

# Cognitive Representations of Self, Family, and Peers in School-Age Children: Links with Social Competence and Sociometric Status

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RUDOLPH, KAREN D.; HAMMEN, CONSTANCE; and BURGE, DORLI. *Cognitive Representations of Self, Family, and Peers in School-Age Children: Links with Social Competence and Sociometric Status*. CHILD DEVELOPMENT, 1995, 66, 1385–1402. Attachment and social-cognitive theories of interpersonal relations have underscored the integral role that internalized cognitive representations may play as mediators of the link between family and peer relationships. 3 predictions consistent with this conceptualization received support in the present study of 161 7–12-year-old school children. In Part 1 of the study, significant connections were found among different components of cognitive representations, including social perceptions, interpersonal expectancies, and schematic organization and processing of social information. Moreover, generalization was found among children's representations across 3 interpersonal domains—that is, family, peer, and self. In Part 2, negative representations of self and others were found to be associated with increased social impairment, including dysfunctional social behavior and less positive status in the peer group. Implications of the findings for theories of interpersonal competence and interventions with socially impaired children are discussed.

A wealth of literature has been devoted to exploring the origins of interpersonal competence in children and to identifying early markers of social difficulties. In particular, the past decade has been marked by considerable interest in the impact of family experiences on the emergence of children's peer competence (reviewed in Cohn, Patterson, & Christopoulos, 1991; Ladd, 1992). To date, the bridge between family and peer relationships primarily has been built on associations between *observable* indices of functioning in these two domains. For example, prosocial behavior with peers and high sociometric status have been linked to parental warmth, responsiveness, engagement, and affection, whereas peer difficulties and low sociometric status have been linked to parental hostility, intrusiveness, unpredictability, and uninvolvement (Cohn et al., 1991; Peery, Jensen, & Adams, 1985; Pettit, Harrist, Bates, & Dodge, 1991; Putallaz, 1987). Parents of popular and rejected children also have been found to differ in their affective styles (McDonald & Parke, 1984) and discipline practices (Dishion, 1990). In-

secure early attachment has been found to predict decreased sociability and likability, increased aggression with peers, and impairment in problem solving, conflict resolution, and affect regulation (Booth, Rose-Krasnor, & Rubin, 1991; Cassidy, 1988; Cohn, 1990; Erickson, Sroufe, & Egeland, 1985; Lieberman, 1977; Main, Kaplan, & Cassidy, 1985; Matas, Arend, & Sroufe, 1985; Pastor, 1981; Suess, Grossmann, & Sroufe, 1992; Waters, Wippman, & Sroufe, 1979).

These studies link particular *behavioral* dimensions of parent-child relationships to children's competence within the peer group. More recently, however, a search has begun for "carrier mechanisms" or "modes of linkage"—that is, processes by which early socialization patterns may be transmitted across interpersonal domains and across development (Gottman, 1991; Ladd, 1991, 1992). Most notably, theorists from diverse disciplines have focused on children's internalized constructions of relationships as potential mediators of the family-peer linkage. The two most prominent conceptual frame-

We gratefully acknowledge the participating children, teachers, principals, and counselors of the participating elementary schools and UCLA Bruin Kids Day Camp, who donated their time and efforts for this study. We also thank Jennifer Silverman, Jennifer Treuting, Patty Chaidez, Daphne Isenberg, and Margie Limon for their help with data collection and coding. Findings are based in part on the doctoral dissertation of the first author. Correspondence should be addressed to Karen Rudolph, University of Illinois, Urbana-Champaign, Department of Psychology, 608 E. Daniel Street, Champaign, IL 61820.

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works for understanding this process have been generated by the attachment and social-cognition literatures.

To explain continuity in relationship patterns across the life span, attachment theorists have moved beyond their traditional focus on nonverbal behavior, by expanding on more symbolic aspects of attachment. In doing so, they have invoked Bowlby's (1973) notion of an "internal working model" as the gatekeeper of attachment-related information and the intrapsychic mechanism underlying social adjustment over time (Bretherton, 1985; Cicchetti, Cummings, Greenberg, & Marvin, 1990; Crittenden, 1990; Main et al., 1985). Social-cognitive theorists have advanced a similar conceptualization of the roots of interpersonal competence, as embodied in such constructs as "interpersonal" (Safran, 1990) or "relational" (Baldwin, 1992) schemas. These two models of competence share the assumption that specific relationship experiences are encoded into abstract cognitive representations, which then guide future perceptions, inferences, expectancies, interpretations, and behavior within interpersonal contexts, resulting in a recapitulation of earlier themes and transactional patterns (Baldwin, 1992; Cicchetti et al., 1990; Main et al., 1985; Safran, 1990; Westen, 1991).

Working models and interpersonal/relational schemas are presumed to serve both as knowledge bases, which contain specific and generalized information about self, others, and relationships, and as organizational systems, which guide the active processing of interpersonal information (Baldwin, 1992; Crittenden, 1990; Main et al., 1985; Westen, 1991). Mapping onto this structural distinction, theorists have differentiated between conscious and nonconscious elements of working models (Crittenden, 1990; Main et al., 1985) and schemas (Baldwin, 1992; Westen, 1991).

Researchers have applied several empirical approaches to the assessment of internalized representations. For example, self-report instruments have been devised to appraise cognitive components of attachment and interpersonal schemas in adults and adolescents (Armsden & Greenberg,

1987; Collins & Read, 1990; Hazan & Shaver, 1987; Safran, 1990). Novel techniques also have been created to examine representational aspects of attachment in preschoolers (Bretherton, Ridgeway, & Cassidy, 1990; Cassidy, 1988; Main et al., 1985). Several innovative strategies have been used to assess social information processing and self-schemas in adults and children (Dodge, 1985; Hammen & Zupan, 1984; Rogers, Kuiper, & Kirker, 1977).

These studies represent important methodological advances, but two core theoretical assumptions of attachment and social-cognitive theories remain relatively unexplored. First, theorists have postulated that cognitive representations may guide the processing of information within interpersonal contexts; stable beliefs or expectations about relationships are therefore expected to be associated with underlying schematic processes (Baldwin, 1992; Crittenden, 1990; Main et al., 1985). However, empirical support for the interplay among different components of representations is limited. Second, theorists have proposed that representations of relationships become generalized over time and, therefore, that they act as the basis for interrelatedness of family and peer social systems, as well as for complementarity in views of self and others (Baldwin, 1992; Cassidy, 1990; Cicchetti et al., 1990; Cohn, 1990). Although investigators have linked self representations (Cassidy, 1988) and social perceptions of peers (Suess et al., 1992) to observed parent-child attachment patterns, the predicted concordance among school-age children's *representations* in different interpersonal domains has not yet been established.

In Part 1 of this study, we sought to extend the current base of knowledge by evaluating directly the validity of these two claims. To capture the proposed complexity of representational systems, we included a range of measures assessing several aspects of children's cognitive representations of relationships, including perceptions of the interpersonal attributes of self and others, prototypical expectancies regarding the outcomes of specific interpersonal transactions, and schematic processing of interpersonal information.<sup>1</sup> In line with theoretical

<sup>1</sup>Comprehensive reviews of the presumed composition and structure of internal working models and interpersonal/relational schemas can be found elsewhere (Baldwin, 1992; Crittenden, 1990). These particular components were selected based on distinctions that have been made between declarative knowledge (e.g., descriptive, generalized impressions of self and others), procedural knowledge (e.g., formulations or interpretations of specific events or situa-

predictions, we hypothesized that (1) significant interrelations would be found among the different components of cognitive representations and (2) positive associations would be observed among cognitive representations of mother/family, peers, and self in the context of peer relationships. We chose to focus mainly on representations of the mother because practical constraints prohibited the separate examination of mother-child and father-child relationships, and much of the work in the attachment literature has involved mother-child relations. Because of our focus on interpersonal representations, we chose to assess children's representations of self in a *relational* context, rather than general self-worth. More specifically, we selected peer relationships because of our interest in linking cognitive representations to children's peer competence in Part 2 of the study.

