A MODEL OF YOUNG CHILDREN'S SOCIAL COGNITION: LINKAGES BETWEEN LATENT STRUCTURES AND DISCRETE PROCESSING

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A dissertation

Submitted to

the Graduate Faculty of

Auburn University

in Partial Fulfillment of the

Requirements for the

Degree of

Doctor of Philosophy

Auburn, Alabama

August 30, 1999

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DISSERTATION ABSTRACT

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Doctor of Philosophy August 30, 1999
(M.S., Auburn University, 1994)
(B.A. Huntingdon College, 1990)

254 typed pages

Directed by Jacquelyn Mize

This study proposes a model of associations between young children's social cognition and their social behavior with peers. In this model, two latent structures –children's representations of peer relationships and emotion regulation -- predict children's competent, prosocial, withdrawn, and aggressive behavior. Moreover, the model proposes that links between these two latent structures and children's social behavior are mediated by three discrete social-cognitive processes: encoding of social cues, hostile attributions, and social strategy generation. It was further hypothesized that the discrete social-cognitive processes would be associated with social behavior when children's receptive vocabulary was controlled, and that encoding of social cues, hostile attributions, and social strategy generation would make independent contributions to the

prediction of social behavior.

Subjects were 83 4- and 5-year-old children who completed multiple assessments that were developed or adapted to measure cognitive representations of relationships and each of the three discrete social-cognitive processes. Mothers and teachers rated children's emotion regulation, and teachers rated children's social behavior. Results indicated that, by and large, associations between the discrete social-cognitive processes and social behavior remained significant when verbal ability was controlled. However, there were fewer significant associations between discrete social-cognitive processing variables and children's social behavior. Moreover, there was no evidence to support the hypothesis that discrete social-cognitive variables would make unique contributions to the prediction of social behavior when other aspects of discrete social-cognitive processing were controlled.

Measures of cognitive representations of relationships and emotion regulation were associated with measures of social behavior. Evidence supporting two of five hypothesized mediational paths was found for one of the two measures of cognitive representations. Evidence for an additional mediational path that was not hypothesized also was found. No evidence was found for mediational paths from the second measure of representations of relationships.

No evidence supporting mediational models involving emotion regulation was obtained. Post-hoc analyses suggested that associations between hostile

attributions and aggressive behavior was moderated by emotion regulation. Results suggest that pathways connecting children's emotion regulation, representations of peer relationships, discrete social cognitions, and social behavior are complex, specific, and interacting.

ACKNOWLEDGMENTS

The author would like to thank Dr. Jacquelyn Mize for her guidance and support throughout this project. The author also would like to thank Dr. Gregory Pettit for his helpful comments on an earlier draft of this work, as well as committee members Dr. Brian Vaughn, Dr. Tom Smith, and Dr. Steve Silvern for their input. Thanks also are due to family members Arthur and Regina Meece and Cheryla Everly, and to Melissa White, for their support during the course of this investigation.

Style manual or journal used

Guide to Preparation and Submission of Theses and Dissertations; Publication Manual of the American Psychological Association, 4th Edition

Computer software used

Corel Wordperfect 8.0; SPSS 8.0

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INTRODUCTION

Interaction with peers plays an important role in young children=s development (Cassidy & Asher, 1992; Coie & Cillessen, 1993; Hartup, 1983; Ladd & Price, 1987; Olson & Brodfeld, 1991). Individual differences are apparent in the social behavior of children as young as 14 to 24 months (Howes & Matheson, 1992), and young children=s social competence and peer acceptance show moderate stability over the preschool years (Ladd & Price, 1987). Moreover, measures of young children=s social competence and peer acceptance predict children=s adjustment during the transition to kindergarten and elementary school (Ladd & Price, 1987; Ladd, Price & Hart, 1988; Olson, 1992).

Researchers convinced of the importance of early social interaction have sought to identify factors that contribute to variations in young children=s behavior with peers and peer acceptance. Some research and theory has focused mainly on factors external to the child, such as the role that relationships with family members might play in shaping young children=s interaction with same-age peers. Several theorists also have concentrated on characteristics internal to the child. Three areas of research that focus on factors within the child (as opposed to external influences such as parenting or environmental elements) may be especially useful for understanding influences on young children=s social

behavior: (a) discrete social-cognitive processes, (b) cognitive representations of relationships, and (c) emotion regulation.

Discrete social-cognitive processes involve children=s cognitions about immediate and specific social events. This body of research primarily has been inspired by social-information-processing models (Crick & Dodge, 1994; Dodge, 1986) and models from the social-learning perspective (Ladd & Mize, 1983), both of which describe sequences of cognitive events thought to guide behavior in a particular social exchange. Discrete processes include detection, or encoding, of social cues, interpretation of social cues (often referred to as attributions of intent), and generation of social strategies in response to social cues. Young children=s discrete social cognitions typically have been assessed by asking children to react to specific, usually hypothetical, social situations. Measurement of children=s encoding of social cues most often involves assessing the accuracy of children=s descriptions of the social event. Children=s attributions are assessed by asking children to explain why a peer behaved in a certain way. This is often accomplished by asking children if a character presented in the hypothetical story was being mean or not being mean, or by coding children=s descriptions of a social event for spontaneously occurring hostile attributions. Young children=s social strategy generation is usually measured by asking them what they would do if confronted by a situation like the one presented in the hypothetical story.

Correlational research generally is consistent with the premise that measures of these three discrete social cognitions are associated with young children=s social behavior. Several studies demonstrate that the ability to attend to and encode relevant social cues is linked with positive social behavior (Dodge, Pettit, McClaskey & Brown, 1986; Putallaz, 1983). Another group of studies suggests that, among young children, the tendency to interpret ambiguous social cues as hostile is associated with aggressive behavior with same-age peers (Dodge, Bates, & Pettit, 1990; Meece, Pettit, & Mize, 1995; Weiss, Dodge, Bates, & Pettit, 1992). A third group of studies demonstrates that preschoolers= social strategy responses that are more relevant to the social problem (Pettit, Dodge, & Brown, 1988), more effective (Asher & Renshaw, 1981), and more prosocial or friendly and less hostile (Asher & Renshaw, 1981; Eisenberg, Fabes, Minore, & Mathy, 1994; Mize & Ladd, 1988; Pettit et al., 1988) are associated with prosocial behavior and peer acceptance.

Thus, current evidence suggests that measures of these three discrete social-cognitive processes are associated with young children=s social behavior, at least when assessed independently. Although both social-learning theory and social-information processing theory propose that several social-cognitive processes are implicated in guiding young children=s behavior, studies of various aspects of young children=s discrete social cognition have, for the most part, examined only a single domain of discrete social cognitions. Rarely do studies

evaluate whether measures of discrete social cognition make incremental contributions to the prediction of social behavior or peer behavior.

In one of three exceptions, Dodge and his colleagues (1986), collected 13 measures of discrete social cognition in two samples (kindergartners through second-graders, and second- through fourth-graders). In both samples, only 1 of the 13 social-cognitive variables made a significant independent contribution to the prediction of ratings of peer-group entry success, although the group of 13 social-cognitive variables accounted for a sizable proportion of the variance in ratings of group entry success (at least 38%). These findings suggest that there is considerable shared variance in measures of young children=s discrete social cognition. The high percentage of shared variance may indicate that the variables studied by Dodge and his colleagues serve as indicators of a single underlying factor.

The findings reported by Dodge et al. (1986) are not consistent, however, with those reported in the second study that has evaluated the independent contribution of multiple aspects of discrete social cognition in predicting young children=s social behavior (Meece, Mize, & Pettit, 1995). In the Meece et al. (1995) study of 4- and 5-year-olds, measures of social cue-encoding, hostile attributions, and social-strategy generation each made independent contributions to the prediction of teacher ratings of peer competence.

In the third study that has included measures of multiple domains of discrete processing, Dodge and Price (1994) assessed first- through third-

graders= encoding of cues, hostile attributions, and strategy generation in two peer-oriented contexts: peer-group entry and provocation from a peer. For the group-entry situation, only encoding of social cues provided a significant, unique contribution to the prediction of peer- and teacher-rated peer competence. For the peer provocation scenario, only social strategy generation provided a significant contribution to the prediction of peer competence. Thus, to date it remains unclear if measures of discrete social cognitions provide unique contributions to the prediction of young children=s social behavior and peer competence.

In addition to problems of potential overlap, most studies of young children=s discrete social-cognitive processes have not controlled for individual differences in children=s general intelligence or verbal ability. This is a particular concern because these studies often employ methodologies that require that children understand verbally presented hypothetical situations and stories, as well as interviewers= spoken instructions and questions. Given that general intelligence has been linked with competence with peers (Hartup, 1983), it may be the case that associations between measures of discrete social-cognitive processes and children=s social behavior are at least partially a reflection of joint associations between children=s maturational level, general intelligence, or verbal ability, and measures of both children=s social cognition and peer competence. Only a few researchers have controlled for measures of general verbal ability or intelligence, and results of these studies remain inconclusive. For

example, Putallaz (1983) reports that associations between encoding of social cues and competence with peers remained significant when measures of general intelligence were controlled. In contrast, Meece et al. (1995) report that, among their sample of 4- and 5-year-olds, associations between encoding of social cues and teacher-rated peer competence were no longer significant when controlling for receptive vocabulary. These findings suggest that it is important to control for individual differences in children=s verbal ability when employing measures of discrete social cognition that require children to respond verbally and understand verbal instructions or dialogue.

The second area of research and theory that has examined precursors of young children=s social behavior with peers centers on children=s cognitive representations of relationships. Theorists and researchers from multiple perspectives have posited that deeper, more generalized cognitive representations of relationships may guide or constrain discrete social-cognitive processing. These more global representations may be thought of as latent structures, reflecting the idea (as in structural equation modeling) that underlying, causal structures are assumed to be manifested in immediate, proximal, and perhaps more easily measured, behaviors or thought processes. The distinction between discrete processes and latent representations of relationships is that discrete processes represent relatively brief cognitive events that influence immediate social behavior, whereas latent representations of relationships are

seen as more enduring, trait-like, conceptualizations of others and the self in relation to others.

Working from a primary focus on discrete processes, Dodge and his colleagues (Burks, Laird, Dodge, Pettit, & Bates, 1999; Crick & Dodge, 1995; Dodge, 1986) proposed that a memory database of prior social experiences form knowledge structures (referred to here as latent representations of relationships) that shape or influence on-line processing (i.e., discrete processes) in a particular social exchange. Starting from a focus on more global latent structures, attachment theorists suggest that broader structures guide more proximal cognitions in a given social context (Bretherton, 1995). More specifically, attachment theory (Bowlby, 1969) suggests that early experiences with caregivers are encoded into abstract cognitive representations known as internal working models of relationships. Through internal working models, children=s conceptions of relationships as positive or negative are carried forward to subsequent social interactions, guiding perceptions, expectations, and behavior. Concepts from social-cognitive psychology, though non-developmental, provide a third framework for conceptualizing latent cognitive structures. Researchers working within this view have described knowledge structures such as trait constructs and stereotypes that exert unintended, passive influence on subsequent interpretations of behavior (Bargh, 1994; Higgins, 1989). The term Apriming@ refers to the activation of such knowledge structures, or constructs, by the characteristics of a given situational context or recent events (Bargh, Chen, &

Burrows, 1996). Researchers postulate that certain types of constructs (angry and hostile vs. happy and playful, for example) might become chronically primed and more easily accessible due to past experience and environmental factors (Coie & Dodge, 1998; Graham & Hudley, 1994).

Thus, according to attachment theory, social-information processing theory, and social-cognitive psychology, latent representations of others and of the self in relation to others are the product of past social interaction experiences. The latent representations, in turn, exert influence upon current social-cognitive processing and social behavior. Implicit in each of these perspectives is the idea that discrete social-cognitive processes mediate associations between cognitive representations and social behavior. Only recently, however, has serious attention been given to possible links between broader structures and on-line processing (Cassidy, Kirsh, Scolton, & Parke, 1996; Crick & Dodge, 1995).

Although several theoretical models propose that latent cognitive representations guide or constrain on-line processing (Bowlby, 1969; Bretherton, 1995; Crick & Dodge, 1995; Dodge, 1986; Rudolph, Hammen, & Burge, 1995), few empirical studies have explicitly examined this link. This dearth of research may be due, at least in part, to the difficulty in developing measures of latent representations that are distinct from measures of discrete cognition. In fact, some studies have operationalized cognitive representations using methodology traditionally employed to assess discrete processes (e.g., Cassidy et al., 1996). Additionally, there is some difficulty in assessing young children=s perceptions of

others and their perceptions of themselves in relation to others as separate constructs. On a conceptual level, attachment theorists hold that representations of the self and of others are functions of children=s experience in social relationships (Cassidy, 1990), and so should be inextricably linked. Pragmatically, it is unclear if a statement such as Achildren at my school like me@ reflects positive views of peers, positive views of the self, or both. For these reasons, it is useful to conceptualize children=s feelings and beliefs about their peers and about themselves in relation to peers as a single construct, and the term Arepresentations of relationships@ will be used in this paper to refer to these latent cognitive structures.

Although there are, to date, scant data linking young children=s representations of relationships with their discrete social-cognitive processing, associations have been found between children=s cognitive representations of relationships and their social functioning (Asher, Hymel, & Renshaw, 1984; Asher & Wheeler, 1985; Cassidy, 1988; Crick & Ladd, 1993; Hymel, Bowker, & Woody, 1993; Patterson, Kupersmidt, & Griesler, 1990; Rabinar, Keane, & Mackinnon-Lewis, 1993; Rudolph et al., 1995). Although well-liked children generally have more positive views of the self (Cassidy, 1993; Rudolph et al., 1995) and their peers (Rabiner et al., 1993; Rudolph et al., 1995; Seuss, Grossman, & Sroufe, 1992) than do rejected children, associations between patterns of social behavior and representations of self and others are more complex. Studies have failed to find significant associations between measures of children=s aggressive

behavior and their perceptions of peers (Rabiner et al., 1993) or their perceptions of the self in relation to others (Schaughency, Frame, & Strauss, 1987). In fact, peer-rejected aggressive children tend to overestimate their social self competence (Hymel et al., 1993; Patterson et al., 1990), in comparison to the views of their classmates. Also, some data suggest that withdrawn children report more negative (though accurate) social self-perceptions than do average and aggressive children (Hymel et al., 1993).

The third burgeoning line of research on characteristics associated with variations in young children=s social functioning points to children=s emotion regulation as a predictor of individual differences in social behavior (Calkins, 1994; Dunn & Brown, 1991; McDonald & Parke, 1986; Thompson, 1994). Thompson (1994) defines emotion regulation as the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions in order to accomplish one=s goals. Young children=s emotion regulation has been operationalized using various methodologies, including naturalistic observation of classroom or playground behavior, recording of physiological indices (such as heart rate and vagal tone) while an emotionally charged stimulus is presented, and parent or teacher ratings.

Thompson suggests that discrete social processes such as encoding social cues, interpreting social cues, and generating social strategies are influenced by children=s emotion regulation. For instance, when presented with a provocation from a peer, children who are able to remain calm might better be

able to reflect carefully upon the circumstances and produce more competent strategies. In contrast, children who are not skilled at Akeeping their cool@ might be more likely to interpret the actions of peers in a hostile way or to generate angry or aggressive strategies or to whine and cry (Gottman, Katz, & Hooven, 1996). Currently, there is only indirect evidence that emotion regulation influences on-line processing. Dodge and Somberg (1987) report that aggressive children were more likely to interpret peers= intentions as hostile when under stress of perceived threat than when they were not.

As was the case with research on children=s representations of self and peers, studies have linked children=s regulation of emotion with their social behavior and peer competence. The ability to regulate emotion at age 4 -- as indexed physiologically by the ability to suppress vagal tone -- predicts competent peer relations at age 8 (Gottman et al., 1996). Additionally, preschool children classified as poor emotion regulators who display low amounts of social interaction have been observed to display more anxious and wary social behaviors (Rubin, Coplan, Fox, & Calkins, 1995), whereas preschool children classified as poor emotion regulators who display high amounts of social interaction have been observed to display more disruptive and externalizing behaviors than do other children (Cole, Fox, Zahn-Waxler, Usher, Welsh, 1996; Rubin et al., 1995).

