimilar interests and characteristics in order to decrease rivalry, competition, and unfavorable social comparisons. This theoretical orientation posits processes similar to those posed by Tesser's (1980) self-esteem maintenance model. Leventhal (1970) provided empirical support for sibling sex role deidentification, as did Grotevant (1978). The third purpose of the current study was to provide information on sex-typing parameters in same-sex and cross-sex sibling pairs. Emphasis is placed on the sex role characteristics of the younger siblings, since past research indicates that sibling status has most impact upon the gender stereotypes of later-born children (Brim, 1958).

Thus, the overall goal of this study was to paint a descriptive picture of the in-home activity selections, interactive roles and behaviors, and gender stereotyping of school-aged same-sex and cross-sex siblings. A multimethod research procedure was utilized to achieve this goal.

METHOD

Subjects

Forty sibling dyads were observed in their homes. The four sibling gender combinations were equally represented in the sample. Older siblings ranged in age from 7 to 9 years, while younger siblings were 4.5 to 6.5 years of age. Each pair of siblings was separated in age by at least two years, but not more than three years. All siblings were from two-child, Caucasian, middle-class families. Single-parent, adoptive, and blended families were not included. Families were recruited through direct telephoning. Approximately 90% of all families contacted agreed to participate.

Procedure

Each sibling dyad was observed in their home during unstructured play. In addition, several self-report instruments were administered. Each of these procedures is described below.

Naturalistic Observations. During naturalistic observations, the children were asked to play like they usually did when observers were not present. The only restriction placed on the children was that they not leave their yard. Each observation lasted approximately 50 minutes. Only the final 40 minutes were utilized for actual data collection. The initial period allowed children to become actively involved in an activity and to become accustomed to the

observers. The children were told that the observers wanted to learn about things that children did when they were at home. One observer followed each child around the house and yard, maintaining a comfortable distance. Observers did not interact with the children, avoiding eye contact and ignoring questions.

A 10-second interval-recording procedure was used. Observers coded the occurrence or nonoccurrence of each role and behavior defined in Table I. Three roles and one behavior (playmate, interactor, observer, and solitary activity) were mutually exclusive, with the more interactive roles taking priority over less interactive roles and behavior. The remaining roles and behaviors were not mutually exclusive. Any code could only be recorded once in a given observation interval. During each interval, the observer also noted the activity in which the child was engaged. This coding system has been demonstrated to be reliable and sensitive to differences in sibling gender (Brody et al., 1982, 1985; Stoneman et al., 1984), age of sibling pair (Brody

Table I. Operational Definitions for Each Role and Behavior

Category	Definition
Roles	
Teacher	The child explains, models, or demonstrates how to perform a certain task; provides new information about labels of objects or events; attributes of objects, cause and effect relationships; or responds to a request for information.
Learner	The child attends to and/or complies with the teaching attempt of another or the child asks a question for the purpose of gaining information about how to perform a task or activity.
Manager	The child commands or requests (verbally or nonverbally) his/her sibling to perform (or not to perform) a certain behavior. The child asserts his/her own rights, thus attempting to influence the behavior of another child.
Managee	The child is the target of managing and complies with the managing attempt of his/her sibling.
Helper	Any attempt to offer assistance of help to another.
Helpee	The child is the target of assistance and allows his/her sibling to aid him or her.
Playmate	To engage to joint play with a sibling.
Interactor	To converse with a sibling without being engaged in joint play.
Observer	To watch or observe a sibling without speaking to or interacting with that sibling.
Behavior	
Solitary	To engage in an activity by oneself; not talking or interacting with another. Children can be playing with same or different materials as long as no interaction takes place.
Positive verbal	Verbally praising or showing appreciation for another.
Negative verbal	Name calling, yelling, sarcasm, teasing, or crying.
Positive physical	Touch with affection, pat, or hug another.
Negative physical	Physical contact with another done in a hurtful manner such as a hit, slap, or push.

et al., 1985), and context (Brody et al., in press; Stoneman & Brody, 1983). This coding system has been reliably utilized to collect information on sibling activities during naturalistic observations (Stoneman et al., 1984).