## Part 1

### METHOD

#### *Subjects*

Subjects were recruited via distribution of parent consent forms at several public and private elementary schools in Los Angeles and at the Bruin Kids Day Camp sponsored by the University of California, Los Angeles. The response rate for students was approximately 50%. Because the distribution of consent forms at Bruin Kids was not monitored by the camp, it was not possible to calculate a response rate in this group. Participants included 161 children (89 girls, 72 boys), ranging in age from 7.0 to 12.75 years ( $M = 9.42$ ,  $SD = 1.17$ ). Girls and boys did not differ in age,  $F(1, 159) = .043$ , N.S. Children represented the following ethnic groups: 59% Caucasian, 12% African American, 11% Latino, 11% Asian American, and 7% other. No information was available concerning individual SES levels, but overall, subjects from the various sites represented lower- to upper-middle socioeconomic classes. Seventy-one percent of the children lived in two-parent households, and 85% had one or more siblings. All children had mothers who lived in the home (although four alternated between their parents' homes), and 80% of the mothers had part- or full-time jobs.

Two separate subgroups of children participated in follow-up sessions after 1 month ( $n = 34$ ) and approximately 5 months ( $n = 30$ ). The 1-month follow-up group was 59%

male, 29% Caucasian, and had a mean age of 9.14 ( $SD = .93$ ); the 5-month follow-up group was 43% male, 73% Caucasian, and had a mean age of 9.71 ( $SD = 1.13$ ).

#### *Procedures*

Measures were individually administered by a graduate student in clinical psychology or by trained undergraduates. The experimenter read each item and response alternative aloud as the child followed along. Children were selected for retesting based on their availability at the time of follow-up. Due to practical limitations (e.g., some children had changed schools or had graduated), it was not possible to sample randomly from the original pool of subjects.

#### *Measures*

Measure construction was based on conceptual and empirical guidelines about characteristics of parent-child and peer relationships important for the development and maintenance of positive social bonds. Four measures of cognitive representations were developed for this study. Based on the relevant literature, we first generated several key dimensions of interpersonal relatedness (e.g., trust, dependability, emotional responsiveness, accessibility, involvement). We then constructed measures that incorporated these relationship dimensions in the context of the different aspects of cognitive representations that we wished to target—that is, social perceptions, interpersonal expectancies, and schematic processing. Two established measures of relationships, the Child's Report of Parental Behavior Inventory and the Social Support Appraisals Scale, also were included based on their focus on comparable dimensions (acceptance and support, respectively). To assess the information-processing component of cognitive representations, two incidental recall tasks were used (see below). These tasks allowed us to test our hypothesis that beliefs and expectations about others would be associated with the processing of interpersonal information. Because schema-congruent information is presumably processed (encoded and retrieved) more efficiently than schema-incongruent information, children can be categorized as to the underlying nature of their cognitive schemas (positive vs. negative), based on their relative recall of particular types of material.

*Levels-of-Processing Task (LOP).*—This task, based on the depth-of-processing para-

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digm developed by cognitive psychologists, has been used in the social and clinical psychology literatures as a measure of self-schema (e.g., Hammen & Zupan, 1984; Rogers et al., 1977). The premise of the task is that internalized cognitive structures drive attentional processes and memory search, thereby facilitating the encoding, storage, and retrieval of personally relevant information. Thus, information about personal attributes is presumed to represent an organized body of knowledge that would be activated by instructions to evaluate whether or not particular words are self-descriptive. Support for this hypothesis has been provided by evidence of enhanced recall during an incidental memory task of trait adjectives encoded under self-referent instructions ("Does this word describe you?") in comparison to adjectives for which judgments are required about structural aspects (e.g., "Is this word long?"). Children as young as 8 years of age have shown superior recall of self-referent encoded words, suggesting the presence of self-schema processing (Hammen & Zupan, 1984). Concurrent validity has been established through reported links between the content of children's self-schemas and associated constructs (Hammen & Zupan, 1984; Zupan, Hammen, & Jaenicke, 1987).

We adapted this paradigm to tap children's organization and processing of mother-relevant trait adjectives. Forty-four adjectives describing positive maternal attributes (e.g., loving, patient, kind) and negative maternal attributes (e.g., strict, mean, bad) are presented orally, one at a time, while the child views a card on which each individual word is typed. Children are directed to encode each adjective under one of two instructions, presented in randomized order: (a) Does this word describe your mother? (mother-referent) or (b) Is this word in capital letters? (structural). Half of the adjectives are presented with each question, and two versions of the task were developed to counterbalance the question asked about each word. After completing the ratings, children are asked unexpectedly to recall as many words as possible.

The adjectives are divided into four groups of 11 words: positive mother-referent, negative mother-referent, positive structural, and negative structural. One word from each group, representing either one of the first or last two words presented, was excluded from analyses to minimize primacy and recency memory effects. Eight scores are calculated for each child, based on the

proportion of words recalled as a function of the three dimensions—that is, level of encoding (mother-referent vs. structural), rating (yes vs. no), and valence (positive vs. negative). For example, the proportion of positive mother-referent words recalled is calculated as the number of yes-rated positive mother-referent words recalled divided by the total number of yes-rated positive mother-referent words.

Past studies examining relations between the valence of words recalled and associated constructs have suggested that the variable of interest is the *relative*, not absolute, recall of positive versus negative material (e.g., Hammen & Zupan, 1984). Thus, we also computed a summary score, reflecting the relative negativity of maternal schemas, as the proportion of yes-rated, negative mother-referent words recalled minus the proportion of yes-rated, positive mother-referent words recalled. Children were divided into two groups: (1) a positive schema group—those with greater recall of positive than negative adjectives (i.e., difference scores  $< 0$ ) and (2) a negative schema group—those with greater recall of negative than positive adjectives or with equal recall of negative and positive adjectives (i.e., difference scores  $\geq 0$ ).

*Story Task.*—Similar to the LOP paradigm, this task is an incidental recall measure that assumes schema-driven facilitation of information storage and retrieval. The interviewer reads a story depicting various experiences that occur during a child's typical day with his or her mother. Unlike the LOP Task, which asks directly about maternal traits, the story presents information about a *hypothetical* mother. Nine positive maternal attributes (e.g., helpful, generous, comforting) and nine negative maternal attributes (e.g., unfair, grouchy, mean) are described in the context of specific incidents. At the end of the story, subjects are asked unexpectedly to recall the descriptions. The proportion of negative descriptions recalled was computed as an index of the relative negativity of maternal representations. Children were divided into two groups, comparable to those created for the LOP Task: (1) a positive schema group—those with greater recall of positive than negative descriptions, or with equal recall of positive and negative descriptions (i.e., proportion of negative descriptions recalled  $\leq .50$ ) and (2) a negative schema group—those with greater recall of negative than positive descriptions (i.e., proportion of negative descriptions recalled  $> .50$ ). The group placement of children with

equal recall of positive and negative material was determined on the basis of the cell sizes in the groups, rather than on an a priori hypothesis, and thus differs between the LOP and Story Tasks.

*Perceptions of Peers and Self Questionnaire (POPS).*—The POPS was devised for the present study to assess children's impressions about the extent to which different social attributes describe their peers and themselves. Items are rated on a scale of 1 (not at all true) to 4 (very much true). The first 12-item scale examines children's perceptions of their peers and of friendships (e.g., "Other kids will try to put you down or tease you if they have a chance"; "Once you get into a fight with a friend, it probably means they will not be friends with you anymore").

The second 15-item scale measures children's perceptions of self in the context of peer relationships. The scale taps two dimensions of self representations (following Cassidy, 1990)—a cognitive component, or what children "know" about themselves, and an affective component, or what children "feel" about themselves. The former dimension reflects children's perceptions of their specific social competencies (e.g., "I am good at making other kids laugh"); the latter reflects children's evaluations of their social self-worth or ability to be a good friend ("When other kids do not want to be around me, it's probably because there's something wrong with me").