Although theorists from multiple perspectives have proposed that both cognitive representations of relationships and emotion regulation may guide or

constrain young children=s discrete social-cognitive processing, and consequently influence young children=s social behavior with peers and peer acceptance, to date these hypotheses largely remain conjecture. The purpose of this study is to examine constructs thought to represent discrete cognitive processes in young children (specifically, encoding of social cues, attributions of intent, and social strategy generation) in relation to measures designed to reflect two more global, latent, structures: emotion regulation and cognitive representations of self and peers. An attempt will be made to ascertain if discrete cognitive processes mediate associations between the independent variables (latent representations of relationships and emotion regulation) and the dependent variables (young children=s social behavior and competence with peers). Further, because of concern with potential confounding between measures of social cognition and general verbal ability, verbal ability will be controlled.

Although many studies employ a single criterion, or class of criteria, it is possible that specific dimensions of discrete social cognition are related differentially to distinct aspects of social behavior. For example, a large body of literature has linked hostile attributions with aggressive behavior (Dodge et al., 1990; Meece et al., 1995; Weiss et al., 1992). In contrast, the generation of prosocial and friendly social strategies has been tied to prosocial behavior and peer competence (Asher & Renshaw, 1981; Eisenberg et al., 1994; Mize & Ladd, 1988; Pettit et al., 1988). Also, studies that have included measures of more than

a single domain of discrete social-cognitive processing provide evidence that patterns of associations between discrete processes and behavior vary as a function of behavioral task (Dodge et al., 1986; Meece et al., 1995). For example, Dodge and his colleagues (1986) report that children=s ratings of their own behavior[1] and the number of social strategies significantly predicted ratings of group-entry success, whereas hostile attributions and the generation and endorsement of hostile social strategies significantly predicted ratings of children=s responses to a peer provocation. As previously discussed, it also is the case that representations of relationships are associated with competent and withdrawn behaviors, but have not been linked to aggressive behavior (Hymel et

[1]Dodge=s (1986) model of social-information processing includes behavioral enactment of a social strategy as a final step. Behavioral enactment is not included as a social-cognitive process in the current work, because the current work is interested in the *precursors* of children=s social behavior. The variable assessed by Dodge and his colleagues is a rating that children made of their own behavioral success in the observed group-entry attempt. It might be argued that this finding reflects the percentage of agreement between the observers= and the children=s ratings of the children=s behavior during the group-entry attempt. However, such a rating of children=s behavior is not consistent with the concept of discrete social-cognitive processing as utilized in the current work.

al., 1993; Patterson et al., 1990). For these reasons, multiple aspects of social behavior (aggressive behavior, withdrawn behavior, competent behavior) will be utilized to examine a series of specific models of the precursors of young children=s social behavior.

First, it is proposed in the current work that more positive representations of relationships, and also emotion regulation skill, predict more accurate encoding of social cues and more sophisticated social strategies, and that this more positive discrete processing is associated with prosocial behavior and with competent behavior with peers. This hypothesis is based on research that has tied both representations of relationships (Rabiner et al., 1993; Rudolph et al., 1995; Seuss et al., 1992) and emotion regulation (Gottman et al., 1996) to peer competence. The second step of this hypothesis also is grounded in empirical findings: Both the encoding of social cues (Dodge et al., 1986; Putallaz, 1983), and the generation of social strategies that are relevant to the social problem and more effective (Asher & Renshaw, 1981; Pettit et al.; 1988), have been tied to positive social behavior and peer competence. Although theory suggests that both representations of relationships (Bowlby, 1969; Crick & Dodge, 1991) and emotion regulation (Thompson, 1994) are implicated in children=s discrete social-cognitive processing, this link has not been tested empirically. Following from this research and theory, a prototypical child who views playmates as fun and rewarding and views herself as competent in peer interaction, and who is adept at soothing excitable and negative emotions, might be more likely to attend

to the actions of peers and to generate more relevant and circumspect social strategy responses.

Second, it is proposed that poorer skill at emotion regulation predicts both the generation of social strategies that are more hostile and an increased tendency to make hostile attributions. These discrete processes, in turn, predict aggressive behavior with peers. This hypothesis is based on research linking poor emotion regulation to aggressive behavior (Cole et al., 1996; Gottman et al., 1996; Rubin et al., 1995)[2]. The second step in this hypothesis is based upon research from the discrete processing literature linking hostile attributions and aggressive social strategies with young children=s aggressive behavior (Dodge et al., 1986; Dodge et al., 1990; Meece et al., 1995; Weiss et al., 1992). Evidence for the first step of this hypothesis, that poor emotion regulation is linked with discrete social cognitions, is more tenuous. Dodge and Somberg (1989) report that aggressive children=s hostile attribution biases are exacerbated under conditions of threat (and so, seemingly, emotional arousal), suggesting that negative emotional arousal may trigger hostile thoughts. It seems reasonable

[2] Some research (Rubin et al., 1995) suggests that links between emotion regulation and both withdrawn behavior and aggressive behavior may be moderated by the quantity of children=s peer interactions. One limitation of the current work is that the quantity of children=s peer interactions was not assessed.

that a child who is unable to soothe and calm herself during rowdy play or peer conflict might be more likely to view ambiguous behavior of playmates as hostile, and also might generate hostile social strategy responses to playmates= overtures.

Finally, it is proposed that less positive representations of relationships, and also less skillful emotion regulation, predict the generation of social strategies that are more passive and withdrawing, which predicts withdrawing behavior. This hypothesis is based, first, upon findings that withdrawn children who are rejected by peers hold more negative self-views than do average status children (Hymel et al., 1993; Patterson et al., 1990). Second, poor emotion regulation is associated not only with aggressive behavior (as previously discussed), but also predicts anxious and wary social behavior (Rubin et al., 1995). Empirical support exists for the second step in this hypothesis, linking passive social strategies to withdrawn behavior (Meece et al., 1995). However, there is to date scant empirical support for the first step in this hypothesis, i.e. that representations of relationships and emotion regulation are linked to the generation of passive social strategies. It seems reasonable that, for example, a child who feels that he is unlikeable or incapable of social interaction may generate a strategy Ato go somewhere else@ when confronted by a play overture from a classmate. Likewise, a child who is not skilled in regulating her emotions might want to Aget away@ when confronted with stimulating - and perhaps frightening - social encounters, and so might generate passive social strategies.

LITERATURE REVIEW

This review focuses mainly on research that has been conducted with preschoolers and kindergartners, and that is relevant to the three main hypotheses proposed in the current work. The review is divided into three main sections. First, empirical studies that have examined links between young children=s social behavior with peers and peer competence and three discrete social-cognitive processes (encoding of cues, interpretation of cues, and generation of social strategies) are reviewed. The next section focuses primarily on theoretical views of children=s representations of relationships (attachment theory, social-cognitive psychology, and social-information-processing theory), because only scant empirical data focusing upon this construct currently exist. The final section focuses on a review of the empirical literature linking children=s emotion regulation to social outcomes, as well as empirical research and theory linking children=s emotion regulation to discrete social-cognitive processing.

Discrete Social-cognitive Processes and Social Behavior and Peer Competence

Several models of children=s social cognition that focus upon children=s discrete processing have been proposed (Crick & Dodge, 1994; Dodge et al., 1986; Ladd & Mize, 1983; Meece, 1994; Pettit & Mize, 1993; Rubin & Krasnor,

1986). These models typically suggest that several cognitive and affective skills, such as attention to and encoding of social cues, interpretation of stimuli that have been encoded, and the generation of potential social strategy responses, serve to guide or constrain children=s social behavior. This section focuses primarily on empirical data linking discrete social-cognitive processes with children=s social behavior and peer acceptance among preschoolers and kindergartners. As such, no attempt has been made to provide an exhaustive review of all prior research that has examined the social cognitions of older children or adults. This review focuses upon research examining the discrete social-cognitive processes that have been most commonly studied among young children: encoding of social cues, interpretation of social cues, and social strategy generation.

Encoding of social cues. Several empirical studies support the notion that the encoding of social cues is implicated in young children=s behavior with peers. In a study of aggression in preschool-age boys, Gouze (1987) found that boys who displayed aggressive behavior differed from nonaggressive classmates in the manner in which they attended to aggressive stimuli. Aggressive preschoolers were less capable of shifting their attention away from a videotaped puppet show depicting aggressive interactions than were non-aggressive preschoolers. The experimenter also asked the participants to complete a task in which rings were tossed onto pegs. Aggressive boys were more likely to be distracted from completing this ring-toss task by video-taped cartoons depicting

aggressive behavior than were their non-aggressive classmates. These findings indicate a link between children's social behavior and the manner in which they attend to social stimuli; in particular, children who behave in an aggressive manner are more likely to attend to and to be distracted by aggressive stimuli than are less aggressive children. However, based upon this study we do not know if other specific behaviors, such as pro-social behavior or competent peer behavior, are associated with any distinct patterns of attending to social cues. Further, Gouze (1987) focuses solely on attention to social cues. Attention is an important first step in encoding a social cue (because a cue cannot be encoded if not first attended to), but attention alone is not sufficient to account for encoding a cue - the stimulus must also be represented in memory.

In a study of children's attention to and encoding of social cues, Putallaz (1983) arranged for two child confederates to present first-grade participants with scripted social problems. Participants were individually led to a research trailer where the two unfamiliar child confederates were already engaged in playing a game. The experimenter introduced the three children and left. The behavior of the two child confederates followed a set script. For the first five minutes the children continued to play the board game, while engaging in a series of verbal games: an imitation game, a rhyming game, and a questioning game. Next, the children acted out a series of staged social situations: a helping situation, a conflict management situation, and a peer rejection situation. Each child's attempts to enter the dyad were videotaped from behind a one-way mirror. All of

the participants' verbalizations to the confederates were coded as relevant to the peers' play, irrelevant, or tangential. The proportion of relevant comments was associated with children's sociometric status four months later. Presumably, relevant comments reflect children's ability to encode social cues. Experimenters also interviewed the participants following this staged session. During the interview, the experimenter and participant watched a videotape of the participant interacting with the two child confederates. At the six points that corresponded to the particular scripted themes of the experimental session, children were asked "what were the other two boys doing here?" The participants' answers were coded for accuracy, and the mean number of correct responses was considered a measure of perception. The cue encoding measure did not add significantly to the prediction of sociometric status four months later when the children=s ability to Afit@ into the ongoing group through relevant conversation was entered into the equation. However, the interaction of the children=s social perception by relevant conversation did significantly contribute to this prediction. One interpretation of this interaction is that participants who were both relevant and perceptive, for example, children who accurately perceived the group's behavior and so could contribute relevant conversation, were more adept at fitting into the group than were children less skilled at perceiving the group=s behavior or less relevant.

The findings reported by Dodge et al. (1986) provide additional support for the hypothesis that young children's encoding of relevant social cues is associated with their social behavior. These researchers presented kindergarten, first-grade, and second-grade children with a series of five videotaped vignettes of two children playing a board game. Each participant viewed five scenarios in which a third child used one of five strategies to join the two children already engaged in play. Following the presentation of each of the five scenarios, participants were asked to make an interpretation of the videotaped actors' behavior; specifically, participants were asked "will these children like to play with you?" To determine if the participants utilized relevant cues presented in the videotape to make this interpretation, the participants were asked why they answered the way that they did. Responses were scored as to whether participants used specific social cues presented on the videotape in making the interpretation: Responses that incorporated presented cues were scored one, and responses that did not were scored zero, and these scores were summed to provide a measure of cue utilization. One to two weeks after the interview, participants were led to a play room where two same-sex classmates had been playing for five minutes. Each participant was instructed to go into the room and begin playing with the two children. After seven minutes, participants were led back to their classrooms. Trained coders rated the group entry success and competence of the target child. The use of presented cues in making an interpretation during the videotaped interview was significantly associated with

observer-rated success and competence in the analog group entry situation. Together with Putallaz's (1983) data, these results highlight the importance that the encoding of relevant social cues plays in predicting the social behavior of children as young as kindergarten age.

A study of parental influences upon children's aggressive behavior further demonstrates the importance that accurately encoding relevant social cues plays in children's social behavior (Weiss et al., 1992). These researchers presented kindergartners with 24 videotaped vignettes, each of which portrayed a negative event. Following the presentation of each of these scenarios, participants were asked to recall what had happened in the story. These descriptions were coded on a 0 (fully relevant) to 2 (fully irrelevant) scale, based upon the degree to which participants utilized cues presented in the videotaped stimulus. Participants whose descriptions were more irrelevant displayed more aggressive behavior as reported by teachers and trained observers than did children who were more accurate in their descriptions. These findings provide additional evidence that children's ability to accurately perceive relevant social cues is associated with their social behavior. However, Weiss and his colleagues did not control for children=s verbal ability. Because this methodology, i.e., coding the extensiveness of children=s verbal descriptions of videotaped events, is so highly dependent on children=s verbal ability, it is possible that the results obtained by Weiss et al. (1992) are at least partially a reflection of individual differences in the participants= verbal ability.

Meece (1994) assessed young children=s encoding of social cues in much the same manner as employed by Weiss et al. (1992). Thirty-four children aged 4- to 5-years were presented with 14 videotaped vignettes of child actors portraying problematic social situations. Following each of the vignettes, children were asked Awhat were those children saying and doing?@ Children=s responses were coded on a 0 (fully irrelevant) to 3 (fully relevant) scale. The average rating of these descriptions was significantly associated with teacher ratings of peer acceptance, but, unlike the findings of Weiss et al. (1992) were not associated with teacher-ratings of aggression. Measures of the participants= receptive verbal ability were gathered through the Peabody Picture Vocabulary Test (PPVT). Children=s standardized scores on the PPVT were significantly associated with the measure of accuracy of cue encoding. Furthermore, when standardized PPVT scores were controlled in regression equations predicting teacher ratings of children=s peer competence, the measure of the accuracy of social cue encoding added only a non-significant 1% of the variance. Similar patterns of findings were reported among a more diverse sample of fifty-five 4- and 5-year-olds by Meece, Mize, and Pettit (1995). The findings reported by Meece (1994) and Meece et al. (1995) suggest that encoding social cues, at least as it typically is measured, may reflect children=s verbal ability, and that associations found between children=s social behavior and peer acceptance and children=s encoding of social cues may actually be a reflection of underlying

associations between children=s verbal ability and children=s competence with peers.

Interpretation of social cues. When a particular social cue is attended to and encoded, the child may interpret and develop an understanding of the meaning of this cue. The interpretation of social cues often requires that a judgement be made about the causal intentions of others. Two central questions have guided research in this area. First, do differences exist in the accuracy with which individuals interpret social cues? Second, are differences in the accuracy of social cue interpretation related to individual differences in social behavior?

In an effort to examine the accuracy of children's interpretations of the intentions of others, Dodge et al. (1984) presented kindergartners, second-graders, and fourth-graders with an intention-cue discrimination task and an intention-cue identification task. In the discrimination task, participants viewed 10 sets of three vignettes in which one child provoked another, for example, one child knocked over another's blocks. The intentions of the provocateur were either hostile (e.g., the target child displayed purposefully destructive behavior with accompanying facial expressions and verbalizations), prosocial (e.g., the target child destroyed the peer's play material but did so in an effort to help the peer), accidental (e.g., the target child unintentionally destroyed the peer's play material), or simply present (e.g., the peer destroyed his or her own play materials and then blamed the target child). Each of the 10 sets contained two vignettes in which the provocateur portrayed the same intention, and one in

which the provocateur depicted a different intention. Following the presentation of the three vignettes in a set, participants were asked to identify which vignette portrayed an intention that was different from the intentions depicted in the other two vignettes. Responses were coded as correct or incorrect, based upon agreement with adult judges who watched the vignettes. During the intention-cue identification task, participants were presented a series of vignettes in which the protagonist portrayed two examples of each intention type per series. In the identification task, five categories of intentions were included: hostile, prosocial, accidental, ambiguous, or simply present. After the participants watched each vignette, they were asked to verbally identify the intentions of the provocateur. Results indicated that children classified as popular or average through peer nominations performed significantly better on both the intention-cue discrimination and identification tasks than did their sociometrically rejected and neglected classmates. Sociometrically popular children also scored significantly higher than sociometrically average children on both tasks.