Reliability. Observers were trained through the use of videotaped interactions of siblings until interval-by-interval agreement on each role and behavior exceeded 84%. Intervals in which a role or behavior did not occur were not included in reliability calculations. Following achievement of acceptable reliabilities using videotapes, each observer coded behavior in pilot homes to ensure that agreement levels during live coding exceeded 84% as well. During the study, observers met weekly to code new videotapes in order to monitor reliability. Interobserver reliability on activities was obtained through an interval comparison of data collected by two independent observers who simultaneously coded siblings engaged in joint activities. Interobserver agreement on all activity categories consistently exceeded 90%.

Sex Role Learning Index and Room Analysis

Each younger sibling was administered the sex role discrimination subscale (SRD) of the Sex Role Index (SERLI), which assesses the child's awareness of gender stereotypes of own-sex and opposite-sex objects (see Edelbrock & Sugawara, 1978, for validity and reliability information). Two scores are generated from this subtest, the "SRD Own" score, which focuses on objects traditionally associated with the child's own gender, and the "SRD Opposite" score, which refers to the child's categorization of objects stereotyped as appropriate for the opposite sex.

A sex-typing analysis of the younger siblings' room was performed, utilizing the procedure described by Rheingold and Cook (1975). All siblings who participated in the study had their own rooms. Before each room analysis, the younger sibling was asked to point out any toys or other objects in the room that did not belong to him/her. These items were deleted from the analysis.

Maternal Questionnaire

Each mother was asked to complete a short questionnaire. Embedded in the questionnaire were two questions of interest. First, the mothers were asked, "How important is it that your children play together?" A 7-point scale ranging from *not very important* to *very important* was used for this question. Additionally, the mothers were asked to choose three toys that they would like for their younger child to receive as a gift. A list of 12 toys, in-

cluding 3 toys that were female sex typed (sewing board, doll, kitchen set) and 3 toys that were male sex typed (car/truck, airplane and basketball), was provided. The remaining toys were not stereotyped as either masculine or feminine.

Before using the questionnaire in this study, it was administered to 30 mothers of school-aged siblings. Each mother completed the questionnaire twice, approximately two weeks apart. Responses on the play importance question between Time 1 and Time 2 were highly correlated ($r = .87, p < .01$). Similarly, maternal responses on the toy choice question rarely differed by more than one item from Time 1 to Time 2.

RESULTS

Activities Selected by the Siblings

The proportion of intervals during which each pair engaged in the following activities were computed: board games, competitive physical activities (e.g., basketball, football), noncompetitive physical activities (e.g., swinging, swimming), toy play (activities involving any toy, with the exception of dolls and board games), doll play/playing "house," and art (coloring, drawing, pasting). These categories were similar to those utilized by Stoneman et al. (1984) in a previous naturalistic study of sibling activities. Data were analyzed using tests for differences between proportions.

Children engaged in a diverse array of activities during the observations for this study. For example, siblings made Valentines; played basketball and kickball; climbed in tree houses; played with trucks, cars, battleships, and dolls; played card games; ran around the yard; talked about school; put puzzles together; ate a snack; and played video games. Thus, the activities observed in this study reflect the ecological contexts in which siblings interact when they are at home. Means reported in the next are the percent of interactive intervals (intervals in which the children played together) during which a specific type of activity occurred.

Female pairs engaged in more noncompetitive physical activity ($M = 33.70$) than either male ($M = 3.25$) or older male/younger female siblings ($M = 10.00, ps < .05$). Older female/younger male dyads did not differ from any of the other groups in their proportion of noncompetitive physical activity ($M = 15.25$). Same-sex pairs engaged in more competitive physical activities (M males = 6.73, M females = 5.70) than older sister/younger brother pairs ($M = .00$), while older brother/younger sister pairs did not differ from the other groups ($M = 2.80$).

Sibling pairs containing an older sister played with dolls and played house (M females = 13.20, M older female/younger males = 10.00) more frequently than pairs containing an older brother (M males = .00, M older male/younger females = 3.33). Older male/younger female siblings engaged in more art activities (M = 22.00) than either group of same-sex siblings ($ps < .05$, M males = 4.13, M females = .00), while older female/younger male pairs did not significantly differ from the other sibling groups (M = 10.00). Male pairs played with board games less often (M = .00) and toys more often (M = 65.75) than any other sibling group ($ps < .05$, board games: M female/male = 22.8, M male/female = 20.20, M females = 18.70; toy play: M female/male = 17.13, M male/female = 25.70, M female = 28.50).