Cronbach's alphas were .75 and .83 for the peer and self subscales, respectively. Test-retest reliabilities for 1-month and 5-month intervals, respectively, were  $r = .69$ ,  $p < .0001$ , and  $r = .55$ ,  $p < .005$  (peer), and  $r = .69$ ,  $p < .0001$ , and  $r = .60$ ,  $p < .002$  (self). Because of missing data, the 5-month figures are based on 23 subjects.

*Child's Report of Parental Behavior Inventory—Revised (CRPBI; Margolies & Weintraub, 1977).*—The CRPBI assesses children's beliefs about typical parental attitudes and behaviors. The current study focused on perceptions of the mother and used the Acceptance subscale only (Cronbach's alpha = .93), as this subscale was the most relevant to attachment-related issues. Children rate their mothers on a scale of 0 (not at all true) to 2 (very true) for 24 items related to acceptance of the child (e.g., "My mom seems proud of the things I do"). One-month and 5-month test-retest reliabilities in this sample were  $r = .77$  and  $.73$ , respectively. Construct validity for the Acceptance

subscale of the revised CRPBI has been demonstrated through correlations with measures of self-esteem (Litovsky & Dusek, 1985).

*Social Support Appraisals Scale (APP; Dubow & Ullman, 1989).*—This 31-item scale measures children's subjective appraisals of social support provided by family, peers, and teachers (e.g., "Do you feel like your family is never there when you need them?" "Can you count on your friends for help or advice when you have problems?"). Children rate each item on a scale of 1 (never true) to 5 (always true). Subscales are derived that correspond to each of the three sources of support; only the family and peer subscales were included here. In the current sample, high internal consistency was found for the family (.87) and peer (.87) scales. One-month and 5-month test-retest reliabilities were  $r = .62$  and  $.68$  for the family subscale, and  $r = .87$  and  $.55$  for the peer subscale. Construct validity has been established through correlations with measures of loneliness, peer social preference, perceived social acceptance, and global self-esteem (Dubow & Ullman, 1989). The scale was recoded for the present study so that its direction would be parallel to other measures.

*Children's Expectations of Social Behavior Questionnaire (CESBQ).*—The CESBQ was designed for the present study as an index of interpersonal expectancies. This measure requires that children encode typical interpersonal transactions, formulate an understanding of the situations, and generate predictions about likely outcomes. Thirty hypothetical vignettes—15 mother-related and 15 peer-related—describing social interchanges between self and others are presented. Children are asked to select the anticipated responses of their mother or peers.

Construction of the CESBQ was based on theoretical assumptions about the importance of interpersonal expectations in the formation of relationships (Baldwin, 1992; Bowlby, 1973; Safran, 1990). Three interpersonal response styles are tapped in each vignette: (a) supportive, comforting, or accepting, (b) indifferent, avoidant, or withdrawing, and (c) hostile, critical, or rejecting. These three response types receive scores of 0, 1, and 2, respectively. Scores are summed to form separate mother and peer subscales.

A sample item from the mother subscale is as follows: "You're really scared one night

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because you wake up in the middle of the night and you think that you hear someone outside of your window. You go and wake your mother up to tell her about it. What do you think she might do? (a) She might take me back to bed and sit with me for a little while (*supportive*); (b) She might tell me to go back to bed because I was just imagining things (*indifferent*); (c) She might get kind of angry at me for waking her up (*hostile*)." A sample item from the peer subscale is as follows: "You're feeling kind of upset about something that happened one morning at home and you decide to try and talk about it with a friend during recess. As soon as the bell rings, you walk over and start to tell her about your problem. What do you think she might do? (a) She might listen to my problem and try to make me feel better (*supportive*); (b) She might just walk away and say that she wants to play with the other kids (*indifferent*); (c) She might tell me that I always seem to have problems and I should stop bothering her (*hostile*)."

Cronbach's alphas were .74 and .84 for the mother and peer scales, respectively. Test-retest reliabilities for 1-month and 5-month intervals, respectively, were  $r = .86$  and  $.82$  (mother), and  $r = .91$  and  $.68$  (peer),  $ps < .0001$ .

## RESULTS

### *Effects of Gender and Age on Cognitive Representations*

We first examined the effects of gender and age (7–9 years vs. 10–12 years) on children's cognitive representations. The nine measures of representations (CRPBI, APP-Family, CESBQ-Mother, LOP negativity index, Story negativity index, POPS-Peer, APP-Peer, CESBQ-Peer, POPS-Self) were subjected to a  $2 \times 2$  (gender  $\times$  age) multivariate analysis of variance (MANOVA). Neither the main effects of gender or age nor the interaction between gender and age was found to be significant. Thus, data were combined across groups. Table 1 presents means and standard deviations of each measure for the total sample and for separate gender and age groups.

### *Coherence of Representations within Mother/Family and Peer Domains*

We predicted that associations would be found among different aspects of cognitive representations. As expected, the upper left and lower right triangles in Table 2 show significant pairwise correlations among the measures of social perceptions (perceptions, social support) and interpersonal expectan-

TABLE 1

MEAN SCORES AND STANDARD DEVIATIONS ON MEASURES OF COGNITIVE REPRESENTATIONS BY TOTAL SAMPLE, GENDER, AND AGE

	Total Sample ( $n = 161$ )	Male ( $n = 72$ )	Female ( $n = 89$ )	7–9 Years ( $n = 116$ )	10–12 Years ( $n = 45$ )
<b>Mother/Family:</b>					
Perceptions (CRPBI) .....	8.06 (8.06)	8.50 (8.93)	7.71 (7.32)	8.06 (7.92)	8.07 (8.50)
Social support (APP) .....	18.00 (6.76)	18.69 (6.82)	17.44 (6.71)	17.84 (6.82)	18.40 (6.68)
Expectations (CESBQ) .....	4.39 (3.73)	5.26 (4.19)	3.69 (3.16)	4.07 (3.52)	5.22 (4.16)
LOP Task (negativity index) .....	-.08 (.29)	-.03 (.31)	-.12 (.27)	-.09 (.28)	-.07 (.32)
Story Task (negativity index) .....	.63 (.22)	.66 (.22)	.61 (.21)	.62 (.23)	.65 (.18)
<b>Peer:</b>					
Perceptions (POPS) .....	11.42 (5.61)	11.37 (5.16)	11.47 (6.01)	11.56 (5.93)	11.03 (4.64)
Social support (APP) .....	28.82 (8.91)	29.24 (8.39)	28.48 (9.34)	28.34 (8.81)	30.07 (9.14)
Expectations (CESBQ) .....	3.93 (4.70)	4.24 (4.52)	3.67 (4.85)	3.82 (4.98)	4.20 (3.92)
Self (POPS) .....	10.81 (7.09)	11.07 (6.90)	10.58 (7.29)	11.26 (7.29)	9.54 (6.41)

NOTE.—CRPBI = Child's Report of Parent Behavior Inventory; APP = Social Support Appraisals Scale; CESBQ = Children's Expectations of Social Behavior Questionnaire; LOP = Levels of Processing; POPS = Perceptions of Peers and Self Questionnaire. Higher scores indicate more *negative* cognitive representations. Numbers in parentheses represent standard deviations.

TABLE 2  
 INTERCORRELATIONS AMONG MEASURES OF MOTHER/FAMILY, PEER, AND SELF REPRESENTATIONS

	1	2	3	4	5	6	7
Mother/Family:							
1. Perceptions (CRPBI) .....	...	.70	.50	.36	.39	.36	.31
2. Social support (APP) .....		...	.48	.43	.54	.39	.47
3. Expectations (CESBQ) .....			...	.27*	.26*	.40	.14 <sup>^</sup>
Peer:							
4. Perceptions (POPS) .....				...	.68	.59	.60
5. Social support (APP) .....					...	.56	.64
6. Expectations (CESBQ) .....						...	.51
Self:							
7. Perceptions (POPS) .....							...