The findings of Dodge et al. (1984) support the hypothesis that socially maladjusted children are less accurate in the interpretation of social cues than are more socially competent children. Moreover, socially unsuccessful children tend to interpret the intentions of others more negatively than do more socially skilled children. In fact, a bias among aggressive children towards attributing hostile intentions to others has been well documented among second- though eighth-grade children (Dodge, 1980; Dodge & Frame, 1982; Feldman & Dodge,

1987; Gouze, 1987; Steinberg & Dodge, 1983). This bias, however, seems to be most apparent when the intentions of the provocateur are ambiguous. Dodge (1980) examined the attributions made by second-, fourth-, and sixth-grade boys by reading to them a series of four hypothetical social situations, in which the protagonist is the target of a negative outcome. The intentions of the peer in each story were unclear. The participants were asked to imagine that they were the victims of the negative outcome and to describe the intent of the provocateur. Dodge reported that aggressive boys made hostile attributions of the peers' intentions about 50% more often than did their nonaggressive classmates.

Although there is a fair amount of research supporting the presence of a "hostile attribution bias" in aggressive and peer-rejected older children, to date there has been little research focusing on this phenomenon in preschool children, and results from these studies are mixed. Pettit et al. (1988) attempted to assess the hostile attributions made by 4- and 5-year-old children. Pettit and his colleagues report that almost all of the children in their sample were biased toward attributing hostile intentions to others. The authors state that the preschoolers appeared to focus solely upon the outcome of hypothetical situations, in this case a peer provocation, and seemed to assume that intentions were necessarily hostile since outcomes were negative.

Currently it is impossible to state whether the Pettit et al. (1988) findings are indicative of a developmental trend in the attributions of intent made by young children, if these findings are a reflection of the sample studied by Pettit

and his colleagues, of if these findings are particular to the methods employed in the study. The particular sample was drawn from a federally sponsored preschool for economically disadvantaged children. The authors report that 30% of the children studied and 54% of their mothers were suspected of having been the victims of child or spouse abuse. Because of the high degree of early social stress in this sample, Pettit and his colleagues suggest that the children may have learned to over attribute hostility, regardless of characteristics of a particular situation.

Other evidence suggests that individual differences do exist in the manner in which preschoolers interpret the intentions of others, and that meaningful variation can be assessed among this age group. In a study of inter-generational transmission of aggression, Dodge et al. (1990) presented 5-year-olds with eight picture-based scenarios depicting an ambiguous provocation by a peer. Following each of the eight vignettes, participants were asked why the hypothetical peer acted the way that he or she did. Responses were coded dichotomously, as either benign intent or hostile intent. Findings reported by Dodge and his colleagues (1990) state that the percentage of hostile attributions significantly predicted observed aggressive behavior. Weiss et al. (1992), utilizing a portion of the same sample studied by Dodge et al. (1990), report that kindergartners who made more hostile attributions about the intentions of videotaped child actors were observed to behave more aggressively with peers than were kindergartners making fewer hostile attributions. These findings

suggest that the "hostile attribution bias" may be present in aggressive children as young as age 5.

Meece (1994) used two measures to assess the attributions made by four- and five-year-old children. Children were presented with 14 videotaped vignettes, 10 of which depicted hypothetical social dilemmas in which an ambiguous provocation occurs. Following each of the 10 provocation vignettes, children were asked to describe what happened in the story. Instances in which the children made a spontaneous hostile attribution, such as describing the provocateur as mean, angry, bad, and so on, were noted and the sum was used as one measure of children=s hostile attributions. Additionally, following each of the 10 provocation vignettes, children were asked a forced-choice question concerning the intentions of the provocateur. The proportion of forced-choice questions to which the children indicated the provocateur was Abeing mean@ served as a second indicator of participants= hostile attributions. Results indicated that the two hostile attribution measures were not significantly associated with each other. However, both of the attribution measures were significantly and negatively associated with teacher ratings of peer acceptance. Both hostile attribution measures appeared to be distinct from children=s general verbal ability, as correlations between these measures and children=s PPVT scores were non-significant. These findings, along with findings from earlier investigations, suggest that meaningful variations exist in the attributions that preschool children make about the intentions of others, and that socially skilled

children appear to be more positive in the way that they interpret those intentions.

Social strategy generation. Social strategy generation is perhaps the discrete social process that has received the most empirical attention to date among preschoolers. Investigators from the social-learning tradition have tended to conceptualize social strategy generation as an individual=s repertoire of potential responses to social stimuli (Meece, 1994; Mize & Ladd, 1988), including the hierarchical structure, or judgements about the appropriateness of the strategies, as well as evaluation of potential outcomes (e.g., Hart, DeWolf, and Burts, 1992; Hart, Ladd, & Burleson, 1990) of these social strategies. Theorists working within the information processing framework have conceptualized social strategy knowledge as the generation of a strategy in response to context-specific social cues, and view response evaluation as a separate process (Crick & Dodge, 1994; Dodge, 1986). Researchers from both the social-learning and the social-information processing perspectives have assessed young children=s social strategies by presenting hypothetical social dilemmas, such as provocation by a peer, or entry into a new social group, and then asking the children to state some things that they could do if confronted by the dilemma. Presentation of such dilemmas may be done through reading a story with accompanying pictures (for instance, Asher & Renshaw, 1981; Pettit et al., 1988; Rubin, Daniels-Bierness, & Hayvern, 1982), videotaped stimuli (Dodge et al., 1986; Pettit et al., 1988), or enacting hypothetical social problems with puppets, dolls, and/or other

props (Getz, Goldman, & Corsini, 1984; Meece, 1994; Mize & Cox, 1989; Mize & Ladd, 1988). Typically (but not always - the Mize studies are an exception), a social goal is made explicit to the child. For instance, children might be asked, Awhat are some things you could do to play with those children,@ or Awhat could you do to get that toy?@ Following the presentation of each vignette, the experimenter asks the participant to state or act out what he or she might do if confronted with a similar situation.

Researchers who have concentrated on assessing the number of children=s social strategies (Pettit et al., 1988; Spivack & Shure, 1974) propose that the greater the number of relevant strategies children are able to generate (sometimes referred to as fluency), and thus the more choices available, the more likely the child will be to select an appropriate or positive strategy (Spivack, Platt, & Shure, 1976). Children who are able to generate a greater number of relevant strategies in response to hypothetical social dilemmas have been observed to display more prosocial behavior than children who generate fewer relevant strategies (Mize & Cox, 1989) and are rated by teachers and peers as more competent (Dodge & Price, 1994; Pettit et al., 1988). Other research, however, failed to find significant associations between the number of relevant social strategies preschoolers generate to hypothetical social situations and teacher ratings of social status (for a review, see Rubin & Krasnor, 1986).

A second approach to the study of young children=s social strategy generation emphasizes assessment of the quality of the first strategy children

generate in response to hypothetical social problems (Asher & Renshaw, 1981; Mize & Cox, 1989; Mize & Ladd, 1988; Rubin et al., 1982). Researchers who have followed this approach propose that the quality of the first strategy is a better reflection of how children actually relate to peers (Mize & Ladd, 1988). For instance, Asher and Renshaw (1981) asked kindergartners to respond to hypothetical social dilemmas presented through picture based stories depicting peer conflict and friendship initiation. In response to conflict situations, unpopular kindergartners were more likely than their popular classmates to respond aggressively. When confronted with a friendship initiation situation, unpopular children tended to be more vague and more likely to seek adult intervention than popular children. The responses of popular children were judged to be more effective and prosocial than were the responses of unpopular children across situations.

Rubin et al. (1982) presented preschool- and kindergarten-age children with eight picture stories depicting attempts by one child to obtain a desired object from another. Participants were asked to tell the experimenter what the target child in each of the scenarios could do or say to get the object. Each response was coded as falling into one of five categories: prosocial, aggressive, authority intervention, bribe or trade, manipulate affect. Proportion scores were calculated by dividing the total number of responses in each category by the total number of responses. No relation was found between the quality of the responses generated and social status for preschoolers. For the kindergartners,

high peer acceptance (as measured through peer ratings) was positively related to the proportion of prosocial responses, and negatively related to the proportion of aggressive responses.

Pettit et al. (1988) employed a similar methodology, picture-based stories depicting hypothetical object acquisition and friendship initiation dilemmas, to assess the response generation of 4- and 5-year-old children. The number of responses generated was positively correlated with social preference, a continuous measure of peer social acceptance. Social preference was positively associated with the percentage of responses that were relevant and prosocial, and negatively related to aggressive responses.

Although both the number and quality of strategies children generate verbally have been linked to social competency, researchers have suggested that strategies elicited through enactive interviewing procedures, in which an experimenter and children act out hypothetical social interaction themes using puppets or dolls and other props, are more accurate representations of the scripts that guide children's peer interactions than are their verbal responses to social dilemmas. Getz et al. (1984) report that 3- , 4-, and 5-year-old children generated more responses reflecting a greater variety of social problem solving strategies when props were used to present a social dilemma than when picture-based stimuli were used. These findings fit well with research conducted by Mize and Ladd (1988), who used both a verbal assessment, in which children were shown a series of pictures depicting problematic social situations, and an

enactive procedure, in which social situations were acted out using puppets and props, to elicit social strategies from preschoolers. The "friendliness" ratings (prosocial, low hostility) of enactive responses predicted teacher and observer ratings of prosocial and aggressive behavior. Friendliness ratings of verbal responses were found to contribute little to the prediction of these ratings beyond the enactive responses. In fact, friendliness ratings of verbal responses were significantly associated with only one of the four outcome variables (teacher-rated prosocial behavior). These findings suggest that, with preschoolers, enactive procedures might be better suited for the assessment of social strategy generation than verbal measures.

Multiple domains of discrete social-cognitive processing. Although empirical research has tied measures of each of these three domains of discrete social-cognitive processing -- encoding of cues, hostile attributions, and social strategy generation -- to young children=s peer acceptance and social behavior, these studies have often been conducted in isolation. Although several studies include measures of more than one social-cognitive process, measures from different domains of discrete social-cognitive processes are often Alumped together@ as a single indicator of social cognition. Three studies have included measures of multiple domains of discrete social-cognitive processing and evaluated the relative utility of each in the prediction of children=s social outcomes, and results from these three studies are mixed.

A second issue concerns the degree of specificity of discrete social-cognitive variables in the prediction of behavioral outcomes. It may be that different social outcomes, such as aggressive, withdrawn, or prosocial behavior, are associated with different discrete social-cognitive processes, or different patterns of social-cognitive processes. On the other hand, it may be that measures of different discrete social-cognitive processes are equally predictive of social behavior in multiple domains.

In a study described earlier, Dodge and his colleagues (Dodge et al., 1986) collected 13 measures of discrete social cognition in two samples (kindergarten, first-, and second-graders, and second- through fourth-graders). Dodge=s (1986) model of social-information processing includes behavioral enactment of social strategies as a final step. Thus, 1 of the 13 measures collected by Dodge et al., 1986 (children=s ratings of their behavior made after a group entry attempt) is not an aspect of the three discrete social-cognitive processes described in the current work. Analyses revealed that, among the younger sample, the proportion of non-aggressive social strategies was the only variable to make a significant, independent contribution to the prediction of ratings of the children=s behavioral success in a group entry situation. Three other variables -- social cue utilization, children=s ratings of their behavioral enactment, and non-endorsement of passive social strategies -- made marginally significant independent contributions to the prediction of group entry success (ps equaled or were less than .10). Together, these four variables accounted for 34%

of the variance in ratings of entry group success; the 13 social-cognitive variables as a block accounted for a non-significant 38% of the variance. Similar patterns of findings were apparent in the prediction of observer ratings of competence in group entry situations (the independent prediction of three of thirteen variables were at least marginally significant, accounting for 31% of the variance in entry competence; the group of 13 social-cognitive variables accounted for a non-significant 44%). Dodge and his colleagues (1986) used identical measures with the older sample (second- through fourth-graders), and report a similar pattern of findings. One of 13 social-cognitive variables (the child=s ratings of his or her own behavior made after the peer-group entry attempt) made an independent contribution to the prediction of ratings of peer-group entry success while two other social-cognitive variables (nonendorsement of passive strategies, and endorsement of self-centered strategies; both indicators of social strategy generation) made marginally significant independent contributions. Four of 13 variables (hostile attributions and three indicators of social strategy generation: aggressive strategy generation, endorsement of aggressive strategies, and the number of strategies generated) made at least marginally significant independent contributions to the prediction of observer ratings of aggressive behavior following a peer provocation.

It is striking that, as with the younger sample, there was a large amount of shared variance in measures of older children=s discrete social cognition, and there was considerable overlap in the utility of these social-cognitive variables as

predictors of young children=s behavior. It is possible that this shared variance indicates that the variables studied by Dodge and his colleagues serve as indicators of a single underlying factor. Further, different social-behavioral outcomes (peer group entry, response to a provocation) were differentially associated with social-cognitive variables in meaningful ways. Peer-group entry was significantly predicted by children=s ratings of their own behavior, whereas aggressive response to provocation was predicted by hostile attributions and aggressive strategy generation. Dodge and his colleagues suggest that these findings provide evidence of domain specificity in discrete social-cognitive processing. That is, different social outcomes may be associated with discrete social-cognitive processes in varying ways.

In a second study, a fairly similar pattern of findings was reported among first- through third-graders by Dodge and Price (1994). These researchers assessed children=s encoding of social cues, hostile attributions, and social strategy generation (along with other variables such as skill at behavioral enactment of strategies) in two peer-related contexts: a peer-group entry situation, and a provocation from a peer. For the group-entry situation, only encoding of social cues provided a significant increment to the prediction of peer- and teacher-rated behavioral competence. For the peer-provocation situation, social strategy generation (operationalized by both the fluency of responses and the proportion of strategies judged to be aggressive) was the only discrete social-cognitive process to make a significant independent contribution to the prediction

of behavioral competence. Participants behavioral performance in a group-entry situation was predicted equally well from social- cognitive measures collected in the provocation domain as from those collected in the group-entry domain. Also, participants= behavioral performance in a peer-provocation situation was predicted equally well from social-cognitive measures collected from the group-entry domain as from those collected in the peer-provocation domain. Thus, unlike Dodge et al. (1996), the results reported by Dodge and Price (1994) do not support context specificity.

A third study that included multiple measures of young children=s social cognition was conducted by Meece (1994), who, as described previously, collected measures of encoding of social skills, hostile attributions, and social strategy generation in a sample of thirty-eight 4- and 5-year-olds. The Meece study reports the results of a regression equation predicting teacher ratings of peer competence from measures of the three domains of discrete social cognition, in which the children=s receptive verbal ability (as measured by the PPVT) was controlled. Results indicated that both social strategy generation and hostile attributions accounted for significant, unique portions of the variance in peer competence (12% each), whereas encoding of social cues did not. These findings provide some support for the notion that measures of different social-cognitive processes provide unique contributions to the prediction of young children=s social behavior and peer competence. Meece (1994) only conducted

the regression equation with teacher-rated peer competence as the outcome, and so the issue of context specificity cannot be addressed by these findings.

Because these three studies provide somewhat mixed results, to date it remains unclear whether measures of discrete social-cognitive processes, such as encoding of social cues, hostile attributions, and generation of social strategy knowledge, provide unique contributions to the prediction of young children=s social behavior and peer competence. It could be that measures of these discrete processes reflect relatively independent domains of social cognition, or, on the other hand, such measures might tap into a single underlying dimension, and so may be redundant with one another in their predictive utility.