Activities that occurred when the younger and older siblings were playing together were rated by six judges (three males and three females) as to whether they were female-sex-typed, male-sex-typed, or neutral activities. Raters were blind as to the gender composition of the sibling pairs engaged in the activities. Activities that at least five of the six judges rated as being either female or sex male typed were used to calculate the proportion of intervals that each sibling pair engaged in female and male activities. Female activities included such activities as play with dolls and paper dolls, playing dress-up, playing school, playing house, and making Valentines; male activities included play with toy guns, football, soccerball, army, play with cars and trucks, and battleships. Table II presents mean proportions of female and male activities for each sibling group.

During interactive play, male sibling dyads engaged in significantly more male-sex-typed activities than did any other sibling group. Older male/younger female dyads engaged in more male-stereotyped activities than did female dyads. Female and older female/younger male siblings did not differ in their frequency of female-sex-typed activities, but both of the aforementioned groups participated in female activities more than male dyads (all $ps < .05$).

Analysis of Sibling Interaction

Observational data for the sibling dyads, the older siblings, and the younger siblings were analyzed using 2 (older gender) \times 2 (younger gender)

Table II. Mean Proportion of Intervals During Which the Siblings Engaged in Female and Male Sex-Typed Activities

Interactive play	Older female sibling		Older male sibling	
	Younger male	Younger female	Younger male	Younger female
Feminine activities	.21	.19	.00	.10
Male activities	.03	.00	.53	.19

analyses of variance. Duncan's multiple range tests were used for all post hoc analyses.

Three observational measures (playmate, interactor, and solitary activity) generated identical frequency data for the older and younger siblings. Thus, one observer's record of these measures was arbitrarily selected for analysis for each sibling pair. These data represented roles assumed simultaneously by both members of the sibling dyad. Significant Older Gender \times Younger Gender interactions were detected for all three of the aforementioned roles (means, F values, and p values are presented in Table III). Same-sex male sibling dyads spent less time as playmates and engaged in more solitary activity than did any other sibling group. Sibling pairs composed of an older sister and a younger brother assumed an interactor role with each other less than other sibling pairs.

A role asymmetry measure for each sibling dyad was created by summing the frequency of teacher, manager, and helper roles enacted by the older sibling, and dividing by the combined sum of the aforementioned roles for the older and younger siblings. Thus, if both siblings enacted these dominant roles with equal frequency, the role asymmetry measure would be .50. As the role asymmetry ratio shifted in favor of the older sibling's frequency of dominant role enactments, the measure would approach 1.00. Sibling pairs in which the older child was female exhibited greater role asymmetries ($M = .69$) than did pairs containing an older male child [$M = .49$; $F(1, 36) = 6.91$, $p < .01$]. No younger gender main effect or Older Gender \times Younger Gender interaction was detected for the role asymmetry measure.

Older Siblings' Roles and Behaviors.

An Older Gender \times Younger Gender interaction was detected for the older siblings' assumption of the teacher role ($F(1, 36) = 4.18$, $p < .05$), and an older gender main effect was found for the manager role [$F(1, 36) = 10.82$, $p < .002$]. Older girls taught their younger sisters more frequently than older siblings in any other sibling group (see Table IV for means). Older girls managed their siblings more often than did older brothers (M older girls = 15.10, M older boys = 5.90).

An Older Gender \times Younger Gender interaction was found for the older siblings' use of positive verbals [$F(1, 36) = 4.12$, $p < .05$], and a younger gender main effect emerged for positive physical contact [$F(1, 36) = 7.03$, $p < .01$]. Older brothers with younger sisters emitted the most and same-sex male and female siblings emitted the fewest positive verbals (means are presented in Table IV). Older girls in same-sex pairs emitted fewer positive verbals than did older siblings in either of the cross-gender sibling groups (means are presented in Table IV). Older girls engaged in more positive physical contact with younger siblings than did older boys (M older girls = .60, M older boys = .05). No other significant differences were detected.