NOTE.—All *ps* < .0001 unless otherwise noted.  
<sup>^</sup> *p* < .10.  
 \* *p* < .005.

cies *within* the mother/family and peer domains.<sup>2</sup>

We then examined children's processing of interpersonal information. The presence of an organized mother schema that guides information processing would be supported by enhanced recall of mother-referent versus structurally encoded adjectives on the LOP Task. To test for this effect, scores were averaged across the valence dimension, resulting in four scores representing the proportions of yes- and no-rated mother-referent and structural words recalled. A two-way (level × rating) repeated-measures analysis of variance (ANOVA) on these four scores revealed significant main effects of level,  $F(1, 158) = 23.22, p < .0001$ , and rating,  $F(1, 158) = 8.71, p < .005$ . As predicted, children recalled significantly more mother-referent (mean recall = .17, SD = .13) than structural (mean recall = .12, SD = .08) adjectives, confirming the presence of an organized mother schema. Consistent with previous studies, children also recalled significantly more yes-rated (mean recall = .16, SD = .10) than no-rated (mean recall = .13, SD = .10) adjectives. The level × rating interaction was nonsignificant. When gender and age were included as between-subjects factors, we found a significant age × rating interaction; because this finding was not relevant to our main hypothesis, we chose to collapse across age groups.

Next we tested the hypothesis that chil-

dren's beliefs and expectations about their mother/family would be associated with the active processing of mother-relevant information. Specifically, we expected that children with relatively more negative maternal schemas on the LOP and Story Tasks would report more negative social perceptions and interpersonal expectancies of their mother/family. The CRBPI, APP-Family, CESBQ-Mother, and proportion of negative descriptions recalled on the Story Task were subjected to a MANOVA using LOP group (positive vs. negative schema) as a between-subjects factor. A highly significant multivariate effect of group was found,  $F(1, 157) = 15.87, p < .0001$ . Subsequent *t* tests indicated that children in the negative schema group reported lower perceptions of maternal acceptance and lower appraisals of family support, and expected more negative maternal responses (see Table 3). The difference between the Story Task negativity index in the two LOP schema groups was only marginally significant, perhaps reflecting the fact that the Story Task assessed encoding and retrieval of information about a hypothetical mother, whereas the LOP Task probed specifically for recall of interpersonal attributes relevant to children's own mothers.

Parallel analyses were conducted to determine whether beliefs and expectancies were associated with processing of social information on the Story Task. A MANOVA was performed on the three measures of

<sup>2</sup> A confirmatory factor analysis on these six measures (CRPBI, APP-Family, CESBQ-Mother, POPS-Peer, APP-Peer, CESBQ-Peer) yielded two *distinct* family and peer representations factors, with significant pathways (*p* < .05) between all six indicators and their respective factors (Rudolph, Hammen, & Burge, 1994b).

TABLE 3

T TESTS FOR POSITIVE- AND NEGATIVE-SCHEMA GROUPS ON MEASURES OF MOTHER/FAMILY REPRESENTATIONS

	Positive	Negative	<i>t</i> Value	<i>p</i> Value
Levels-of-Processing Task:				
	( <i>n</i> = 101)	( <i>n</i> = 58)		
Perceptions (CRPBI) .....	6.52 (6.65)	11.02 (9.46)	3.19	.002
Social support (APP) .....	16.56 (5.88)	20.31 (7.22)	3.55	.001
Expectations (CESBQ) .....	3.72 (3.47)	5.48 (3.94)	2.93	.004
Story Task (negativity index) ....	.61 (.22)	.67 (.22)	1.72	.087
Story Task:				
	( <i>n</i> = 52)	( <i>n</i> = 108)		
Perceptions (CRPBI) .....	6.42 (6.30)	8.93 (8.69)	2.07	.040
Social support (APP) .....	16.33 (6.28)	18.64 (6.69)	2.09	.038
Expectations (CESBQ) .....	3.52 (3.17)	4.77 (3.91)	2.01	.046

NOTE.—CRPBI = Child's Report of Parent Behavior Inventory; APP = Social Support Appraisals Scale; CESBQ = Children's Expectations of Social Behavior Questionnaire. Higher scores indicate more *negative* cognitive representations. Numbers in parentheses represent standard deviations.

mother/family representations (CRPBI, APP-Family, CESBQ-Mother), with story group (positive vs. negative schema) serving as a between-subjects factor. A significant multivariate effect of group was found,  $F(1, 157) = 5.18, p < .05$ . *T* tests revealed that children in the negative schema group once again reported lower perceptions of maternal acceptance and lower appraisals of family support, and expected more negative maternal responses (see Table 3).

#### Concordance among Representations of Mother/Family, Peers, and Self

To test for concordance in children's representations *across* interpersonal domains, correlations were computed among the three measures of social perceptions and interpersonal expectancies in the mother/family (CRPBI, APP-Family, CESBQ-Mother) and peer (POPS-Peer, APP-Peer, CESBQ-Peer) domains. In support of the predicted generalization of cognitive representations, significant relationships emerged among all six measures (see Table 2 above).

We also examined the extent to which specific types of interpersonal expectancies—that is, tendency to expect support versus indifference versus hostility—generalized across mother-child and peer relationships. We calculated the number of sce-

narios in which children predicted each type of response on the CESBQ (separate totals were computed for the mother and peer subscales). Because scores in the three categories were interdependent—that is, the third score was predetermined once the first two had been established—correlations were computed for the two types of negative expectations only. Analyses revealed that children's expectations of maternal indifference were significantly correlated with peer indifference,  $r(159) = .40, p < .0001$ , but not with peer hostility,  $r(159) = .10, N.S.$  Expectations of maternal hostility were significantly correlated with both peer hostility,  $r(159) = .38, p < .0001$ , and peer indifference,  $r(159) = .22, p < .005$ . Although these tests should be interpreted with some caution due to the dependence of the indifferent and hostile scores within each domain, the overall pattern is suggestive of some specificity in how negative expectations are generalized across interpersonal domains.

Finally, we examined the congruence between children's representations of others and representations of self in the context of peer relationships (POPS). As predicted, self representations were significantly correlated with mother/family and peer representations (see Table 2 above). Because of our focus on children's self representations

within peer relationships, we expected to find stronger self-peer than self-family linkages. In support of this hypothesis, tests of dependent correlations (Steiger, 1980) revealed significantly stronger associations between self representations and each peer measure—that is, social perceptions,  $t(146) = 3.81$ ,  $p < .0001$ , social support,  $t(146) = 2.29$ ,  $p < .05$ , and expectancies,  $t(146) = 4.72$ ,  $p < .0001$ —than the analogous mother/family measure.

MANOVAs were also conducted to determine whether the positive and negative maternal schema groups formed from scores on the two information-processing tasks differed in their report of peer or self representations. No significant group differences were found for the LOP Task,  $F(1, 145) = .38$ , N.S., or the Story Task,  $F(1, 146) = 1.69$ , N.S.

#### DISCUSSION

Results supported theoretical assumptions that social experiences are transformed into generalized cognitive representations of relationships. First, significant associations were observed among children's social perceptions, prototypical expectancies about outcomes of interpersonal transactions, and information processing. Enhanced recall of mother-referent versus structurally encoded adjectives on the LOP Task supported the operation of a maternal schema that acts as a filter through which incoming and outgoing social information is processed. Additionally, children with relatively more negative maternal schemas on the LOP and Story Tasks possessed more negative global impressions of their family and expected more aversive outcomes in mother-child transactions than did children with positive schemas. Overall, these findings provide an empirical basis for important theoretically predicted associations between belief systems and the encoding and retrieval of interpersonal information.

Our second objective was to examine the predicted generalization in children's cognitive representations across interpersonal domains. In general, our results extend previous evidence of *behavioral* continuity between family and peer functioning to the level of *cognitive* representations, providing support for the operation of psychological mediators. As expected, we found significant associations between representations of mother/family and peers. Consistency also emerged in the specific nature of children's

interpersonal expectancies—that is, forecasts of indifference versus hostility. These results substantiate the theoretical notion of generalized representational systems, yet they depart from findings in adolescents. For example, Greenberg, Siegel, and Leitch (1983) found that the affective quality of adolescents' attachment to their parents was unrelated to peer attachment. Although the reason for this discrepancy is unclear, it may be that the correspondence between representations of family and peers diminishes with age, as youngsters become more individuated from their parents and as cognitive representations become more complex and differentiated. Clarifying this issue will require direct comparisons of children at varying developmental levels. Likewise, our finding of an age effect on the LOP Task suggests that it may be important to explore developmental differences in the processing of social information.