Discrete social-cognitive processing and general intelligence and verbal ability. Another concern in the study of discrete social-cognitive processes involves potential confounds between measures of young children=s discrete social-cognitive-processes and their general intelligence and verbal ability. This concern arises because studies of young children=s discrete processing often employ methodologies that require that children understand verbally presented hypothetical situations and stories, as well as interviewers= spoken instructions and questions. Given that general intelligence has been linked with competence with peers (Hartup, 1983), it may be the case that associations between measures of discrete social-cognitive processes and children=s social behavior are at least partially a reflection of associations between children=s maturational level, general intelligence, or verbal ability and measures of both children=s peer

competence and their performance on measures of discrete social-cognitive processes.

Because of this concern, some studies of social-cognition have statistically controlled for cognitive (Dodge et al., 1994; Gouze, 1987; Putallaz, 1983; Shure & Spivack, 1980) or verbal ability (Getz et al., 1984). For the most part, these studies conclude that social-cognitive processes are independent of general intelligence. For example, Putallaz (1983) reports that associations between encoding of social cues and competence with peers remained significant when measures of general intelligence were controlled. However, it is rare that results of these analyses are reported in any detail. For example, in a study of the identification and discrimination of the intentions portrayed in hypothetical social delimmas, Dodge and his colleagues (1984) included a geometric shape discrimination task to control for general cognitive ability. These authors reported that scores from the discrimination task were entered as a covariate of intention-cue identification and discrimination resulting in A...similar findings to those reported in the MANOVA (conducted without scores from the discrimination task entered as a covariate) (pp. 167-168).@

One of the few studies that includes detailed results of analyses controlling for general intelligence was conducted by Gouze (1987). In this study, Gouze reported that 14 variables assessing attention to aggressive stimuli were significantly correlated with aggressive behavior. When scores from the Wechsler Preschool and Primary Scale of Intelligence were partialled out, six of these

correlations were no longer significant. Similarly, Meece (1994) reports that among a sample of four- and five-year-olds associations between encoding of social cues and teacher-rated peer competence were no longer significant when controlling for measures of receptive verbal ability (PPVT scores). In the Meece (1994) study, significant associations between peer competence and both hostile attributions and social strategy generation remained significant even when PPVT scores were statistically controlled. These findings suggest that it is important to control for individual differences in children=s verbal ability when employing measures of discrete social cognition that require children to respond verbally and understand verbal instructions or dialogue. Because findings in this area are somewhat inconsistent and sometimes unclear, it is reasonable to conclude that the association between measures of discrete social-cognitive processes and verbal ability is not fully understood and that more research is needed.

Discrete social-cognitive processing: Summary and integration. A number of studies have linked children=s encoding of social cues, hostile attributions, and social strategy generation to their social behavior and peer competence. However, most studies of young children=s discrete processing have only included one discrete process. The few studies that have assessed the degree to which these three aspects of discrete social-cognitive processing serve as unique predictors of social outcomes (Dodge et al., 1986; Dodge & Price, 1994; Meece. 1994) present somewhat mixed results. Dodge et al. (1986) and Dodge and Price (1994) report little evidence that variables from multiple domains of

social-cognitive processing uniquely predict social outcomes, whereas Meece (1984) reports that hostile attributions and social strategy generation each provide unique prediction to ratings of peer competence.

A second issue concerns the degree of context specificity in the prediction of young children=s social behavioral outcomes. The two studies (Dodge et al., 1986; Dodge & Price, 1994) that have compared the predictive utility of social-cognitive processes within and across domains of social behavior have presented mixed results. Dodge et al. (1986) report some evidence of context specificity, whereas Dodge and Price (1994) report that behavior in a peer-entry context is equally predicted by social-cognitive measures from group-entry and provocation contexts, and behavior in a provocation context is equally predicted by social-cognitive measures from provocation and group-entry contexts.

A final issue concerns potential confounds between measures discrete social-cognitive processing and children=s general intelligence or verbal ability. Only a few studies of discrete social-cognitive processing have controlled for children=s general intelligence or verbal ability, and the results of these studies are mixed. For example, Putallaz (1983) reports that associations between encoding social cues and social behavior remain significant when measures of general intelligence are controlled, whereas Meece (1994) reports that associations between encoding of social cues and peer competence are no longer significant when measures of receptive vocabulary are controlled.

Latent Cognitive Structures

Theorists from several theoretical orientations have speculated that latent cognitive representations of others, and of the self in relation to others, guide or constrain the individual=s social behavior. Attachment theory=s concept of internal working models is perhaps the most well-articulated conceptualization of such cognitive representations. To date, most of the theory and research focusing on latent structures from the attachment perspective has focused on attachment relationships between the infant and the caregiver. Currently, thinking about latent structures related to peer relationships is in its infancy, and there is little clearly explicated theory and virtually no empirical data in this area. Thus, this section is an attempt to clarify various views of what latent structures (i.e., representations of others and the self in relation to others) are, to provide some synthesis across the different perspectives, and to review the sparse data base that has examined latent cognitive structures.

Representations of relationships in attachment theory. Attachment theory=s construct of internal working models is thought to account for continuity between young children=s early experience in an attachment relationship with a caregiver and subsequent social behavior. Attachment theorists suggest that, through repeated experiences of interaction with a caregiver, infants construct mental representations of the attachment relationship, and that this cognitive Amap@ of the attachment relationship is imposed upon future close relationships (Bretherton, Ridgeway, & Cassidy, 1990). That is, children who experience

attachment figures as emotionally available, loving, and supportive may come to view social interaction as positive, fun, and rewarding, and see themselves as loveable and competent. Conversely, children who experience a relationship with a caregiver that is inconsistent, non-supportive, and non-comforting may view social interaction as frightening, unpredictable, and basically negative, and may construct a model of the self as incompetent and unworthy of loving interaction (Bowlby, 1969). These early models of relationships and the self influence how the child approaches future relationships. A child who has come to represent the attachment relationship as secure and loving and the self as efficacious in social interactions might be likely to view future relationships positively and to actively approach social interaction. On the other hand, the child who forms an internal working model of the attachment relationship as unpredictable or cold, and of the self as undeserving of warm contact, may approach future relationships with trepidation and apprehension. The content of, or information stored in, internal working models is thought to be both factual, in terms of representations of prior experiences and past events, and affective, in terms of feelings about the relationship (Crittenden, 1990). The child constructs internal working models of the self and of the attachment relationship through dyadic experience with the caregiver, and with continued experience working models of the self become distinct from models of others. However, in that models of the self and other are a function of experience in relationships, the two remain highly related (Cassidy, 1990).

As postulated by attachment theorists, internal working models are thought to be global in nature, in that the representations are generalizable across situations. Internal working models are thought to operate outside of consciousness, and so are resistant to change (Bretherton, 1992). This is not to say that attachment theorists view cognitive representations of relationships as immutable; rather, Bowlby (1980) theorized that internal working models must be revised to remain serviceable as new information is assimilated. Thus, an important aspect of these cognitive models of relationships is that they are Aworking,@ meaning that they are revised or reformulated through continued experience of social interactions.

Although Bowlby (1969) postulated that children develop separate internal models based on separate experiences, he did not elaborate on how children=s working models are organized. Howes (in press) proposed that, because children may have more than one attachment figure, working models based upon divergent experiences with different attachment figures might be organized in three possible ways. The first is hierarchical organization, in which the child=s representation of the most salient caregiver, most usually the mother, is always the most influential model, and so the maternal-attachment security impacts all subsequent relationships. A second type of potential organization of working models is integrative organization. In integrative organization, the child integrates all of his or her attachment relationships into a single representation, but there is no assumption that one attachment relationship would be more salient than

another or be more influential than another. The third alternative presented by Howes is independent organization, in which each relationship is represented independently. Independent organization would suggest that models of different relationships may be differentially influential for development in different domains. For example, representations of father-child attachment might influence negative affect in interpersonal conflict, whereas representations of mother-child attachment may influence competence more generally (Suess et al., 1992).

A second heuristic for understanding the organization of internal working models is provided by Crittenden (1990), who uses the term meta-structure to refer to the cognitive organization of internal working models in terms of increasing complexity. Crittenden proposes three possible types of meta-structures, or ways that internal working models of relationships might be organized. In the simplest meta-structure proposed by Crittenden, a single internal representational model is applied to all relationships. In the second type of meta-structure, an unrelated internal representational model is constructed for each relationship. The most complex type of meta-structure offered by Crittenden is characterized by a generalized model with differentiated, relationship-specific sub-models. According to Crittenden, this third type of meta-structure is probably the most accurate for describing the organization of internal working models. This is because this type of organization reflects consistency in an individual=s sense of self and in the individual=s experience, while allowing for properties unique to specific relationships.

Based upon the work of Bowlby (1969; 1973; 1980), Cassidy and her colleagues (1996) speculated that aspects of the parent-child relationship inform not only children=s models of the self and of the parent-child relationship, but also children=s working models of peer relationships as well. According to this view, early social interaction, particularly caregiver-child attachment, influences the way that young children come to view themselves and their relations to those around them. For the infant, internal working models of relationships and the self are synonymous with parent-child attachment, in that the securely attached infant views social interaction as positive, warm and predictable, whereas the insecurely attached infant comes to view his or her relationship with care givers as unpredictable and unpleasant (Bowlby, 1969; 1973; 1980; Bretherton, 1992). As the child begins to interact with others outside the attachment relationship, it is thought that the child constructs working models of these relationships in addition to models of the attachment relationships with the caregiver (Cassidy et al., 1996). This idea fits well with the findings reported by Howes, Matheson, and Hamilton (1994) who report that mother-infant attachment classifications at age 12-months or at age 4 were not associated with children=s peer relations at age 4, although children=s attachments to their preschool teachers were. Howes et al. concluded that maternal attachment does not predict social competence for children with extensive peer experience, although children=s attachment to people who are a part of the activity setting in which peer interaction takes place does. In sum, it is thought that experience in social interaction contributes to the

development of internal working models of relationships, and these models, in turn, are thought to guide children=s subsequent social behavior (Bowlby, 1973; 1980; Cassidy et al, 1996).

Latent cognitive structures in cognitive social psychology. Although perhaps not as elaborated as attachment theory=s concept of internal working models, several concepts from the field of social-cognitive psychology provide useful nomenclature for understanding children=s representations of relationships. Terms such as scripts, schemas, stereotypes, and constructs have been used seemingly almost interchangeably to refer to generalized mental representations. A script is usually described as a representation of knowledge about events, and defined as a Apre-determined, stereotyped sequence of actions that defines a well-known situation@ (Schank & Abelson, 1977, p. 41). Schemas are generally defined as organized mental representations of past experiences that serve as guides in construing new experiences (Markus & Zajonc, 1985). The term Aconstruct@ has been used to describe abstract mental representations or categories of specific trait-related behaviors (Higgins & Bargh, 1987). It is postulated that the relative accessibility of constructs determines how individuals encode and interpret social situations (Higgins & Bargh, 1987). For example, knowledge that a graduate student=s proposal was rejected by his major professor could be interpreted in at least two ways: fair or punitive. How an individual interprets the event may be at least partially determined by which of the two constructs (fairness or punitiveness) is most readily accessible.

Construct accessibility is the readiness with which a stored mental construct is utilized in processing information. Construct accessibility is affected by events in the individual=s past, as well as features of the current environment. Features of the current environment, such as the presence of behavior relevant to, or consistent with, a construct, may result in activating a given construct. Although how constructs are activated from memory is not known, it has been argued that constructs are stored in what has been called a Amemory bin@ (Higgins & Bargh, 1987) in the order in which they were most recently activated. When new information is processed, the relevant bin is searched from the top down, so that constructs at the top of the bin (those activated most recently) are accessed first (Graham & Hudley, 1994). Thus, the most accessible constructs are those that have been either frequently or recently activated (Graham & Hudley, 1994).

To study construct accessibility, researchers have used a technique known as Apriming.@ Priming refers to the activation of constructs by the current situational context (Bargh, Chen & Burrows, 1996). Studies have shown that the recent use of a trait construct, even in an unrelated situation, carries over for a time to exert an influence on the interpretation of behavior. However, this may not be the case for individuals who possess chronically accessible constructs. For example, Graham and Hudley (1994) randomly assigned aggressive and non-aggressive sixth- through eighth-grade boys to a condition that primed the

perception of negative outcomes as being either intentionally or unintentionally caused, or to a no-priming control condition. The researchers presented the participants with a task that consisted of 10 sentences they were instructed to study for a test of recall. In the intentional condition, the sentences portrayed a target as being responsible for the outcome: Ahe does not have money to share for pizza because he selfishly spent all of his allowance on new clothes.@ In the unintentional condition, the sentences portrayed the cause as something the target was not responsible for: Ahe does not have money to share for pizza because his wallet was stolen in school that day.@ After the priming task, participants read a story that described a negative outcome initiated by a hypothetical peer provocateur whose intentions were ambiguous, and were asked questions about the intentions of the provocateur. In the unintentional priming and control conditions, non-aggressive boys made fewer hostile attributions about the provocateur=s intentions than did the aggressive boys. Thus, nonaggressive boys appeared to access the benign construct (not responsible). In the intentional priming condition, aggressive and non-aggressive boys made equally hostile attributions. Thus, the non-aggressive boys were influenced by priming of the intentional construct, but the aggressive boys were not influenced by priming of the non-intentional construct. Graham and Hudley (1994) interpreted these findings as evidence that for aggressive children, the construct of blame may be chronically accessible and may be one mechanism underlying hostile attributional bias.

Graham and Hudley=s (1994) findings are consistent with the idea that environmental cues can prime access to constructs of hostility, even for non-aggressive children. These findings also suggest that, for aggressive children, hostile constructs are easily accessible without priming from the immediate environment. That is, in addition to temporary priming effects, constructs also can become chronically primed or accessible. Constructs become chronically accessible because of repeated or consistent experience with a given domain of social behavior (e.g., hostility, kindness) so that the construct becomes more likely than others to be utilized in interpreting behavior (Bargh, Lombardi, & Higgins, 1988). Thus, chronically accessible constructs are likely to be used to interpret social behavior even in the absence of recent priming, so that the construct is continually at the Atop of the bin.@ Children may develop chronically accessible constructs for hostility and blame from living in a family in which violence and anger predominate, or through continued negative and hostile interaction with peers (Graham & Hudley, 1994). Research has demonstrated that the activation of chronically accessible constructs is automatic, in that it is unintentional and uncontrollable. For example, adults who possess chronically accessible trait constructs are more distracted by the presence of trait-relevant adjectives in the Stroop color-naming task, which requires individuals to name the color of stimulus words as quickly as possible while ignoring the meaning of the words (Bargh & Pratto, 1986). Thus, a hostile construct may be readily accessed by aggressive children in any situation that presents potential threat.

Baldwin (1992) asserts that many models based on clinical observation, such as those from object relations and interpersonal theories, are consistent with a social-cognitive view of interpersonal relationships, in that these models focus on the self, the other, and the Aspace between the two.@ Baldwin proposes a model in which relational schemas are defined as cognitive structures representing regularities in patterns of interpersonal relatedness. According to Baldwin, the elements of a relational schema include an interpersonal script for the interaction pattern, a self-schema for how the self is experienced in that interpersonal situation, and a schema for the other person in the interaction. Thus, consistent with attachment theory=s conceptualization of internal working models (Bowlby, 1969), object relations theory holds that representations of relationships (relational schema) are comprised of two elements: representations of the self in relation to others, and representations of the other.