Table III. Mean Frequencies of Playmate, Interactor, and Solitary Activity for the Sibling Pairs (Older Gender x Younger Gender Interactions)

	Older female sibling		Older male sibling		F ^a	p
	Younger male	Younger female	Younger male	Younger female		
Playmate	88.90	89.95	47.35	82.40	4.11	.05
Interactor	2.50	13.70	8.50	11.45	4.09	.05
Solitary activity	65.80	35.25	100.55	65.50	4.84	.03

^adf = 1/36.

Table IV. Mean Frequencies of Roles and Behaviors for the Older Siblings

	Older female siblings		Older male siblings	
	Younger male	Younger female	Younger male	Younger female
Roles				
Teacher	3.80	13.30	5.10	3.60
Learner	5.30	6.50	7.10	4.70
Manager	14.20	15.80	5.10	6.70
Managee	1.90	2.80	1.20	2.70
Helper	.30	1.20	.30	.80
Helpee	.00	.10	.00	.00
Observer	.10	.30	.40	.70
Behavior/affect				
Positive verbal	14.10	.10	2.20	6.20
Negative verbal	1.30	.80	1.00	.60
Positive physical	.10	.70	.00	.50
Negative physical	1.30	2.00	.20	1.00

Younger Siblings' Roles and Behavior. Findings for the younger siblings' roles and behavior across gender composition groupings closely parallel the aforementioned findings for older siblings. An Older Gender \times Younger Gender interaction was found for the younger child's acceptance of the learner role [$F(1, 36) = 3.99, p < .05$], and a main effect for older sibling gender emerged for the managee role [$F(1, 36) = 4.29, p < .05$]. Younger girls with older sisters assumed the learner role more frequently than did younger siblings in any other group (see Table V for means), while younger siblings with older sisters assumed the managee role more frequently ($M = 6.32$) than children with older brothers ($M = 3.10$).

An Older Gender \times Younger Gender interaction was found for the use of positive verbals by the younger siblings [$F(1, 36) = 3.97, p < .05$], and a main effect for older gender was found for the use of positive physicals [$F(1, 36) = 4.57, p < .04$]. Younger boys with older sisters used more positive verbals than any other group of younger siblings. Younger girls with older brothers evidenced the next highest use of positive verbals, while younger children in the two same-sex sibling groups emitted the fewest positive verbals (means are presented in Table V). Children with older sisters engaged in more positive physical contact with their siblings ($M = .40$) than did siblings with older brothers ($M = .00$). No other significant effects emerged.

Relationships Between Older and Younger Siblings' Roles/Behaviors

Pearson product moment correlations were used to examine the relationships between the roles/behaviors emitted by the older and younger siblings in each dyad. These correlations are presented in Table VII.

Table V. Mean Frequencies of Roles and Behaviors for the Younger Siblings

	Older female sibling		Older male sibling	
	Younger male	Younger female	Younger male	Younger female
Roles				
Teacher	1.44	3.50	5.10	2.90
Learner	5.89	17.60	7.00	5.90
Manager	7.22	8.20	6.50	7.20
Manatee	6.44	6.20	3.00	3.20
Helper	.00	.20	.00	.00
Helpee	.33	1.30	.40	1.00
Observer	2.22	4.80	3.20	1.40
Behavior/affect				
Positive verbal	17.90	.40	1.40	6.10
Negative verbal	1.30	.80	1.50	1.50
Positive physical	.30	.50	.00	.00
Negative physical	.40	.60	.10	1.10

Younger Siblings' SERLI Scores and Room Analysis Findings

Older Sibling Gender \times Younger Sibling Gender analyses of variance were performed on the younger siblings' SRD-Own and SRD-Opposite scores. An Older Gender \times Younger Gender interaction was detected for the SRD-Own scores. Girls with older brothers had lower SRD-Own scores ($M = 85.0$) than did the younger siblings in any of the other gender combinations [$F(1, 36) = 7.15, p < .01$; M boys with older sisters = 93.0, M girls with older sisters = 99.0, boys with older brothers = 98.0, $p < .05$]. Boys with older sisters had lower SRD-Opposite scores ($M = 79.00$) than the younger siblings in the other gender composition groups [M boys with older brothers = 89.0, M girls with older brothers = 92.0, M girls with older sisters = 96.0; $F(1, 36) = 4.01, p < .05$].