Findings also indicated that children's self-concept in the context of peer relationships is intertwined with their representations of others. As predicted, self representations were found to be more closely tied to peer than to family representations. Interesting questions for future study would be whether children's global self-esteem or self-perceptions in other realms also stem from their representations of social relationships, and whether self representations in other areas also are associated more strongly with peer than with family representations.

A final issue raised by these results is the relative complexity involved in the generalization of cognitive representations across relationships. As noted above, we did find congruence among self-report measures of mother/family, peer, and self representations. Yet positive and negative maternal schema groups did *not* differ in peer or self representations. Two explanations for these results are possible. First, concordance across measures of social perceptions and interpersonal expectancies in part may have reflected shared method variance. However, the fact that schema groups *did* differ in self-reported mother/family representations suggests that method similarity (or dissimilarity) does not completely account for the pattern of findings. Alternatively, it may be that beliefs within a particular interpersonal domain guide information processing only within that domain. For example, children who view their families as rejecting or uncaring may selectively attend to and recall information consistent with this schema, but

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a parallel negative view of peers would not necessarily lead to similar biases in the processing of family-related information. Predicting when specificity versus generalization in cognitive representations applies will require additional understanding of the process by which beliefs are transmitted across interpersonal domains.

### Part 2

The second part of this study investigated the relevance of children's internalized constructions of relationships to their actual experiences in the social realm. Attachment and social-cognitive theories converge in the prediction that cognitive representations of self and the social world may foster the perpetuation of adaptive or maladaptive patterns of interpersonal relatedness through their influence on social behavior (Baldwin, 1992; Bowlby, 1973; Cassidy, 1988; Cohn, 1990; Safran, 1990). Positive beliefs and expectations are presumed to promote competent and prosocial behavior, whereas deprecating views of self and others may undermine children's sense of confidence and trust and give rise to social difficulties. Children's social actions then may lead to self-perpetuating cognitive-behavioral cycles (Baldwin, 1992; Safran, 1990). That is, positive representations may increase children's likelihood of developing rewarding relationships, which would reinforce their optimistic view of the world; dysfunctional behavior based on negative representations may elicit responses from others that reaffirm idiosyncratic belief systems. Therefore, we might expect that children's cognitive representations of relationships would predict both their personal styles of interaction and their status in the peer group.

A few investigators have linked interpersonal perceptions with social behavior and sociometric status. Rejected and neglected children have been found to possess negative and biased impressions of relationships (Patterson, Kupersmidt, & Griesler, 1990), whereas well-liked children report parental acceptance and warmth (Armentrout, 1972; Roff, Sells, & Golden, 1972) and more positive social expectations about self and others (Cassidy & Asher, 1994). Studies of aggressive and rejected children also have consistently documented the presence of hostile attributional styles and intention-cue detection deficits (e.g., Dodge & Frame, 1982; Lochman, 1987).

Empirical data clearly link beliefs about self and others and social information processing with children's interpersonal functioning. However, past researchers often have focused on the peer domain, whereas only a few (e.g., Armentrout, 1972; Patterson et al., 1990; Roff et al., 1972) have examined representations of the family. Thus, we know relatively little about the cognitive-developmental origins of social competence. Also, studies have tied social adjustment to beliefs about peer acceptance or *specific* friendships but rarely have assessed more *generalized* assumptions about other children or about relationships. In one study that did examine general views of peers, the authors found that beliefs about familiar, but not unfamiliar, peers differed in the expected ways among sociometric groups (Rabiner, Keane, & MacKinnon-Lewis, 1993). They therefore concluded that preconceived notions about peers may *not* contribute to children's functioning in novel social contexts.

Building on existing data, we examined the association between children's cognitive representations and objective indices of social functioning. We focused on dimensions of peer competence that previously have been linked to family relationships and cognitive representations, including regulation of affect, conflict-resolution/problem-solving skills, and sociometric status. In accordance with theoretical predictions, we expected that negative representations of mother/family, peers, and self within peer relationships would be associated with decreased social competence and lower status in the peer group.

Conceptualizations of family-peer linkages often presuppose that social-cognitive processes mediate between family and peer functioning. Indeed, some researchers have found that family experience may shape peer competence through its contribution to such social-cognitive variables as self-efficacy beliefs, problem-solving ability, and emotional understanding (Cassidy, Parke, Butkovsky, & Braungart, 1992; Pettit, Dodge, & Brown, 1988; Pettit et al., 1991; Putallaz, 1987). Our second goal was to extend these findings by exploring the mediating role of peer representations. Specifically, we predicted that children's representations of peers would mediate the relation between family representations and social competence.

## METHOD

*Subjects*

Subjects included two subgroups of children from our original sample. The first subgroup was composed of 81 schoolchildren (49 girls, 32 boys; mean age = 9.65, SD = 1.22). This subgroup was slightly older than the remainder of the sample,  $F(1, 159) = 6.66, p < .05$ , but did not differ in gender or ethnic composition. The second subgroup was composed of 36 children (20 girls, 16 boys; mean age = 8.90, SD = 1.00) who were invited, based on availability, to participate in a conflict interaction task at UCLA. Eighteen of the 36 children were selected as the "target" children and were paired with an unfamiliar peer, matched for gender and age. Children who participated in this task were younger than those who did not,  $F(1, 159) = 9.26, p < .01$ ; no differences were present in gender or ethnic composition.<sup>3</sup>

*Procedure*

At the time of the initial testing session, teachers of the 81 schoolchildren were asked to complete measures of peer sociometric status. Testing was conducted during the spring to ensure that teachers would have adequate exposure to the children prior to making these ratings.

At a later date, a subgroup of children recruited from both the school and camp settings participated in an experimental interaction task designed to examine children's transactions during a conflict situation (Rudolph, Hammen, & Burge, 1994a). The task was structured to create three major decision points that had the potential for eliciting disagreement. Children were presented with two models built of colored parquette blocks. They were instructed to designate a leader, who would lead them in making a joint decision about which model to build. After one minute the experimenter returned and told the children that whoever constructed an identical copy of the chosen model would earn a prize. The children received a set of materials that was insufficient for the entire completion of two separate models, and they were allowed to build for

10 minutes. Then they were informed that, as a reward for their efforts, they would both receive prizes. Two prizes, one of which had an obviously higher value, were left with them and they were asked to decide on the prize distribution. Subsequently, the child with the less valuable prize was allowed to exchange it.

*Measures*

*Cognitive representations.*—We created two composite variables of cognitive representations using the following procedure: Each measure of mother/family representations (CRPBI, APP-Family, CESBQ-Mother) and peer representations (POPS-Peer, APP-Peer, CESBQ-Peer) was converted to a standardized score; the three scores within each domain were then summed to yield separate mother/family and peer representations variables. Forming composites from highly related components results in more precise and representative measures of the variable of interest (Ghiselli, Campbell, & Zedeck, 1981) and reduced the number of analyses needed to test our hypotheses. We also converted totals on the POPS-Self to standardized scores.

*Conflict-Negotiation Task.*—Videotapes of the Conflict Task were coded independently by two raters, who were blind to children's scores on measures of representations and sociometric status. Codes were based on all three stages of the task combined—that is, leadership decision, block building, and prize distribution. Interrater reliability was assessed via Pearson correlations. Coding discrepancies were resolved in one of two ways: (a) If coders disagreed by only one point, an average of the two codes was used; (b) if coders disagreed by two or more points, a consensus was reached on the actual code. Interrater reliability and internal consistency coefficients follow each code.