Latent cognitive structures in social-information processing theory. In contrast to attachment theorists whose primary interest have been the child=s representations of caregiver relationships, the model proposed by Crick and Dodge (1994) focuses on children=s relations with peers. Crick and Dodge (1994) do, however, claim to have incorporated some attachment-like ideas, specifically the concept of internal working models, in the conceptualization of latent mental structures. However, the definition of latent structures employed by these researchers remains decidedly framed in information processing terms, as either a data base of past experiences stored in long term memory or as a

cognitive heuristic that is relied upon when interpreting stimuli. According to this view (Burks, Laird, Dodge, Pettit, & Bates, 1998), knowledge structures are internal mental representations which are derived from memories of past experiences, and are a major influence on how individuals interpret on-going social events. In Dodge=s social-information processing model (Crick & Dodge, 1994; Dodge, 1986), mental representations of past experiences are stored in long-term memory and integrated with other memories to form latent mental structures that are carried forward over time and guide the social-information processing of future cues. Although researchers working within the social-information processing framework credit concepts such as scripts, schemata, and working models as the basis for the concept of knowledge structures, there has been little elaboration concerning how the concept of knowledge structures compares to these other conceptualizations of mental structures (Burks, Laird, Dodge, Pettit, & Bates, 1998; Crick & Dodge, 1994).

However, some distinctions between social-information processing theory=s conceptualization of knowledge structures and other conceptualizations of latent mental constructs can be observed. In contrast to the more global views of attachment theorists, Dodge and his colleagues (Crick & Dodge, 1994; Dodge & Feldman, 1990; Dodge, et al, 1986) have called for situationally specific approaches to the study of children=s social cognition. One basis of this argument is data suggesting that some aspects of maladaptive social-information processing may be specific to particular situations for particular individuals

(Dodge & Feldman, 1990). Crick and Dodge (1994) state that it is unclear whether children=s latent mental structures are organized with situational constraints or whether they are organized at a more global level. However, Burks, Laird, Dodge, Pettit, and Bates (1999), state that, whereas social-information processing is concerned with individual=s responses in specific situations, knowledge structures can be viewed as Achronic internal representations@ that result from memories of past experiences.

Empirical studies of self representations. At the current time, only a few studies have investigated associations between preschoolers= representations of the self and their peer acceptance or behavior with peers. Even very young preschoolers are able to construct very concrete cognitive representations of observable features of the self (such as AI can count, I run fast, I know my ABC=s@) (Harter, 1997). Fischer (1980) labels these initial structures Asingle representations@ because the cognitive limitations of this developmental period do not allow the child to integrate single representations into a coherent self-portrait. One expression of this self structure is the inability to acknowledge that one can possess opposing attributes, for example, good and bad, or nice and mean (Fischer, Hand, Watson, Van Parys, & Tucker, 1984). Moreover, self-evaluations during this period are likely to be unrealistically positive, because very young children have difficulty distinguishing between their desired competence and their actual competence (Harter, 1998). With increasing cognitive development through the preschool years, children become able to

coordinate concepts that were previously compartmentalized (Fischer, 1980). For example, older preschoolers can form categories or sets that relate to a number of self competencies (AI=m good at running, jumping, and climbing@). Fischer suggests that attributes become mapped or linked one to another. One common type of mapping involves a link in the form of opposites; the categories Agood@ and Abad@ are an especially salient set of opposing attributes. Children of this age tend to over-differentiate good and bad, which leads to all-or-none thinking and self-descriptions that are typically overly positive (Harter, 1998). Take, for example, a 4-year-old girl who is very excited about beginning to play T-ball. According to Fisher (1980) there is no Amiddle ground@ in the child=s conception of one=s ability to play T-ball; one is either good at it or bad at it. Because the child knows she is not Abad@ at playing T-ball, she must be extremely good! Thus, the child may over-estimate her description of her self as a T-ball player.

Bowlby (1979) states that measures of self-image and self-esteem previously employed by other investigators are consistent with the concept of working models of the self (see also, Cassidy, 1990). One commonly used measure of young children=s self-concept is Harter=s Pictorial Scale of Perceived Competence and Social Acceptance for Young Children. According to Harter (Harter & Pike, 1984), this measure yields four scales of children=s perceived competence and acceptance: cognitive competence, physical competence, maternal acceptance, and peer acceptance among children younger than 8. However, researchers who have attempted to utilize Harter=s

scale in studies of children=s social behavior have reported difficulty in replicating the scale=s four factors, and several researchers report that scores on the Harter scale are not associated with young children=s social outcomes (Fantuzzo, McDermott, Manz, Hampton, & Burdick, 1996; Vaughn, 1995). These findings suggest that the body of research using this scale must be interpreted with caution.

Researchers within the attachment framework have investigated young children=s representation of the self in terms of the attachment relationship. In one of the first studies in this area, Sroufe (1983) found that teacher ratings of preschoolers= self-esteem were associated with the children=s attachment classification during infancy. Similarly, Cassidy (1988) used multiple assessment techniques to investigate links between 6-year-old children=s attachment relationship and their representations of the self. First, Cassidy utilized puppet interviews, in which an experimenter asked a puppet a series of questions about the child that the chid answered, to assess the child=s perceptions of how an unspecified other views him or her. Second, participants were asked to complete stories enacted with dolls that were designed to elicit the children=s representations of the self in terms of the attachment relationship. Cassidy also asked children to complete Harter=s Pictorial Scale of Perceived Competence and Social Acceptance. Results indicated that scores from the four scales of the Harter instrument were not associated with scores from the puppet interview or with scores from the story completion task. However, measures of the children=s

representations of the self from the puppet interview (self in relation to undifferentiated other) and from the story completion task (self in relation to attachment figure), as well as scores from Harter=s scale, were related to children=s attachment classification. Thus, empirical evidence supports the hypothesis that qualities of children=s attachment relationships with caregivers are associated with measures of young children=s working models of the self.

Recently, researchers have begun to examine links between children=s representation of the self and their competence with peers. Verschuren, Marcoen, and Schoefs (1996) assessed ninety-five 5-year-olds= internal working models of the self using Cassidy=s (1988) puppet interview, in which the experimenter asks a puppet (operated by the child) a series of questions about the child. These researchers modified Cassidy=s original coding scheme in order to capture two dimensions of young children=s models of the self: positivity, the affective quality placed on the self, and openness to imperfection (as opposed to viewing the self as perfect). Based on these two dimensions, children were categorized into one of four groups: positive-open, positive-closed, negative-open, and negative-closed. Based upon the children=s answers in the puppet interview, 61% of the children were classified into one of the two positive groups, while 39% were classified into one of the two negative. Children in the four groups did not differ by vocabulary scores (obtained through a German vocabulary test for kindergartners). Children and their teachers also completed Harter=s scale (described above). Results revealed that children in the positive

puppet interview categories reported higher levels of cognitive and physical competence on the Harter scale than did children in the negative puppet interview categories. Furthermore, children in the positive puppet interview categories were rated by teachers as more cognitively competent, more physically competent, more socially accepted, and better adjusted to school than were children in the negative puppet interview categories.

Rudolph et al. (1995) used a 15-item questionnaire to assess working models of the self among a sample of eighty-one 7- to 12-year-olds. Items were designed to assess both what the children Aknow@ about themselves, a reflection of children=s perceptions of their specific social competencies, as well as how children Afeel@ about themselves, a reflection of the children=s evaluation of their social self-worth or ability to be a good friend. Results indicated that self representations (as indexed by the composite of Aknow@ and Afeel@) were significantly and negatively associated with teacher-rated peer rejection. In addition, those children who were classified by teachers as Asocial stars@ (most socially successful) were significantly higher in self representations than their peers whom teachers classified as average, disliked, or neglected.

Although positive representations of the self have been linked to peer competence, the pattern of associations between representations of the self and social behavior among unpopular children is more complex. Boivin and Begin (1989) utilized the Harter Scale to assess the self-perceptions of 9- and 11-year-olds sociometrically classified as popular, average, rejected, neglected, and

controversial. Sociometrically popular children held generally positive self-perceptions, and their scores were significantly more positive than the average group. No difference was found between the self-perception scores of neglected and average children. Cluster analysis revealed that sociometrically rejected children could be assigned to one of two subgroups: those who reported positive self-perceptions and those who reported negative self-perceptions. Children in the positive cluster reported significantly higher scores on two self-perception scales (physical appearance and self-esteem) than did average children, whereas children in the negative cluster reported significantly lower scores on all scales than did average children. These findings suggest that there are two sub-groups of socially rejected children: Those with positive representations of the self and those with negative representations of the self.

Patterson, Kupersmidt, and Griesler (1990) hypothesized that aggressive behavior might be systematically related to observed variations in the self-perceptions of rejected children. Again utilizing Harter=s scale, these authors found no significant differences between aggressive-rejected and nonaggressive-rejected children. However, the two groups differed in the accuracy of their self-reports, as compared with peer evaluations. Aggressive-rejected children tended to overestimate their behavioral competence, while nonaggressive-rejected children tended to report self-perceptions that were more consistent with the views of their classmates. Hymel, Bowker, and Woody (1993) expanded this research by comparing the self-perceptions of aggressive-unpopular children and

withdrawn-unpopular fourth- and fifth-grade children. Findings suggest that, relative to the evaluations from their classmates, aggressive-unpopular children tend to overestimate their social self competence. On the other hand, withdrawn-unpopular children expressed more accurate, but negative, self-evaluations. These results expand upon Boivin and Begin=s (1989) findings that representations of the self differentiate between two sub-groups of rejected children. Specifically, those children rejected by their peers who display high levels of aggressive behavior do not have more negative representations of the self than do children who are not rejected by their peers. However, those children who are rejected by their peers and show high levels of withdrawing behavior report representations of the self that are more negative than those of their classmates who are not peer rejected.

Empirical studies of peer representations. Although theorists from multiple theoretical perspectives have posited that young children=s social behavior is directly or indirectly influenced by latent cognitive representations of peer relationships, to date there have been few empirical investigations that have assessed young children=s representations of peer relationships. Seuss et al. (1992) presented a series of six cartoon-based provocation stories to thirty 5-year-olds whose attachment classification had been ascertained through the strange situation when the participants were infants. The six stories presented by these researchers depicted a peer provocation towards either the participants= materials or the participant him/herself in which the intentions of the peers

systematically varied as intentional, unintentional, and ambiguous. Following each story participants were asked if the hostile actions were purposefully intended by the aggressor. Participants whose attachment to their mother was classified as secure during infancy made significantly more positive attributions than did the children with anxious attachment histories. There were no significant associations between the participants= attributions and their attachment with their father. Although this study has been cited as support for the notion that children=s attachment histories are associated with their representations of peer relationships (see Cassidy, et al., 1995), Seuss and his colleagues (1992) do not make this claim. On the contrary, the measure used by Seuss et al. (1992) seems more consistent with measures of young children=s attributional styles conducted within traditions marked by a focus on discrete cognitive processes.

Cassidy and her colleagues (1995) found that measures of parent-child attachment were associated with measures of representations of peer relationships among children across a wide range of ages, including three-and-one-half year olds, kindergartners, first-graders, and fifth-graders. Again, the measures of cognitive representations employed by Cassidy et al. (1995) are of questionable face validity as indicators of latent structures. For each age group, Cassidy and her colleagues presented children with hypothetical stories adapted from Dodge and Frame (1982) in which a peer caused a negative event, and the intentions of the peer in causing the negative event were ambiguous. Children were asked to indicate whether the intentions of the peer were hostile or benign,

and how they would respond to the provocation. These are essentially the same types of measures that researchers studying discrete processes such as children=s interpretations of cues and children=s social strategy generation have employed in previous studies (e.g., Dodge & Frame, 1982). Although the theoretical underpinnings of Cassidy=s representations of peer relationships seems to be fairly consistent with current conceptualizations of latent mental structures, the measures that Cassidy employed seem to more closely reflect discrete social-cognitive processes, and so results from this study are difficult to interpret in terms of latent mental structures.

Rudolph et al. (1995) used three questionnaires to assess working models of peers in a study described earlier. The first was a 12-item scale devised to assess children=s impressions about the extent to which different social attributes (Aother kids will try to put you down or tease you if they have a chance@) described their peers. The second was designed to assess the children=s interpersonal expectancies about likely outcomes to hypothetical social dilemmas. The third measured the children=s subjective appraisal of the amount of social support provided by their peers. Scores on the three questionnaires were summed to yield a single indicator of peer representations. Results indicated that peer representations were significantly and negatively associated with teacher-rated peer rejection. Also, teacher-classified Asocial stars@ were significantly higher in peer representations than their peers whom teachers classified as average, disliked, or neglected.

Researchers working within the social-learning and social-information processing traditions (Hart et al., 1992; Hart et al., 1990, Pettit et al., 1988; Pettit et al., 1991) have included measures of outcome expectations that are similar to one of the measures of peer representations employed by the Rudolph et al. (1995) study. The studies conducted by Hart and his colleagues and Pettit et al. measure children=s expectations concerning the outcomes of particular social strategies. For example, Hart et al. (1990) asked children to evaluate the potential outcomes of 12 social strategies experimenters presented to participants in response to each of two hypothetical social situations. Pettit et al. (1991) presented children with four social situations depicting potential peer conflict. For example, in one of the social situations two children were depicted watching cartoons and one child changed the channel without asking. Children were presented with a competent strategy (say Aplease ask before you change the channel@), a passive strategy (do nothing) and an aggressive strategy (say Aif you don=t change the channel back, I=ll hit you@). Outcome expectations were assessed by asking participants if each of three possible behavioral responses (competent, aggressive, and passive) would lead to a desirable instrumental outcome. For example, children were asked if they believed each response would lead the other child to Aask before changing the channel@ or Anot ask before changing the channel.@ The measure included in the Rudolph et al. (1995) study assessed children=s expectations about the outcomes of social events in a general way by presenting children with 15 peer-related hypothetical

events and asking the children to describe how they anticipate a peer would respond. For example, Rudolph et al. (1995) asked children AYou=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?.@ Children were then given three potential responses of the peer: (a) She might listen to my problem and try to make me feel better, (b) she might just walk away and say she wants to play with the other kids, and (c) she might tell me that I always seem to have problems and I should stop bother her.

In another study of children=s representations of peers, Rabiner, Keane, and Mackinnon-Lewis (1993) assessed beliefs about familiar and unfamiliar peers among a sample of 886 fourth- and fifth-graders. Beliefs about familiar peers were assessed by the Peer Beliefs Inventory, a 12-item questionnaire, in which six items pertained to beliefs about peers= prosocial characteristics, and six items pertained to beliefs about peers anti-social characteristics. To assess children=s beliefs about unfamiliar peers, children were shown two 90-second videotapes of a child their age and sex that they did not know. Participants were then asked to respond to 12 items identical to those of the Peer Beliefs Inventory, which were reworded to apply to an unknown peer. Children sociometrically classified as submissive-rejected, but not aggressive-rejected, reported less positive beliefs about familiar and unfamiliar peers than did sociometrically average status children. These findings suggest that beliefs about peers are not

associated with measures of children=s aggressive behavior. Thus, although more negative beliefs about peers predict peer rejection, aggressive behavior does not seem to be implicated in this link.

Summary and integration. Theorists from three perspectives, attachment theory, social-cognitive psychology, and social-information processing theory, have postulated that social interaction experiences are encoded into abstract cognitive representations. These representations are carried forward over time to influence subsequent perceptions, interpretations, expectancies, and behaviors within interpersonal contexts. According to each of these views, cognitive representations of relationships are presumed to serve as both a knowledge base containing information about the self, others, and relationships, and as organizational systems that guide the processing of social information (Rudolph et al., 1995).

Empirical research has linked both children=s representations of the self and representations of peers to peer competence. Positive representations of the self have been linked with teacher ratings of peer competence (Rudolph et al., 1995; Verschuren et al., 1996). Associations between representations of the self and social behavior are more complex. Although rejected children who display high amounts of aggressive behavior possess representations of the self that are as positive as those of their classmates who are not peer rejected, the self representations of rejected children who display high amounts of withdrawing behaviors are more negative than those of their classmates (Hymel et al., 1993).

Similarly, positive representations of peers have been linked with teacher ratings of peer competence (Rudolph et al., 1995) but not to lower levels of aggressive behavior (Rabiner et al., 1993). Although theorists from three perspectives - attachment theory, social-cognitive psychology, and social-information processing theory - posit that cognitive representations of relationships shape or guide children=s discrete social-cognitive processes, to date this idea has not been empirically examined among young children.

Emotion Regulation

Emotion regulation and children=s social behavior and peer acceptance.