Table VI. Correlations Between the Older Siblings' Roles and Behaviors and Those of the Younger Siblings

Role/behavior	<i>r</i>	<i>p</i>
Teacher	.23	n.s.
Learner	.35	.03
Manager	.66	.0001
Manatee	.40	.01
Helper	-.05	n.s.
Helpee	-.06	n.s.
Positive verbal	.97	.0001
Negative verbal	.64	.0001
Positive physical	.51	.0008
Negative physical	.65	.0001
Observer	.09	n.s.

Information from the Rheingold and Cook (1975) room analysis was collapsed by adding the classes of items designated as being typical for each sex, thus creating a summed score for male items and a summed score for female item for each room. Vehicles, animal furnishings, educational/art materials, spatial-temporal objects, sports equipment, and toy animals were summed to create the score for male items; dolls, floral furnishings, and ruffles were summed to create the female item score. These designations for item classes were taken directly from the findings reported by Rheingold and Cook (1975).

Younger boys with older brothers had significantly more male items in their room ($M = 40.5$) than did younger boys with older sisters ($M = 28.6$), $t(18) = 2.11$, $p < .05$. No significant differences were detected for girls.

Maternal Perceptions of Importance of Sibling Play and Toy Selection

An Older Gender \times Younger Gender analysis of variance was performed on maternal ratings of how important they believed it was for their children to spend time playing together. Mothers of same-sex sibling pairs believed sibling play to be more important (M girls = 6.0, M boys = 5.7) than did mothers of cross-sex siblings (M older girls/younger boys = 4.7, M older boy/younger girl = 4.7; $F(1, 36) = 8.70$, $p < .005$]. Proportionally more mothers selected opposite-gender toys for the younger sibling when they had older same-sex siblings than when the older siblings were of a different gender (M older brother/younger sister = .00, M older sister/younger brother = .00, M male dyads = .20, M female dyads = .30, $p < .05$).

DISCUSSION

These findings paint a complex descriptive picture of the relationships of same-sex and cross-sex school-aged siblings. The examination of sibling-activity selections, which constituted the first purpose of the study, yielded reliable differences among siblings gender groupings. As would be expected, activities selected by same-sex siblings were the most stereotypically sex typed. In cross-sex siblings, the sex typing of activities tended to be influenced most by the gender of the older child. Thus, cross-sex siblings with an older sister engaged in more female activities while little girls with older brothers engaged in more male activities. This became particularly obvious when specific classes of activities were examined. For example, little boys with older brothers never played with dolls or played house, while boys with older sisters engaged in these female activities as frequently as the pairs containing two girls.

Same-sex siblings engaged in the highest frequency of competitive physical activities. This is consistent with the heightened competitiveness theorized to accompany the similarity in desires and interests that occur for children of the same gender (Schachter, 1982; Tesser, 1980).

The second purpose of this study was to study role relationships in same-sex and cross-sex siblings. Past research (Brody et al., 1985; Stoneman et al., 1984) has demonstrated that male sibling dyads interact less than female dyads, and the current findings suggest that male dyads interact less than cross-gender siblings as well. This was true even though it was more important to mothers of same-sex siblings (as compared with mothers of cross-sex siblings) that their children spend time together. Older siblings in female dyads assumed the teacher role more than other older siblings, which is consistent with the extant sibling literature (Brody et al., 1985; Cicirelli, 1976; Minnett et al., 1983). It is interesting, however, that girls with younger brothers evidenced low levels of teaching. It appears that the assumption of the teacher role is dependent on both the gender of the older child and of the younger child. It is plausible that the increased similarity between two sisters (as opposed to an older sister and younger brother) makes the teacher/learner role relationship more likely. It is also possible that the activities selected by female sibling dyads elicit higher levels of teaching. Older sisters engaged in frequent managing, regardless of the gender of the younger sibling. Similarly, sibling dyads containing an older sister evidenced greater role asymmetries than dyads with older brothers.