First, target children were rated along a seven-point scale (1 = not at all present, 4 = moderately present, 7 = to a large degree present) on eight dimensions of behavior. Because of the strong interrelations among

<sup>3</sup> Because children in the camp setting were not observed by counselors in their customary social context and because sociometric status would not have had time to stabilize during the relatively short camp sessions, we chose to include only those children who were recruited from their classrooms in our sociometric analyses. Several factors limited the number of participants in the conflict task. First, constraints were imposed by the matching criteria (i.e., same gender and age, minimal previous contact). Additionally, implementation of the task and the coding procedures were quite time-intensive, and participation required that parents bring their children to UCLA.

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certain dimensions, two conceptually derived summary scales were formed by summing scores on two sets of four ratings: (a) persistence in problem-solving efforts, positive assertiveness, positive conflict management, and general competence were combined into a *conflict-negotiation competence* scale ( $r = .88$ ,  $\alpha = .95$ , range = 4–28) and (b) conflict exacerbation, positive affect, outwardly directed negative affect, and inwardly directed negative affect were combined into an *affect regulation* scale ( $r = .92$ ,  $\alpha = .82$ , range = 4–28). Individual ratings were recoded so that higher scores on the summary scales represent increased conflict-negotiation competence and more appropriate affect regulation.

Second, a *dyadic quality* summary scale ( $r = .90$ ,  $\alpha = .95$ , range = 4–28) was formed by summing four seven-point ratings of the overall dyadic interaction: conflict or friction between peers, collaboration, problem-solving competence of the dyad, and mutuality/reciprocity. Again, individual ratings were recoded so that higher scores on this scale represent more adaptive interactions. Dyads also were rated on a seven-point scale for the *quantity* or amount of interaction displayed during the task.

Third, a *peer response* summary scale ( $r = .89$ ,  $\alpha = .97$ , range = 3–21) was formed by summing three seven-point ratings of partners: general response to the target child (actively negative to actively positive), discomfort or embarrassment in response to the target child (not at all present to a large degree present), and emotional state at the end of the interaction (irritated/unhappy to content/happy). Higher scores on this scale represent more positive peer responses.

*Sociometric measures.*—Teachers rated children on a five-point scale of peer rejection (1 = not at all rejected, 5 = to a large degree rejected) and endorsed one of six sociometric descriptions for each child. Due to low base rates, the original six classifications were collapsed as follows: (a) social star ( $n = 22$ ); (b) average ( $n = 40$ ); (c) disliked/rejected, disliked/ostracized, or controversial (disliked) ( $n = 9$ ); and (d) neglected/ignored (neglected) ( $n = 10$ ). Previous studies have demonstrated that such categories, as determined by peer nominations, discriminate accurately between groups of children in terms of their observed social behavior (Dodge, 1983).

## RESULTS

### *Effects of Gender and Age on Social Functioning*

We first assessed for the presence of gender or age differences in social functioning. Teacher ratings of peer rejection were subjected to a  $2 \times 2$  (gender  $\times$  age) univariate ANOVA. Neither the main effects of gender or age nor the interaction was found to be significant. Analyses also revealed no gender or age differences in summary scores on the conflict-negotiation task or in the proportion of children categorized into the four sociometric groups.

### *Association between Cognitive Representations and Behavior Observations*

We predicted that negative representations of mother/family, peers, and self would be related to disturbed peer interactions during the conflict-negotiation task. It was not expected that children's representations would be associated with the quantity of interaction between members of the dyad.

Table 4 presents correlations among the composite mother/family and peer variables, self representations, and the five scores from the conflict task. Differing patterns of associations were found for representations in the three domains. Negative representations of mother/family were related quite strongly to lower levels of competence in negotiating conflict, less adaptive affect regulation, more conflictual dyadic transactions, and more negative peer responses. Negative peer representations were related only to more negative dyadic quality and peer responses. Self representations were not found to be significantly related to any of the behavioral indices. As expected, representations in all three domains were unrelated to the quantity of interaction between children.

### *Association between Cognitive Representations and Sociometric Status*

*Peer rejection.*—We predicted that negative representations of self and others would be related to higher levels of peer rejection, as rated by teachers. As displayed above in Table 4, peer rejection was significantly correlated in the expected direction with mother/family, peer, and self representations.

*Sociometric categories.*—Univariate ANOVAs were conducted to assess whether cognitive representations differed among sociometric groups, as classified by teachers. Analyses revealed significant overall effects

TABLE 4  
CORRELATIONS OF SUMMARY SCALES FROM THE CONFLICT-NEGOTIATION TASK AND TEACHER-RATED PEER REJECTION WITH STANDARDIZED COMPOSITE MEASURES OF MOTHER/FAMILY AND PEER REPRESENTATIONS AND SELF REPRESENTATIONS

	CONFLICT-NEGOTIATION SUMMARY SCALES (n = 18)				TEACHER RATING (n = 81)	
	Conflict Negotiation	Affect Regulation	Dyad Quality	Dyad Quantity	Peer Response	Peer Rejection
Mother/family representations <sup>a</sup>	-.54*	-.63***	-.54*	-.04	-.57**	.29**
Peer representations <sup>b</sup>	-.29	-.35 <sup>^</sup>	-.49*	-.05	-.47*	.40***
Self representations	-.30	-.25	-.37 <sup>^</sup>	.03	-.30	.35***

NOTE.—Higher scores indicate more negative representations, more positive interactions on the conflict task, and increased peer rejection. One-tailed significance levels are reported for the Conflict Task.

<sup>a</sup> Reflects sum of standardized scores on the CRPBI, APP-Family, and CESBQ-Mother.

<sup>b</sup> Reflects sum of standardized scores on the POPS-Peer, APP-Peer, and CESBQ-Peer.

<sup>^</sup> p < .10.

\* p < .05.

\*\* p < .01.

\*\*\* p < .005.

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for sociometric type on mother/family representations,  $F(3, 77) = 2.70, p = .05$ , peer representations,  $F(3, 77) = 3.52, p < .05$ , and self representations,  $F(3, 65) = 5.00, p < .005$ .

We predicted that children viewed by teachers as social stars would possess the most positive representations, average children would possess intermediate levels of representations, and disliked and neglected children would possess the most negative representations (no predictions were made as to the relative negativity of representations in the disliked and neglected groups). A series of planned contrasts was conducted to compare status groups. Because the small sample sizes in the disliked and neglected groups limited the power to detect important differences, one-tailed significance levels are reported for those contrasts in which directional hypotheses were made. Figure 1 displays the standardized group means for the composite mother/family and peer variables and for self representations. Analyses revealed that social stars had significantly more positive mother/family representations than did average,  $t(77) = 2.39, p < .01$ , and disliked,  $t(77) = 2.18, p < .05$ , children. Social stars also had significantly more positive peer representations than did average,  $t(77) = 3.06, p < .005$ , disliked,  $t(77) = 2.30, p < .05$ , and neglected,  $t(77) = 1.70, p < .05$ , children. Finally, social stars had significantly more positive self representations than did average,  $t(65) = 3.75, p < .0001$ ,

disliked,  $t(65) = 1.68, p < .05$ , and neglected,  $t(65) = 2.36, p < .05$ , children. No significant differences were found among the average, disliked, and neglected groups.

*Mediational role of peer representations.*—Finally, children's peer representations were hypothesized to mediate the relation between mother/family representations and social functioning. A direct statistical test of mediation was conducted via a series of multiple regressions (following Baron & Kenny, 1986). The composite measure of mother/family representations served as the independent variable, the composite measure of peer representations served as the mediator, and teacher ratings of peer rejection served as the dependent variable (scores from the conflict task were not used due to the small sample size). As displayed in Table 5, the conditions required for perfect mediation were met: (1) In equation 1, mother/family representations significantly predicted peer representations; (2) in equation 2, mother/family representations significantly predicted peer rejection; (3) in equation 3, mother/family representations no longer made a significant contribution to the prediction of peer rejection after entering peer representations.