Theorists have suggested that the ability to regulate emotional arousal in social interaction contexts is an important developmental task of early childhood (Kopp, 1989; Maccoby, 1980; Parker & Gottman, 1989), and both theory and empirical data suggest that emotion regulation is an important predictor of individual differences in young children=s social behavior (Calkins, 1994; Dunn & Brown, 1991; Gottman, Katz, & Hooven, 1996; McDonald & Parke, 1986; Rubin et al., 1995; Thompson, 1994). Emotion regulation has been defined and operationalized in a multitude of ways. Thompson (1994) views emotion regulation as the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions in order to accomplish one=s goals. Thompson (1994) further defines emotion regulation as the process of initiating, maintaining, and modulating the occurrence, intensity, or duration of internal feeling states and emotion-related physiological processes. Thus,

according to Thompson, many processes are implicated in emotion regulation, including physiological responses (e.g., Gottman et al., 1996; Katz & Gottman, 1991; Porges, 1991), cognitive appraisal (e.g., Dodge, 1991; Garber, Braafladt, & Zemen, 1991), attention processes (Eisenberg, Fabes, Nyman, Bernzweig, and Pinuelas, 1994; Eisenberg, Fabes, Shephard, Murphy, Guthrie, Jones, Friedman, Poulin, & Maszk, 1997; Eisenberg, Guthrie, Fabes, Reiser, Murphy, Holgren, Maszk, & Losoya, 1997; Eisenberg, Shephard, Fabes, Murphy, & Guthrie, 1998; Rothbart & Bates, 1998), and response tendencies (Dodge, 1991). Because various processes have been implicated in emotion regulation, researchers have operationalized emotion regulation in several ways; these can be categorized as measures that assess physiological correlates of emotion regulation, and those that assess cognitive and behavioral skills thought to be implicated in emotion regulatory behaviors.

One physiological index of emotion regulation is vagal tone, which measures parasympathetic influence on heart rate. The vagus nerve is the major nerve of the parasympathetic nervous system. The tonic firing of the vagus nerve slows down many physiological processes, including heart rate (Gottman et al., 1996), such that when vagal tone is suppressed (withdrawn) the heart rate increases. Porges (1991) posits that individual differences in vagal tone might provide a physiological marker of an individual=s ability to regulate affective states. Baseline vagal tone is associated with greater soothability and greater ability to focus attention. Vagal tone is suppressed during states that require

focused or sustained attention and mental effort (Gottman et al., 1996), and so the child=s ability to suppress vagal tone in response to environmental demands may be an important element in children=s regulation through the ability to shift attention when necessary (Gottman et al., 1996).

Gottman et al. (1996) assessed the vagal tone of 4-year-olds through respiratory sinus arrhythmia at a baseline (viewing cartoon segments from *Charlotte=s Web*) and an excitement phase (viewing the scene from *The Wizard of Oz* in which the flying monkeys kidnap Dorothy). The ability to withdraw vagal tone, indexed by the change from the baseline to the excitement condition, predicted teacher ratings of competent peer relations at age 8. Gender differences may apply to associations between vagal tone and children=s social outcomes. Eisenberg, Fabes, Murphy, and Manszk (1995) report that among a sample of eighty-two 6- to 16-year-olds, vagal tone was positively related to competent social functioning for boys but inversely related for girls, and Eisenberg, Fabes, Guthrie, and Murphy (1996) report that in a sample of 151 third- through sixth- graders vagal tone was negatively related to girl=s prosocial reputations but not related to the prosocial reputation of boys.

Zahn-Waxler, Cole, Welsh, and Fox (1995) classified eighty-two 4- and 5-year-olds as low, moderate, or high risk for behavior disorders, based upon the severity of behavior problems. These researchers took electrocardiograms and assessed the vagal tone, heart rate, and skin conductance of participants during an astronaut game in a Aspace@ lab, where participants donned electrodes Ajust

like astronauts.@ During the space lab procedure, children watched a videotaped cartoon in which a character from outer space experienced a series of emotions. Risk groups did not differ on heart rate or vagal tone. Girls showed higher skin conductance than boys, with high-risk girls showing the highest levels. Across risk categories, higher heart rate (and heart rate deceleration) predicted children=s observed empathic and prosocial behavior during a laboratory simulation procedure in which an experiment expressed distress. Lower heart rate was associated with aggression and avoidance during the simulated empathy procedure, irrespective or risk. These findings are consistent with adult clinical literature which suggests that autonomic underarousal indexed by low heart rate underlies antisocial behavior patterns (Hare, 1978).

In addition to research focusing on the physiological markers of emotion regulation, emotion regulation has often been discussed by temperament theorists who define regulation in terms of modulating internal reactivity (Ahadi & Rothbart, 1994). Reactivity describes individual differences in threshold and intensity of emotional experience. Regulation refers to mechanisms that operate to control or modulate reactivity, and includes such processes as the ability to shift and focus attention as needed (i.e., to decrease arousal, by shifting attention from a distressing stimulus or by sustaining attention on a non-arousing stimulus, or to increase arousal by focusing attention on an arousing stimulus), behavioral approach or avoidance, and attempts at self-soothing (Eisenberg et al., 1997; Rubin et al., 1995).

Researchers working within this framework most often employ parent and/or teacher ratings to assess emotion regulation. Rubin and colleagues (1995) used a composite of two scales, five items assessing emotionality (Achild often fusses and cries@) and five items assessing soothability (Awhen upset, child quickly calms down@) from maternal reports on the Colorado Temperament Inventory (Buss & Plomin, 1984) to assess the emotion regulation of ninety-six 4-year-olds. These authors observed the children in groups of four during laboratory play sessions comprised of both structured and unstructured play activities. During all sessions, the children=s behavior was coded for social participation and the cognitive qualities of play. Children=s behavior during the free play sessions was coded for anxious behavior, hovering behavior, and aggressive behavior. During the structured play sessions, children=s behavior was coded for on-task and off-task activities. Based on these data, the investigators identified five groups of children according to combinations of high/low social interaction and good/poor regulation (the fifth group was average in both dimensions). Their analyses revealed that children who were high in social interaction, but were poor emotion regulators, scored higher on observed disruptiveness and maternal ratings of externalizing problems than did children in other groups. Children who were low in social interactions who were poor regulators displayed more wary and anxious behaviors than did other children. These findings implicate poor emotion regulation skills with behaviors that characterize both aggressive and withdrawn children.

In a series of studies, Eisenberg and her colleagues have used mother, father, and teacher ratings to assess temperamental aspects of children=s emotion regulation. Of most interest to this research group have been measures of children=s negative emotionality (Achild often worries@) and emotional intensity (Achild responds very emotionally to things around her@) as well as measures of regulatory mechanisms, particularly coping (Achild cries to elicit assistance from others@) and attentional control (Aif child doesn=t want to deal with a problem, she can easily shift attention away@).

These researchers have linked preschool boys= attentional control and coping to their constructive anger reactions (Eisenberg et al., 1994). These researchers also have found links between emotion regulation and social behavior in older children. In a sample of 199 first- through second-graders, teacher-rated socially appropriate behavior and social status, and peer ratings of liking were positively associated with attentional control and negatively associated with negative emotionality (Eisenberg et al., 1997b). Among 77 early- to middle-school age children, teacher ratings of peer competence were associated with high regulation, low levels of negative emotional intensity, low levels of nonconstructive coping, and high levels of general emotional intensity (Eisenberg et al., 1997a). In a longitudinal study that followed 82 kindergartners through sixth-grade, parent- and teacher-reports of shyness was positively related to internalizing negative emotion, coping by doing nothing, behavioral inhibition / nonimpulsivity, attention focusing, and avoidant coping, and negatively

associated with positive emotional intensity, instrumental coping, and attentional control, across ages (Eisenberg et al., 1998). In a study of 151 third- through sixth-graders, peer nominations of prosocial reputations were positively associated with attentional regulation and negatively associated with negative emotion intensity (Eisenberg et al., 1996). In sum, Eisenberg and her colleagues have demonstrated that parent- and teacher-ratings of emotion regulation are associated with children=s social outcomes in meaningful ways, in that measures of peer competence and constructive reactions to anger are positively associated with measures of attentional control and positive coping and negatively associated with the intensity of negative emotion. In contrast, measures of shyness are negatively associated with attentional control and the intensity of positive emotion.

Researchers working within the literature that focuses on the development of socially maladaptive behaviors offer the term dysregulation to describe failures in emotion regulation that occur when response systems fail and emotional pain continues or behavior tantrums or withdrawal become debilitating (Dodge & Garber, 1991). In this framework, aggressive conduct disorders, externalizing problems, and depression may be thought of as chronic dysregulation (Dodge, 1991), and some have stated that most instances of behavior problems and psychopathology in childhood involve aspects of emotion regulation or dysregulation (Cicchetti, Ackerman, & Izard, 1995). Empirically, kindergarten through eighth-grade children who endorse higher levels of depressive

symptoms reported using emotion regulation strategies significantly less often than non-depressed children, and rated their strategies as significantly less effective in altering their negative mood (Garber, Braafladt, and Weiss, 1995).

Emotion regulation and discrete social-cognitive processing. Although researchers (Dodge, 1991; Thompson, 1994) posit that discrete social processes such as encoding social cues, interpreting social cues, and generating social strategies are influenced by children=s emotion regulation, to date there is only indirect empirical evidence to support such links. Dodge and Somberg (1987) hypothesized that disruptive effects of negative emotion might be at least partially responsible for the hostile attribution bias of aggressive children. Boys were shown videotaped vignettes depicting a hypothetical peer provocation (in which the portrayed intentions of the provocateur were hostile, benign, or ambiguous). Following each vignette, participants were asked if the provocateur=s intentions were hostile or benign. Participants enjoyed a relaxed condition -- where no one watched them, the pace was slow, and the experimenter tried to put them at ease -- for the first half of the vignettes. The experimenters sought to heighten participants= emotional arousal for the second half of the vignettes. Participants were informed that the experimenter would go next door to get a boy who would play with the child, at which time participants Aoverheard@ an audiotaped, staged discussion with a confederate. The supposed peer told the experimenter that if he entered the room he was sure the two boys would fight because he did not like the boy at all. The voice of the confederate grew progressively louder, until

the experimenter returned to the participant=s room and informed him that the peer would enter the room shortly, when the participant had completed the videotaped task. Results indicated that in the relaxation condition, aggressive boys were slightly more likely to make hostile attributions than were non-aggressive boys. The experimental manipulation of the threatening condition had no significant impact upon the accuracy of the attributions made by non-aggressive boys. Aggressive boys, however, performed significantly worse during the threatening condition, and made significantly more hostile attributions than they had made during the relaxed condition. The experimenter=s rating of the participants= levels of disruption during the threat condition significantly predicted the participants= errors in making attributions following the threat condition. Thus, boys who were more upset were more likely to make interpretation errors, suggesting that the level of emotional arousal impacted this aspect of the boys= discrete social-cognitive processing.

Summary and integration. Empirical research demonstrates that parental and teacher ratings of emotion regulation, as well as physiological indices, are predictive of young children=s social behavior and peer competence. Good emotion regulation has been linked with measures of children=s peer competence, whereas poor emotion regulation has been tied to both withdrawn and aggressive behavior. Although the current state of theory posits that emotion regulation influences children=s discrete social-cognitive processing, to date, there is only indirect empirical evidence supporting this assertion, i.e., that

heightened emotional arousal exacerbates hostile attribution errors (Dodge & Somberg, 1987).

Summary and Hypotheses

Encoding social cues. Research has tied young children=s encoding of social cues to measures of competent behavior (Dodge et al., 1986; Meece, 1994; Putallaz, 1983), although results are mixed when children=s verbal ability is controlled. A significant association between encoding of social cues and preschool children=s aggressive behavior was found in one study (Weiss et al., 1993), but not in another (Meece, 1994). However, there is a considerably larger literature linking encoding of social cues and aggressive behavior in older children (see Crick & Dodge, 1994). The current work seeks to replicate earlier findings by testing the following hypothesis concerning the association between encoding of social cues and children=s behavior:

1. Children=s accuracy at encoding social cues will be positively correlated with measures of both children=s peer competence and prosocial behavior, and negatively correlated with measures of aggressive behavior, controlling for receptive vocabulary.

Hostile attributions. Empirical studies have tied young children=s hostile attributions to peer competence (Meece, 1994), and to aggressive behavior (Meece, 1994; Weiss et al., 1993). One of these studies controlled for children=s receptive verbal ability (Meece, 1994). The current study hypothesizes:

2. The proportion of hostile attributions will be negatively correlated with measures of both children=s peer competence and prosocial behavior and positively associated with measures of children=s aggressive behavior, controlling for receptive vocabulary.

Social strategy generation. Research that has examined young children=s social strategy generation has documented that social strategy responses that are more relevant to the social problem (Pettit et al., 1988), more effective (Asher & Renshaw, 1981), and more prosocial or friendly and less hostile (Asher & Renshaw, 1981; Eisenberg et al., 1994; Meece, 1994; Mize & Ladd, 1988; Pettit et al., 1988), and less passive and withdrawing (Meece, 1994; Mize & Ladd, 1988) are associated with prosocial behavior and peer acceptance. Further, social strategies that are more hostile and less friendly are associated with aggressive behavior (Meece, 1994; Mize & Ladd, 1988). One study (Meece, 1994) controlled for receptive vocabulary. Hypotheses related to social strategy generation are:

3. Social strategy responses rated as more sophisticated and relevant will be positively correlated with measures of both peer competence and prosocial behavior, controlling for receptive vocabulary.

4. Social strategy responses rated as more aggressive will be positively associated with measures of aggressive behavior and negatively associated with measures of both peer competence and prosocial behavior, controlling for receptive vocabulary.

5. Social strategy responses rated as more withdrawing will be positively correlated with measures of withdrawn behavior and negatively correlated with measures of both peer competence and prosocial behavior, controlling for receptive vocabulary.

Cognitive representations of relationships. Empirical research that has examined correlates of children=s cognitive representations of relationships have found significant associations between positive representations of the self and peer competence (Rudolph et al., 1995; Verschuren et al., 1996). More negative representations of the self have been tied to withdrawn behavior, but not to aggressive behavior (Hymel et al., 1993). Similarly, positive representations of peers have been linked with teacher ratings of peer competence (Rudolph et al., 1995), but not to aggressive behavior (Rabiner et al., 1993). Although theorists have posited that associations between representations of relationships and children=s social outcomes may be mediated by children=s discrete social-cognitive processing, this hypothesis has not been tested empirically. In the current work it is hypothesized that:

6. More positive representations of relationships will be positively associated with measures of both peer competence and prosocial behavior, and negatively associated with measures of withdrawn behavior.

7. More positive representations of relationships will be positively associated with more skill at cue encoding and more sophisticated social strategies. Moreover, associations between measures of children=s

representations of relationships and measures of both peer competence and prosocial behavior will be mediated by measures of children=s encoding of social cues and ratings of the sophistication of social strategies.

8. More positive representations of relationships will be negatively associated with the generation of withdrawing social strategies. Moreover, associations between measures of children=s representations of relationships and measures of children=s withdrawn behavior will be mediated by withdrawn ratings of social strategies.

Figure 1 presents the mediational hypotheses concerning children=s representations of relationships.

Emotion regulation. Studies of children=s emotion regulation have found that parent- and teacher-rated emotion regulation is positively associated with children=s peer competence (Eisenberg et al., 1997), and negatively associated with both withdrawn (Rubin et al., 1995) and aggressive behavior (Rubin et al., 1995). As with representations of relationships, theorists have posited that children=s discrete social-cognitive processes may mediate associations between emotion regulation and social outcomes (Dodge, 1991; Thompson, 1994), but this has not been empirically tested. In the current work, it is hypothesized that:

9. Emotion regulation will be positively associated with measures of both peer competence and prosocial behavior, and negatively associated with measures of both withdrawn behavior and aggressive behavior.