Differences emerged in the affective tone of interactions across the four sibling groups. In general, siblings in older female/younger male dyads emitted the most positive verbals, while same-sex dyads emitted the fewest. It is possible that same-sex sibling interactions are less positive as a result of heightened social comparison/competition between siblings who are more similar. This would be consistent with several sibling theories that predict less close relationships between children who are more similar (Schachter, 1982; Tesser, 1980). Siblings in dyads in which the older child was female engaged in more positive physical contact than did those in dyads containing older brothers. It is plausible that gender-related cultural norms for positive physical contact, which sanction such contact for females and discourage it for males, may be responsible for this difference. Affective behaviors of younger and older siblings were very strongly correlated. Thus, as one sibling within a pair demonstrated positive or negative affect, the other sibling generally reciprocated.

An examination of the younger siblings' gender stereotypes and room contents constituted the third purpose for this study. Girls with older brothers evidenced less gender stereotyping of objects associated with their own sex, while boys with older sisters demonstrated less gender stereotyping of

opposite-sex objects. These data support Brim's (1958) notion of sibling modeling, which predicts the younger children in same-sex sibling pairs should be the most stereotypically sex typed, while children from cross-sex pairs should be more androgynous. The ecology of younger male siblings' rooms varied according to the gender of the child's older sibling. Boys with older brothers had a more stereotypically sex-typed physical environment than did boys with old sisters. No differences were detected for girls. Rheingold and Cook (1975) stress that their measure of room contents does not provide information on the source of gender differences. In other words, it is not possible to know whether the parents, the siblings themselves, or others were responsible for selecting the furnishing and play materials in the children's room. Since mothers' choices of toys for their younger children were not consistent with the actual sex typing of the children's rooms, it appears possible that the children themselves may have exerted an influence in selecting their own toys and room furnishings.

The goal of this study was to provide a broad description of sibling relations in same-sex and cross-sex dyads. Descriptive research such as the present study, is only the first step in the research process, but it forms the foundation for subsequent experimental studies. This study documented differences in sibling roles and behaviors, activity selections, and gender stereotyping that varied according to gender constellation. Additional research will be needed to further understand the processes through which these gender-related differences emerge.

REFERENCES

- Abramovitch, R., Corter, C., & Lando, B. Observations of sibling interactions in the home. *Child Development*, 1979, 50, 997-1003.
- Abramovitch, R., Corter, C., & Pepler, D. J. Observations of mixed-sex sibling dyads. *Child Development*, 1980, 51, 1268-1271.
- Bargh, J. A., & Schul, Y. On the cognitive benefits of teaching. *Journal of Educational Psychology*, 1980, 72, 593-604.
- Bigner, J. J. Sibling influence on sex-role preference of young children. *The Journal of Genetic Psychology*, 1972, 121, 271-282.
- Brim, O. J. Family structure and sex role learning by children: A further analysis of Helen Koch's data. *Sociometry*, 1958, 21, 1-16.
- Brody, G. H., & Stoneman, Z. Contextual issues in the study of sibling socialization. In J. J. Gallagher & P. M. Vietze (Eds.), *Families of handicapped persons: Research, programs, and policy issues*. Baltimore, Md.: Paul H. Brookes, 1986.
- Brody, G. H., Stoneman, Z., & MacKinnon, C. Role asymmetries in interactions among school-aged children, their younger siblings, and their best friends. *Child Development*, 1982, 53, 1364-1370.
- Brody, G. H., Stoneman, Z., & MacKinnon, C. E., & MacKinnon, R. Role relationships and behavior among preschool-aged and school-aged sibling pairs. *Developmental Psychology*, 1985, 21, 124-129.