### DISCUSSION

The overall pattern of results supported the predicted association between cognitive representations of relationships and actual peer competence, operationalized in terms

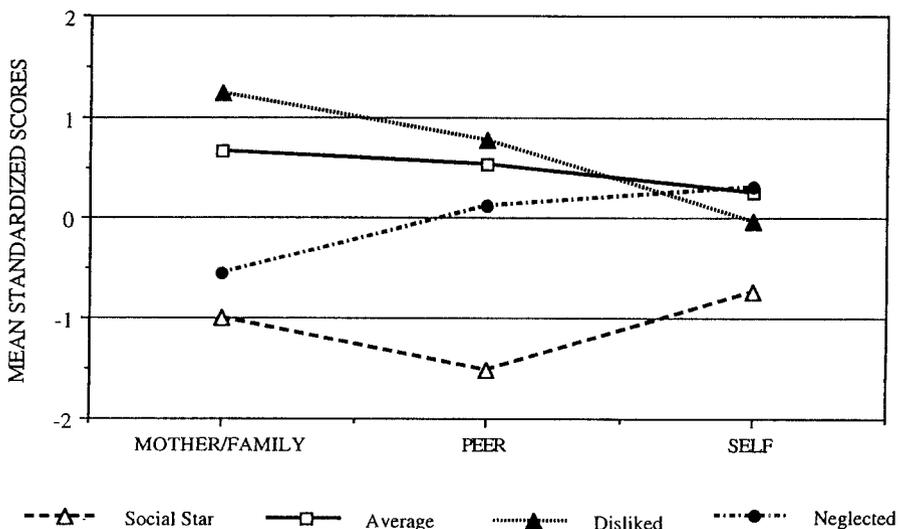


FIG. 1.—Mean standardized scores on negative family, peer, and self representations by sociometric groups.

TABLE 5

MULTIPLE REGRESSION ANALYSES FOR PREDICTING PEER REJECTION FROM MOTHER/FAMILY AND PEER REPRESENTATIONS

Predictors	Outcome	Standardized Beta	p Value at Final Step <sup>a</sup>	Cumulative Adjusted R <sup>2</sup>
1. Mother/family Representations .....	Peer representations	.52	.0000	.26
2. Mother/family Representations .....	Peer rejection	.29	.0076	.08
3. Mother/family Representations .....	Peer rejection	.12	.3350	.08
Peer representations .....		.34	.0055	.15

NOTE.— $n = 81$ .<sup>a</sup> Values reflect the level of significance for beta weights based on  $t$  tests at the final step.

of observer ratings of social behavior and peer responses during a conflict-negotiation task, and teacher report of sociometric status. An empirical foundation also was established for the role of peer representations as *mediators* between family representations and social functioning.

Observational data revealed consistent relations between representations of the mother/family and impairment in each aspect of the conflict-negotiation task. Peer representations were specifically associated with dyadic quality and peer responses, and self representations were only marginally correlated with dyadic quality. Negative representations in each interpersonal domain were significantly associated with higher levels of peer rejection. As would be predicted by theoretical assumptions regarding the mode of transmission of transactional patterns from family to peer group, the impact of family representations on peer rejection was mediated by children's beliefs about their peers.

In terms of specific sociometric groups, social stars possessed the most positive representations within each interpersonal domain. Contrary to predictions, no significant differences were found among the three remaining status groups. This pattern resembles findings from another study in which children's expectations of others' responses to their loneliness discriminated popular from average and rejected children but did not discriminate between the latter two groups (Cassidy & Asher, 1994). However, it is also possible that the small sample sizes in the disliked and neglected groups resulted in limited power. In fact, the overall profiles did appear to vary. For example, whereas the disliked group differed from social stars in all three domains, the neglected

group did not differ significantly in the negativity of mother/family representations. In light of previous findings regarding the importance of differentiating between social rejection and neglect (e.g., Patterson et al., 1990), additional research into the configurations of cognitive representations characteristic of these two groups would be worthwhile.

The distinct patterns of association that emerged between representations and various aspects of children's interpersonal competence are noteworthy. Negative representations in all three domains predicted increased teacher-rated peer rejection, but self representations were not significantly associated with any of the behavioral indices on the conflict task, and only mother/family representations were associated with conflict-negotiation and affect-regulation skills. These results need to be replicated in larger samples, but they suggest that family, peer, and self representations may influence peer relationships through different pathways.

#### Conclusions and Future Directions

The present study lays the groundwork for understanding the mechanisms linking relationships and behavior in different interpersonal domains. Findings were consistent with a conceptualization of cognitive representations as complex, multifaceted networks of beliefs and interpersonal expectancies, which serve as templates for the active processing of social information and which have implications for peer competence. Yet several limitations should be noted that may serve as a foundation for future work. We focused primarily on representations of the mother-child relationship. However, given the growing literature highlighting the importance of father-child relationships in the evolution of peer competence (e.g., Cohn et

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al., 1991; McDonald & Parke, 1984), it will be critical to compare the relative impact of mother- and father-child relationships on long-term adjustment. Also, the effect of demographic variables, such as parental marital status, ethnicity, and socioeconomic status, on the observed relations needs further investigation.

This study also is restricted in terms of its delineation of directional pathways and lack of information about actual family interactions. Theoretically, the family environment is viewed as the fundamental context in which children formulate an understanding of social relationships and develop patterns of social interaction. Positive experiences within the family are presumed to act as a stepping stone to adjustment by instilling a prosocial orientation in children; negative experiences are believed to constitute an obstacle to adjustment by instilling a sense of interpersonal resentment or disappointment. Results confirmed linkages between concurrent representations of family, peers, and self, but conclusions cannot be drawn regarding the temporal precedence of family representations.

Likewise, findings from Part 2 shed light on the connection between cognitive representations and peer competence, yet results are consistent with several etiological explanations of the interplay between these two domains. The underlying mechanism proposed here is that children actively participate in the construction of their social worlds, such that negative beliefs drive their behavior and interfere with the growth of social skills and coping abilities. Thus, children's representations at times may be distortions, shaped perhaps by early experiences, but then erroneously generalized to later relationships. Alternatively, negative representations may result from repeated aversive social experiences. In this case, representations would be viewed as accurate reflections of social reality. Understanding how early parent-child interactions shape the acquisition of cognitive representations and social competence, and determining the primacy of cognitions versus competence will require longitudinal research. Interestingly, results from our conflict task do provide preliminary support that, at the very least, children with preexisting negative representations engage in more dysfunctional interactions in a novel context and elicit negative reactions from unknown peers.

The direction of causality also has significant implications for how to interpret the strength of association between self-reported cognitive representations and actual peer competence/acceptance. This relation in part may be viewed as an index of external validity of self-report measures. Yet if generalized representations emerge from early interpersonal experiences, low correlations may reflect distortions in children's perceptions, rather than lack of validity of the instruments (see Patterson et al., 1990, for a related discussion). The accuracy of representations is therefore an important topic for future study.

Finally, knowledge about the mechanisms involved in the intergenerational transmission of dysfunction may offer clues as to the efficacy of interventions for children with social difficulties. If disturbed family relations promote maladjustment primarily through the internalization of negative beliefs, identification and modification of such cognitions would be important. Even if representations act only to maintain prior impairment, early intervention may disrupt this escalating cognitive-interpersonal cycle and decrease children's vulnerability to future socioemotional problems. Exploring the channels through which parent-child relationships influence psychosocial development represents a promising direction for the creation of comprehensive theoretical models of social competence and effective treatment programs.