10. Emotion regulation will be positively associated with encoding of social cues and the generation of sophisticated social strategies. Moreover, associations between measures of children=s emotion regulation and measures of both peer competence and prosocial behavior will be mediated by measures of encoding of social cues and ratings of the sophistication of social strategies.

11. Emotion regulation will be negatively associated with withdrawing social strategies. Moreover, associations between measures of emotion regulation and measures of children=s withdrawn behavior will be mediated by withdrawn ratings of children=s social strategies .

12. Emotion regulation will be negatively associated with hostile attributions and aggressive social strategies. Moreover, associations between emotion regulation and measures of children=s aggressive behavior will be mediated by hostile attributions and ratings of the aggression and hostility of social strategies.

Figure 2 presents the mediational hypotheses concerning emotion regulation.

Figure 1: Proposed mediational paths between representations of relationships and measures of children=s social behavior.

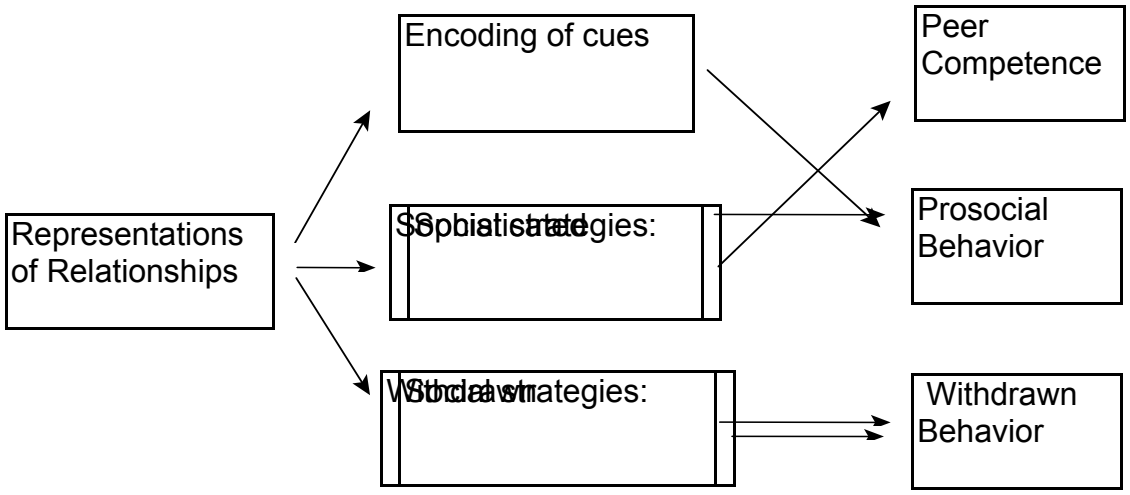
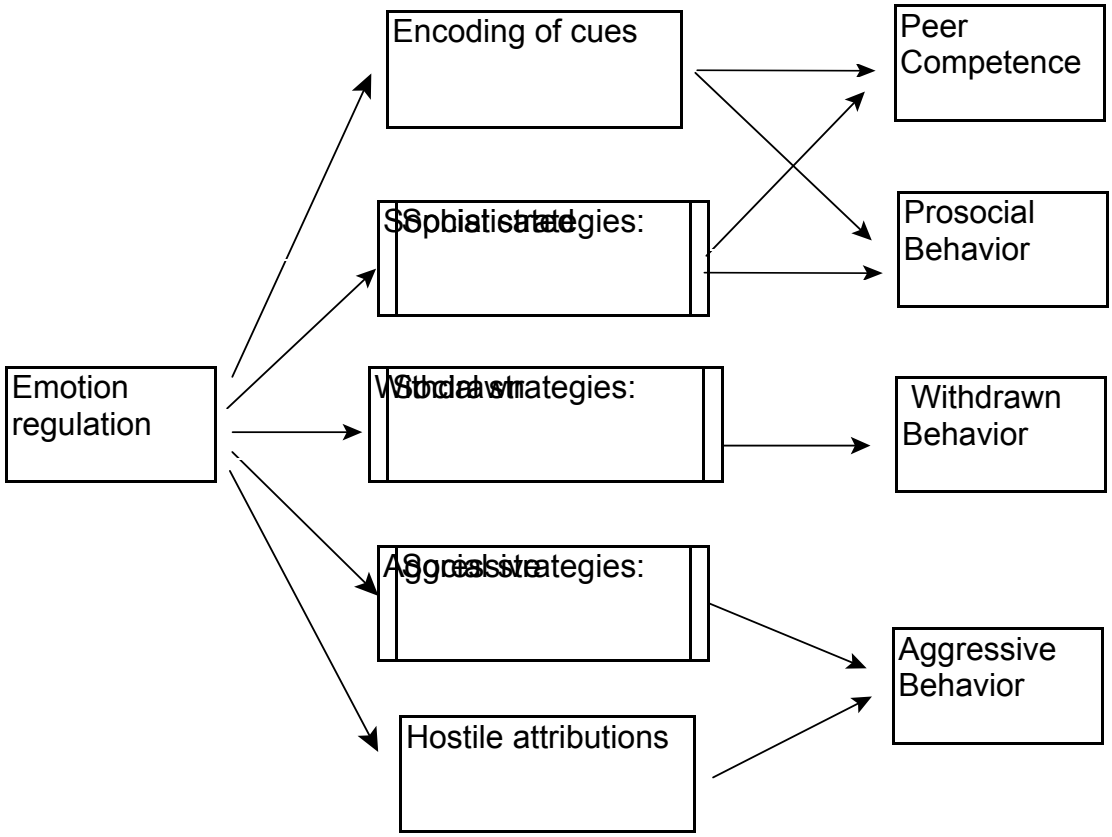


Figure 2: Proposed mediational paths between emotion regulation and measures of children=s social behavior.



METHOD

Letters of informed consent were sent to the parents of 112 children attending 4- and 5-year old classrooms at one preschool and one day care center in Alabama (a sample letter is included as Appendix A). The first center was a university-sponsored preschool serving mainly middle-income, professional families, and the second was a day care center serving mainly African-American families. Parents of 90 children (80.3%) agreed to allow their child to participate. Children who had permission to participate were given the opportunity to engage in six interviews, individually conducted at their preschool or daycare. Of those with permission, some children did not choose to participate in every interview. Because of the number of interviews, complete data were available for 83 children (92.2% of those with consent). The children with complete data ranged in age from 32 to 76 months ($\underline{M}$ = 57.9 months; $\underline{SD}$ = 9.7 months); 40 were boys, and 43 were girls. Of the 83 children, 44 (53.7%) were European-American, 27 (32.9%) were African-American, and 11 (13.4%) were members of other minority groups, predominantly Asian-American (9.8%).

Participants individually were asked to participate in each of the procedures during the normal course of the day at the preschool. If a participant did not want to participate at a given time he or she was told that it was all right,

and was assured that there would be an opportunity to participate later. Participants were asked to complete six separate interviews: (a) a videotape-based social-cognitive interview (Meece, 1994), (b) an enactive/verbal social strategy generation interview using puppets and props (Mize & Ladd, 1988), (c) a peer-affiliation interview (based on Evers-Pasquale & Sherman, 1975), (d) the Feelings About Myself and Peers puppet-based interview (Lindsey, Mize, & Meece 1997), (e) a standard sociometric interview (Asher, Singleton, Tinsley, & Hymel, 1979), and (f) the Peabody Picture Vocabulary Test (PPVT). For a measure of children=s emotion regulation, participants= mothers were asked to complete the Preschool Characteristics Questionnaire (PCQ; Finegan, Niccols, Zacher, & Hood, 1989). Finally, teachers completed two indices of children=s peer competence and behavior with peers: The Teacher=s Checklist of Peer Relations (TCPR; Dodge & Somberg, 1987), and the short form of the Preschool Socio-affective Profile (PSP; La Freniere, Dumas, Capuano, & Dubeau, 1992)

Procedures

Representations of Relationships

Peer affiliation interview. The peer affiliation interview is based on a procedure used in a social-skills intervention study conducted by Evers-Pasquale and Sherman (1975). Evers-Pasquale and Sherman (1975) report that children classified as peer-oriented using the earlier version of this instrument benefitted from watching a social skills modeling film, whereas children classified as non-peer-oriented did not. The current version of this instrument was developed for

the author=s masters= thesis, and was found to be associated with teacher ratings of peer competence among a small sample of 4- and 5-year olds. In a larger sample that included the same participants used in the Meece (1994) thesis, Meece et al. (1995) found that the number of peer-oriented choices made during the peer affiliation interview was significantly associated with teacher-rated peer competence, and with children=s encoding of social cues and generation of social strategies. Moreover, Meece et al. (1995) report some evidence that the association between scores on the peer affiliation assessment and teacher-rated peer competence may be at least partially mediated by children=s social strategy generation. Other evidence, from the same data set, of the convergent and discriminate validity of this measure comes from Meece, Laird, and Moffett (1995), who found that scores on the peer affiliation measure were associated with children=s play overtures to peers and responses to peers= play overtures, and with parent-child conversations about peers, but not with teacher-ratings of aggressive behavior, or with children=s hostile attributions. Meece et al. (1995) report adequate inter-item consistency for this measure (α = .80).

During the peer affiliation interview, children were given laminated pictures of 10 common preschool activities (e.g., playing ball, building blocks, painting) and a poster board with line drawings portraying a child alone, a child with a same-age peer, and a child with an adult. The peer affiliation interview was conducted by a trained graduate student (the author) assisted by an undergraduate student. Materials for the peer affiliation assessment were set up

as a center activity in the children's classrooms. Children completed the assessment during the normal course of center time at their kindergarten or preschool. Participants first were shown the line drawings and it was explained that the pictures represented "you by yourself, you with another kid your age, and you with a grownup." Participants then were presented with the pictures of 10 activities, one at a time in random order. Children were asked to place each activity picture on one of the drawings, depending on with whom they would like to do the activity. For example, children were asked, "Would you rather paint a picture by yourself, with another kid, or with a grownup?" After the children had sorted the 10 pictures of the activities they were helped to record their responses on a check sheet themselves, or the trained graduate student who conducted the assessment recorded their choices. Peer affiliation was calculated by dividing the total number of activities that children choose to engage in with a peer by the total number of choices participants made (α = . 70). Instructions for conducting the peer affiliaton interview and a sample code sheet are included as Appendix B.

Feelings about myself and peers (FAMP) puppet interview. The FAMP puppet interview was designed following procedures and questions similar to those used in the Berkeley Puppet Interview (Ablow & Measelle, 1991). A description of the Berkeley Puppet Interview methodology, along with validity information, is reported by Measelle, Ablow, Cowan, and Cowan (1998). These authors report moderate stability in young children=s self-concepts between

preschool, kindergarten, and first-grade, suggesting that multiple dimensions of young children=s self-concepts can be reliably assessed. Support for the method's validity was derived from consistent and meaningful patterns of convergence between children's self-perceptions as assessed by the puppet interview and ratings by adult informants--mothers, fathers, and teachers--as well as standardized test scores, reported by Measelle et al. (1998). Further, using portions of the same data set included in the current work, Lindsey (1997) found that self-efficacy items from the FAMP were associated with teacher-ratings of emotion regulation from the Child Behavior Questionnaire (Goldsmith & Rothbart, 1991). Also using portions of the same data set, Colwell, Meece, and Mize (1999) report that the cognitive representations of self and others items from the FAMP were associated with both mothers= emotion framing and children=s withdrawn behavior.

The FAMP is a 22-item interview that contains 12 items designed to assess children=s cognitive representations of self and others. The other 10 items focus on children=s self-efficacy and outcome expectations, and are not included in the current study. Two attractive hand puppets (dogs named Muffy and Fluffy) were operated by one of two trained graduate students (the author or Eric Lindsey). A trained graduate student (the author sometimes served as an assistant for Eric Lindsey, Eric Lindsey sometimes served as an assistant for the author, and Malinda Colwell sometimes assisted both) or a trained undergraduate, assited by recording children=s responses. The interviewer

directed a series of questions to the target child through the puppets. Each puppet described a characteristic about itself, followed by a contrasting description by the other puppet, and asked the child which puppet he or she was more like (e.g., AI=m a fun kid to play with,@ AI=m not much fun to play with=). After each set of descriptions the child was asked to state which of the two puppets was most like him or her.

Children=s responses were recorded verbatim by the assistant. Children=s responses were coded immediately on three-point scales, depending on which puppet=s description they identified as being like themselves, with a 1 assigned to more negative representations and 3 assigned to more positive representations. A score of 2 was assigned if a child responded that sometimes he/she was like one puppet and sometimes like the other, or that he/she was like both puppets. Following a mixed response, the interviewer prompted the child again, asking if he/she was more often like Muffy or more often like Fluffy. Again, depending on which puppet=s description the child identified as being like him/herself the response was coded with both a 2 and a 1 (indicating moderately negative representations), or a 2 and a 3 (indicating moderately positive representations). If the child repeated that he/she was sometimes like one puppet and sometimes like the other, or that he/she was like both puppets, the score remained a 2 only. Later, when the data were entered for analysis, children=s responses were converted to 5-point scales. Because the children=s responses were recorded in categories according to their responses during the

assessment and were not subjective, no estimates of inter-rater reliability were necessary. Instructions of conducting and coding the FAMP are included as Appendix C.

An examination of the frequency distributions of the 12 items revealed that children in this sample rarely offered any but the most positive response (coded as 5 on the five-point scale). Across the 12 items, incidence of scores less than 5 ranged from 8 to 27 (mean = 13.9 responses that were not 5). That is, a minium of 5 and a maximum of 27 children described themselves in other than the most positive terms for any item. This finding is consistent with research demonstrating that young children tend to make overestimations in their self-perceptions (reference). Because of the low frequency of scores that were not the most positive, data for these 12 items were re-coded dichotomously as either a zero, for any score that was not the most positive (i.e., any response coded 1, 2, 3, or 4 on the 5-point scale) or 1 (coded as 5 on the 5-point scale).

An inspection of the 12 re-coded items revealed that three items were not associated with the remainder of items. These three items all pertained to feelings of anger and hostile attributions about classmates (AI get mad at the kids at school,@ Akids at my school are mean@ and AI=m mean to other kids@). These three items were not used in further analyses. The remaining 9 items pertaining to representations about the self and peers were averaged to form a <u>beliefs about self and peers</u> composite (α = .62), with higher scores reflecting more

positive views. A list of all FAMP items, highlighting the 9 items comprising this measure, is included in Appendix C.

Emotion Regulation

Maternal ratings. Mothers of participants were asked to complete the Preschool Characteristics Questionnaire (PCQ) (Finegan et al.,1989). The PCQ is a normed questionnaire for parents of toddlers and preschoolers designed to assess children=s temperamental characteristics. Validity and reliability information for the PCQ can be found in Finegan et al. (1989), who report that temperment ratings made when children were 7-months old were moderately correlated with the scores from the difficult scale of the PCQ made when the children were 4-years-old. Of the infants classified as difficult at age 7 months, 46% continued to be perceived as difficult at age 4 years. The PCQ consists of 32 items that assess children=s adaptability, emotional intensity levels, mood changes, and consistency in routines. For each item, mothers indicated the extent to which the description is accurate for their child on a scale of 1 to 7. A copy of the PCQ is included in Appendix D.

Completed PCQs were available for 65 of the children in the study. Exploratory factor analysis of the 32 items revealed nine factors with an eigenvalue greater than 1. Results revealed that items loading on the first factor (eigenvalue = 7.2) were consistent with the factor loadings reported by Finegan et al. (1989) for the construct labeled Adifficult.@ Based on the results from the exploratory factor analysis and the results reported by Finegan et al. (1989),

eight items were selected for further analyses. Each of these eight items was reported to load (or cross-load) on a factor labeled Adifficult@ by Finegan et al. (1989), with the exception of one item (AGoes when asked to >stop,= or >come=@). Two additional items (Anegative response to new food@ and Anegative reaction to getting dressed@) that were included in the Adifficult@ factor by Finegan et al. (1989) were not included on this scale because of low factor loadings in the current data set and low item-total correlations between these items and the other items in the scale. Mother-rated emotion regulation (alpha = .88) was computed as the mean of the remaining 8 items. The 8 items used to compute this measure are included in Appendix D.