- Brody, G. H., Stoneman, Z., & MacKinnon, C. E. Contributions of maternal child-rearing practices and play contexts to sibling interactions. *Journal of Applied Developmental Psychology*, in press.
- Bronfenbrenner, V. *The ecology of human development*. Cambridge, Mass.: Harvard University Press, 1979.
- Bryant, B. K., & Crockenberg, S. B. Correlates and dimensions of prosocial behavior: A study of female siblings with their mothers. *Child Development*, 1980, *51*, 529-544.
- Cicirelli, V. G. Effects of mother and older sibling on the problem-solving behavior of the younger child. *Developmental Psychology*, 1975, *11*(6), 749-756.
- Cicirelli, V. G. Mother-child and sibling-sibling interactions on a problem-solving task. *Child Development*, 1976, *47*, 588-596.
- Dunn, J., & Kendrick, C. Social behavior of younger siblings in the family context: Differences between same-sex and different-sex dyads. *Child Development*, 1981, *52*, 1265-1273.
- Edelbrock, C., & Sugawara, A. I. Acquisition of sex-typed preferences in preschool-aged children. *Developmental Psychology*, 1978, *14*, 614-623.
- Grotevant, H. D. Sibling constellations and sex-typing of interests in adolescence. *Child Development*, 1978, *49*, 540-542.
- Hartup, W. W. Two social worlds: Family relations and peer relations. In M. Rutter (Ed.), *Scientific foundations of developmental psychiatry*. London: Heineman, 1980.
- Koch, H. L. Some personality correlates of sex, sibling position, and sex of sibling among five- and six-year-old children. *Genetic Psychology Monographs*, 1955, *52*, 3-50.
- Lamb, M. E. Interactions between 18-month-old and their preschool-aged siblings. *Child Development*, 1978, *49*, 51-59. (a)
- Lamb, M. E. The development of sibling relations in infancy: A short-term longitudinal study. *Child Development*, 1978, *49*, 1189-1196.
- Lamb, M. E. Sibling relationships across the lifespan. In M. E. Lamb, & B. Sutton-Smith (Eds.), *Sibling relationships: Their nature and significance across the lifespan*. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1982.
- Lamke, L. K., Bell, N. J., & Murphy, C. Sibling constellation and androgynous sex role development. *The Journal of Psychology*, 1980, *105*, 139-144.
- Leventhal, G. S. Influence of brothers and sisters on sex role behavior. *Journal of Personality and Social Psychology*, 1970, *16*, 452-465.
- Minnett, A. M., Vandell, D. L., & Santrock, J. W. The effects of sibling status on sibling interaction: Influence of birth order, age spacing, sex of child, and sex of sibling. *Child Development*, 1983, *54*, 1064-1072.
- Rheingold, H. L., & Cook, K. V. The content of boys' and girls' rooms as an index of parents' behavior. *Child Development*, 1975, *46*, 459-463.
- Rosenberg, B. G., & Sutton-Smith, B. Ordinal position and sex-role identification. *General Psychology Monographs*, 1964, *70*, 297-328.
- Rosenberg, B. G., & Sutton-Smith, B. Family interaction effects on masculinity-femininity. *Journal of Personality and Social Psychology*, 1968, *8*, 117-120.
- Samuels, H. R. The effect of an older sibling on infant locomotor exploration of a new environment. *Child Development*, 1980, *51*, 607-609.
- Schachter, F. F. Sibling deidentification and split-parent identification. In M. E. Lamb & B. Sutton-Smith (Eds.), *Sibling relationships: Their nature and significance across the lifespan*. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1982.
- Stoneman, Z., & Brody, G. H. Strengths inherent in sibling interactions involving a retarded child: A functional role theory approach. In N. Stinnett, B. Chessler, J. DeFrain, & P. Knaub (Eds.), *Family strengths: Positive models for family life*, Lincoln: University of Nebraska, 1982.
- Stoneman, Z., & Brody, G. H. Family interaction during three programs: Contextualist observations. *Journal of Family Issues*, 1983, *4*, 349-366.
- Stoneman, Z., Brody, G. H., & MacKinnon, C. E. Naturalistic observations of children's activities and roles while playing with their younger siblings and friends. *Child Development*, 1984, *55*, 617-627.

- Sutton-Smith, B., & Rosenberg, B. G. *The sibling*. New York: Holt, 1970.
- Tesser, A. Self-esteem maintenance in family dynamics. *Journal of Personality and Social Psychology*, 1980, *39*, 77-91.
- Weisner, T. S., & Gallimore, R. My brother's keeper: Child and sibling caretaking. *Current Anthropology*, 1977, *48*, 1250-1254.
- Zajonc, R. B., & Markus, G. B. Birth order and intellectual development. *Psychological Review*, 1975, *82*, 74-88.