## References

- Armentrout, J. A. (1972). Sociometric classroom popularity and children's reports of parental childrearing behaviors. *Psychological Reports*, *30*, 261-262.
- Armsden, G. C., & Greenberg, M. T. (1987). The Inventory of Parent and Peer Attachment: Individual differences and their relationship to psychological well-being in adolescence. *Journal of Youth and Adolescence*, *16*, 427-454.
- Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin*, *112*, 461-484.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.
- Booth, C. L., Rose-Krasnor, L., & Rubin, K. H. (1991). Relating preschoolers' social competence and their mothers' parenting behaviors

- to early attachment security and high-risk status. *Journal of Social and Personal Relationships*, 8, 363-382.
- Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation*. New York: Basic.
- Bretherton, I. (1985). Attachment theory: Retrospect and prospect. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research* (pp. 3-35). *Monographs of the Society for Research in Child Development*, 50 (1-2, Serial No. 209).
- Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship: An attachment story completion task for 3-year-olds. In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 273-308). Chicago: University of Chicago Press.
- Cassidy, J. (1988). Child-mother attachment and the self in six-year-olds. *Child Development*, 59, 121-134.
- Cassidy, J. (1990). Theoretical and methodological considerations in the study of attachment and the self in young children. In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 87-113). Chicago: University of Chicago Press.
- Cassidy, J., & Asher, S. R. (1994). *Young children's thinking about loneliness*. Manuscript submitted for publication.
- Cassidy, J., Parke, R. D., Butkovsky, L., & Braungart, J. M. (1992). The roles of emotional expressiveness within the family and children's understanding of emotions. *Child Development*, 63, 603-618.
- Cicchetti, D., Cummings, E. M., Greenberg, M., & Marvin, R. (1990). An organizational perspective on attachment beyond infancy. In M. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 3-49). Chicago: University of Chicago Press.
- Cohn, D. A. (1990). Child-mother attachment of six-year-olds and social competence at school. *Child Development*, 61, 152-162.
- Cohn, D. A., Patterson, C. J., & Christopoulos, C. (1991). The family and children's peer relations. *Journal of Social and Personal Relationships*, 8, 315-346.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58, 644-663.
- Crittenden, P. M. (1990). Internal representational models of attachment relationships. *Infant Mental Health Journal*, 11, 259-277.
- Dishion, T. J. (1990). The family ecology of boys' peer relations in middle childhood. *Child Development*, 61, 874-892.
- Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development*, 54, 1386-1399.
- Dodge, K. A. (1985). Attributional bias in aggressive children. In P. C. Kendall (Ed.), *Advances in cognitive-behavioral research and therapy*, 4, 73-110.
- Dodge, K. A., & Frame, C. L. (1982). Social cognitive biases and deficits in aggressive boys. *Child Development*, 53, 620-635.
- Dubow, E. F., & Ullman, D. G. (1989). Assessing social support in elementary school children: The Survey of Children's Social Support. *Journal of Clinical Child Psychology*, 18, 52-64.
- Erickson, M. F., Sroufe, L. A., & Egeland, B. (1985). The relationship between quality of attachment and behavior problems in preschool in a high-risk sample. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research* (pp. 147-166). *Monographs of the Society for Research in Child Development*, 50 (1-2, Serial No. 209).
- Ghiselli, E. E., Campbell, J. P., & Zedeck, S. (1981). *Measurement theory for the behavioral sciences*. New York: W. H. Freeman.
- Gottman, J. M. (1991). Finding the roots of children's problems with other children. *Journal of Social and Personal Relationships*, 8, 441-448.
- Greenberg, M. T., Siegel, J. M., & Leitch, C. J. (1983). The nature and importance of attachment relationships to parents and peers during adolescence. *Journal of Youth and Adolescence*, 12, 373-384.
- Hammen, C., & Zupan, B. A. (1984). Self-schemas, depression, and the processing of personal information in children. *Journal of Experimental Child Psychology*, 37, 598-608.
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524.
- Ladd, G. W. (1991). Family-peer relations during childhood: Pathways to competence and pathology? *Journal of Social and Personal Relationships*, 8, 307-314.
- Ladd, G. W. (1992). Themes and theories: Perspectives on processes in family-peer relationships. In R. Parke & G. W. Ladd (Eds.), *Family-peer relationships: Modes of linkage*. Hillsdale, NJ: Erlbaum.
- Lieberman, A. F. (1977). Preschoolers' competence with a peer: Relations with attachment and peer experience. *Child Development*, 48, 1277-1287.
- Litovsky, V. G., & Dusek, J. B. (1985). Perceptions of child rearing and self-concept develop-

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- ment during the early adolescent years. *Journal of Youth and Adolescence*, **14**, 373-387.
- Lochman, J. (1987). Self and peer perceptions and attributional biases of aggressive and nonaggressive boys in dyadic interactions. *Journal of Consulting and Clinical Psychology*, **55**, 404-410.
- Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and adulthood: A move to the level of representation. In I. Bretherton & E. Waters (Eds.), *Growing points of attachment theory and research* (pp. 66-104). *Monographs of the Society for Research in Child Development*, **50** (1-2, Serial No. 209).
- Margolies, P. J., & Weintraub, S. (1977). The revised 56-item CRPBI as a research instrument: Reliability and factor structure. *Journal of Clinical Psychology*, **33**, 472-476.
- Matas, L., Arend, R., & Sroufe, L. A. (1978). Continuity of adaptation in the second year: The relationship between quality of attachment and later competence. *Child Development*, **49**, 547-556.
- McDonald, K. B., & Parke, R. D. (1984). Bridging the gap: Parent-child play interaction and interactive competence. *Child Development*, **55**, 1265-1277.
- Pastor, D. L. (1981). The quality of mother-infant attachment and its relationship to toddlers' initial sociability with peers. *Developmental Psychology*, **17**, 326-335.
- Patterson, C. J., Kupersmidt, J. B., & Griesler, P. C. (1990). Children's perceptions of self and of relationships with others as a function of sociometric status. *Child Development*, **61**, 1335-1349.
- Peery, J. C., Jensen, L., & Adams, G. R. (1985). Relationships between parents' attitudes regarding child-rearing and the sociometric status of preschool children. *Journal of Personality*, **119**, 567-574.
- Pettit, G. S., Dodge, K. A., & Brown, M. M. (1988). Early family experience, social problem solving patterns, and children's social competence. *Child Development*, **59**, 107-120.
- Pettit, G. S., Harrist, A. W., Bates, J. E., & Dodge, K. A. (1991). Family interaction, social cognition and children's subsequent relations with peers at kindergarten. *Journal of Social and Personal Relationships*, **8**, 383-402.
- Putallaz, M. (1987). Maternal behavior and children's sociometric status. *Child Development*, **58**, 324-340.
- Rabiner, D. L., Keane, S. P., & MacKinnon-Lewis, C. (1993). Children's beliefs about familiar and unfamiliar peers in relation to their sociometric status. *Developmental Psychology*, **29**, 236-243.
- Roff, M., Sells, S. B., & Golden, M. M. (1972). *Social adjustment and personality development in children*. Minneapolis: University of Minnesota Press.
- Rogers, T. B., Kuiper, N. A., & Kirker, W. S. (1977). Self-reference and the encoding of personal information. *Journal of Personality and Social Psychology*, **35**, 677-688.
- Rudolph, K. D., Hammen, C., & Burge, D. (1994a). Interpersonal functioning and depressive symptoms in childhood: Addressing the issues of specificity and comorbidity. *Journal of Abnormal Child Psychology*, **22**, 355-371.
- Rudolph, K. D., Hammen, C., & Burge, D. (1994b). *A cognitive-interpersonal approach to depressive symptoms in preadolescent children*. Manuscript submitted for publication.
- Safran, J. D. (1990). Towards a refinement of cognitive therapy in light of interpersonal theory: I. Theory. *Clinical Psychology Review*, **10**, 87-105.
- Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, **87**, 245-251.
- Suess, G. J., Grossmann, K. E., & Sroufe, L. A. (1992). Effects of infant attachment to mother and father on quality of adaptation in preschool: From dyadic to individual organization of self. *International Journal of Behavioral Development*, **15**, 43-65.
- Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development*, **50**, 821-829.
- Westen, D. (1991). Social cognition and object relations. *Psychological Bulletin*, **109**, 429-455.
- Zupan, B. A., Hammen, C., & Jaenicke, C. (1987). The effects of current mood and prior depressive history on self-schematic processing in children. *Journal of Experimental Child Psychology*, **43**, 149-158.

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