Teacher ratings. The Child Behavior Questionnaire (CBQ) is a caregiver-report instrument developed to provide a detailed assessment of temperment in young children. The CBQ is a 195-item measure broken into 15 separate sub-scales assessing major dimensions of temperment. Validity and reliability information for these subscales can be found in Goldsmith and Rothbart (1991). Goldsmith and Rothbart (1991) report that the internal consistency for the 15 subscales of the CBQ range from .67 to .94, and that temperment assessed during infant laboratory procedures predicts temperment ratings from the CBQ at age 7. Items are rated on 7-point Likert-type scales with a 1 denoting the item is extremely untrue of the child and a 7 denoting that the item is extremely true of the child. Items from the soothability and inhibitory control subscales have been used by previous researchers as indicators of children=s emotion regulation.

Eisenberg et al. (1997) found that scores from the soothability and inhibitory control subscales were associated with socially appropriate behavior. Eisenberg et al. (1999) report significant associations between ratings of shyness and both the soothability and inhibitory control subscales. Additionally, Lindsey (1997) found a significant association with teacher-ratings of competent and withdrawn behavior and both the soothability and inhibitory control subscales.

Based on previous research (Eisenberg et al., 1997; Eisenberg et al., 1999: Lindsey, 1997), items from two subscales, the falling reactivity / soothability and inhibitory control of the CBQ (Goldsmith & Rothbart, 1991), were modified as necessary to create an 18-item questionnaire suitable for teachers. For instance, an item originally reading Abed time@ was changed to Anap time.@ Soothability was assessed with eight items (e.g., Aseems to forget a bump or scrape after a couple of minutes,@ Achanges from being upset to feeling much better within a few minutes@). Emotional control was assessed with 10 items (e.g., Agets excited and worked up by even little things,@ Agets angry more easily than most children his/her age@). The head teacher in each classroom completed the questionnaire, and items within the two subscales were averaged to form measures of soothability (α = .90) and emotional control (α = .92). Because the two scales reflect two aspects of children=s behavioral emotion regulation, the ability to sooth and calm one=s self, and the intensity of emotional experience, the two scales were kept separate to provide two indicators of teacher-rated emotion regulation. Appropriate items were reversed so that high scores

represent greater soothability and emotional control and low scores represent lesser soothability and emotional control. A copy of the CBQ is included in Appendix D.

Discrete Social Cognitions

Hostile attributions and encoding of social cues videotape-based interview. The video-tape interview was based on procedures used by Dodge et al. (1990) and Weiss et al. (1994). The coding scheme for encoding social cues was adopted from that used by Dodge et al. (1990) and Weiss et al. (1994). Both studies (Dodge et al., 1990; Weiss et al., 1994) report significant associations between encoding of social cues and children=s aggressive behavior. Meece (1994) assessed 4- and 5-year old children=s encoding of social cues, using the coding scheme developed by Dodge et al. (1990) and Weiss et al., (1994), and the videotapes that are used in the current investigation. Meece (1994) reports that children=s encoding of social cues had adequate inter-item consistency (α = .86), and was significantly associated with teacher-rated peer competence. The procedure used to assess hostile attributions was derived from procedures used in numerous studies conducted by Dodge and his colleagues, including Dodge et al. (1990) and Weiss et al. (1994), who found significant associations between hostile attributions and children=s aggressive behavior. Meece (1994) used the same procedure as in the current work, and reported significant associations between hostile attributions and teacher-rated peer competence.

The video-tape based interview was conducted by a trained graduate student (the author) and trained undergraduate assistants. During the videotape-based interview, children watched 10 vignettes in which child actors (ages 3 - 7) depicted an ambiguous peer provocation occurring during social interaction scenarios (such as a peer who refuses to share, a child who is rejected by peers, a child who enters a new classroom) (Details of producing the videotapes are more fully described in Meece, 1994; Appendix E contains detailed description of the actions portrayed in each of the ten vignettes, and complete instructions for conducting the interview and coding can be found in Appendix F). Following the presentation of each of the 10 stories, participants were asked to describe the events that took place. Children=s responses were recorded with paper and pencil, and also audio-recorded (the experimenter repeated each child's verbal answers (e.g., Aso they were building a tower@) to help ensure the clarity of the audio-taped backup).

For all vignettes, participants= descriptions of the actions portrayed were scored on a 0-3 scale for accuracy of social cue encoding. To be scored 0, the child's response contained virtually nothing that actually occurred on the tape. A score of 1 represented a response that contained some, but not most, relevant information or contained most relevant information but some added information that did not occur on the tape. Responses scored as 2 described the significant actions portrayed on the tape, and did not contain additional or incorrect information. Responses scored as 3 contained all the significant actions in the

story as well as additional relevant descriptions of the event and no incorrect information. One graduate student held primary responsibility for coding the responses, and inter-rater reliability was established through a second graduate student coding 25% of the participants' answers (κ = .83; percent agreement = 87.5%). The internal consistency was computed across the vignettes (α = .90), allowing for the calculation of encoding of social cues as the average accuracy rating received across stories.

Following the child=s description of each vignette, interviewers asked the participant if the child depicted in the story was being mean or not being mean, and noted the children=s answers. The proportion of stories for which the child indicated the provocateur was being mean formed a measure of children's tendency to make hostile attributions (α = .82). In addition, children=s descriptions of the events were coded for the presence of any spontaneous attributions (e.g., Athe mean boy,@ Athe bad girl,@ Athat was mean@). The same graduate student who coded the accuracy of children=s encoding held primary responsibility for coding spontaneous hostile attributions. A second graduate student provided a check of inter-rater reliability through coding a subset of 25% of the participant=s answers (κ = 1.0; percent agreement = 100%). The total number of spontaneous attributions made by each participant formed a measure of spontaneous hostile attributions (α = .60).

Enactive/verbal social strategy generation interview. The enactive / verbal social strategy generation interview was developed by Mize and Ladd (1988). The enactive / verbal social strategy generation interview was conducted on separate occasions from the videotape-based interview, the peer affiliation interview, or the FAMP. Participants were asked by a trained graduate student (the author or Malinda Colwell) or one of two undergraduate research assistants to "play a game with puppets and pictures." The experimenter asked the child to select a puppet "to pretend to be you," and, using additional puppets and small toy props enacted each of six social situations in a random order (Mize & Ladd, 1988). The experimenter acted out the dialogue and actions of the story with the puppets and participants were encouraged to spontaneously enact a response to the presented social dilemma. In the event that the child did not spontaneously begin to enact a response, he or she was prompted with, "can you show me what you would do now?" All of the interview sessions were audio-recorded, and trained undergraduate assistants recorded a verbatim written record of the child=s verbal and enactive responses. The experimenter repeated the participants' responses and described the participants' actions so these would be clear on the audiotaped record. Following the six enactive stories, participants were presented with the same six stories via line drawings and an accompanying verbal narrative. Following each of the line-drawing stories, participants were asked what they would do if confronted with the same situation, and their responses were recorded as with the enactive procedure. Both the enactive and

the line-drawing assessments were conducted during the same interview session. The enactive interview was always presented first, because this interview is designed to elicit spontaneous social strategies. It was deemed most appropriate to conduct the line-drawing based interview second because this interview is intended to assess thoughtful, reflective social strategies.

The quality of strategies was scored on a 5-point Likert-type scale of sophistication, and dichotomous scales of both withdrawal and aggression, for each of the six enactive and the six line-drawing based responses. One graduate student (the author) held primary responsibility for coding participants= social strategies on each of the three scales. Inter-rater reliability was assessed through a second graduate student (Jared Lisonbee) coding 25% of the participants= social strategies on each of the three scales. The sophistication scale was developed by Meece and Mize (1993) based on previous research, and was used by Meece (1994). The withdrawn and aggression scales were adapted by the author from the scales used by Mize and Ladd (1988) and Mize and Cox (1989) under the guidance of Jacquelyn Mize.

Children=s strategies were first rated on a 5-point Likert type scale of sophistication. A highly sophisticated response was one that made use of relevant environmental and social cues presented in the vignette in the framing of a strategy, and was mature and elaborated. Responses scored in the mid-range of this scale were slightly vague, less elaborated upon, and less mature. An unsophisticated response was one that was so vague or general that it could be

equally applicable to any situation, or of unlikely relevance to the current situation (e.g., AI=d play@). Reliability was established through multiple coders rating 25% of the vignettes (κ = .82). A sophistication score was computed for the enactive portion of the interview by dividing the total sophistication score of the enactive items by the total number of responses on the enactive interview (α= .72). A sophistication score was computed for the verbal segment of the interview by dividing the total sophistication score by the total number of responses on the verbal portion of the interview (α = .80). Scores from the two segments of the interview were highly inter-correlated (r = .60, p < .01), and so a total sophistication score was computed as the total sophistication score divided by the total number of responses coded. The internal consistency of strategy sophistication was α = .84.

Strategies also were coded on a dichotomous scale of withdrawal. Responses that were actively engaging, were likely to continue any form of peer interaction, and stressed peer contact were coded as 0. Responses that were unlikely to result in continued, positive interaction (i.e., withdrawing or passive strategies) were coded as 1. Interrater reliability was assessed for the withdrawal rating (κ = .92). A withdrawn score for the enactive portion of the interview was computed by dividing the total of participants= withdrawn score on the enactive items by the total number of enactive items completed (α= .45). A withdrawn score for the verbal portion of the interview was computed by dividing the total of participants= withdrawn score on the verbal items by the total number of

responses on the verbal segment of the interview (α = .50). The enactive and verbal withdrawn scores were highly correlated (r = .98, p < .01), and so a composite measure of strategy withdrawal was computed by dividing the total of participants' withdrawal ratings by the total number of strategies coded (α = .60).

Third, strategies were coded on a dichotomous scale of aggression. Strategies that did not mention the use of verbal or physical aggression were coded as zero. Strategies that were hostile or harmful to the peer, such as verbal threats and direct physical or verbal aggression, were coded as one. Inter-rater reliability for this rating was adequate (κ = 1.0). An aggression rating for the enactive portion of the interview was computed by dividing the total aggression ratings on the enactive segment by the total number of enactive responses (α = .59). An aggression rating for the verbal segment of the interview was computed by dividing the total number of aggression ratings on the verbal portion of the interview by the total number of responses during the verbal segment (α = .58). Scores from the two segments of the interview were significantly correlated (r = .33, p < .01), and so a composite measure of strategy aggression was calculated by dividing the total aggression ratings by the total number of strategies generated (α = .72). Instructions for conducting and coding the enactive and line-drawing measures can be found in Appendix G.

Social Behavior

Teacher ratings of social behavior. To assess children=s general social skills and behavior with peers, the head teachers in each classroom were asked

to complete the Teacher=s Checklist of Peer Relations (TCPR; Dodge & Somberg, 1987) and the short form of the Preschool Socio-affective Profile (PSP; La Freniere et al., 1992). The TCPR consists of 17 items rated on 5-point Likert-type scales, 4 of which pertain to the children=s aggression (e.g., Astarts fights with other children@), 6 of which pertain to children=s peer acceptance (e.g., Ais sought out by other children to play with@), and 7 items pertaining to children=s social problem solving (e.g., Agenerates high quality solutions to interpersonal problems@). The scales from the TCPR have shown adequate reliability in past research (see Dodge & Coie, 1987;Dodge & Somberg, 1987) The four aggression items were averaged to form a composite of teacher-rated aggression (α = .90), and the six peer acceptance items were averaged to form a composite of teacher-rated peer competence (α = .86). The seven social-problem solving items were not used in the current investigation. Because one goal of the current study was to assess children=s discrete social-cognitive processing, the social-problem solving scale, which includes measures that tap teachers= impressions of children=s skill at processes very similar to discrete-social problem solving (ie., generating high quality social strategies) was not included in the current work. An example of the TCPR is included as Appendix H.

The short form of the PSP contains 30 items rated on 6-point Likert-type scales designed to tap three areas of children=s emotional and behavioral competence: (a) positive qualities of child=s adaptation (e.g., negotiates solutions to conflicts with other children, cooperates with other children); (b) angry,

aggressive, and oppositional behaviors (e.g., irritable, gets mad easily, gets into conflicts with other children); and (c) anxious, isolated, and withdrawn behaviors (e.g., remains apart, inactive, watches others play). Previous research (La Freniere et al., 1992) has shown the three factors of the PSP to be internally consistent (α s = .92, .90, and .85 for positive, aggressive, and withdrawn scales, respectively) and adequate 2-week test re-test reliability (r s = .86, .82, and .78 for positive, aggressive and withdrawn, respectively).

Because the current investigation was primarily concerned with young children=s social behavior with peers, only those PSP items that refer to peer-based behavior were chosen for inclusion in composites. Thus, items that pertain to behavior with the teacher (for example Aopposes the teacher=s suggestions,@ Adefiant when reprimanded@) or materials (Adestroys things when angry with the teacher,@ Atakes care of toys@) were discarded. Additionally, because of the interest in aspects of children=s emotion regulation as a predictor of children=s social behavior, items that refer to emotional states (e.g., Airritable,@ Aworries@) were eliminated. The six prosocial items that pertained to behavior with peers were averaged to form a composite index of teacher-rated prosocial behavior (α = .85). Four items pertained to children=s withdrawn and isolated behavior with peers. These four items were averaged to form a composite of teacher-rated withdrawn behavior (α = .85). Only three items pertained to aggressive behavior with peers (as opposed to angry or irritable emotion states). These three items had acceptable internal consistancy (α = .78). The three aggression items from

the PSP were significantly associated with the aggression composite from the TCPR (r = .74, p < .01), and so the mean of the three PSP aggression items and the five TCPR aggression items was computed as a single index of teacher-rated aggression (α = .91). An example of the PSP, with the items used in the current work highlighted, is included as Appendix J.

Receptive Vocabulary

Peabody Picture Vocabulary Test. In this assessment, subjects are shown a series of panels containing line drawings of four common objects, and subjects are asked to select which of the four objects depict a particular term. For example, for one item subjects are shown a panel composed of pictures of a flashlight, a sailboat, a basket and a hot-air-balloon. Subjects are next asked to Apoint to the boat.@ Detailed instructions for conducting the PPVT as well as reliability and validity information for this instrument can be found in Dunn and Dunn (1981). Correlations from alternate-forms retests, over 9 to 31 days, ranged from .58 to .78 for children ages 3 to 6, and correlations between the PPVT and other vocabulary tests range from .20 to .89 (Dunn & Dunn, 1981). In the current work, because the interest was in controlling for individual differences in each child=s receptive vocabulary, and not in comparing children=s receptive vocabulary to that of other same-age children, raw PPVT scores were used instead of standardized scores.

RESULTS

Results are presented in the following seven sections. In each of these sections, measures are grouped according to the major hypotheses of the study. In the presentations that follow, the term independent variables refers to measures of the two latent constructs: (a) positive representations of self and peers (peer affiliation and beliefs about self and peers), and (b) emotion regulation (mother-rated emotion regulation, teacher-rated soothability, and teacher-rated emotional control). Similarly, the term mediating variables refers to measures of discrete social-cognitive processes (encoding social cues, hostile attributions, and social strategy generation), that are proposed to mediate associations between the independent and dependent variables. Finally, the term dependent variables refers to measures of social behavior (peer competence, prosocial behavior, withdrawn behavior, and aggressive behavior), that are proposed as potential outcomes of the independent and mediating variables.

The first section presents descriptive data for each of the variables in the study. The second major section focuses on associations within each of the three broad measurement domains: among the independent variables, among the proposed mediating variables, and among the dependent variables. The third major section examines associations between each of the independent variables

and each of the proposed mediating variables. The fourth major section presents associations between each of the independent variables and each of the dependent variables, and associations between each of the mediating variables and each of the dependent variables. Additionally, results testing these associations while controlling for age and PPVT scores are reported. Analyses in the fifth major section test the relative utility of each of the proposed mediating variables in the prediction of measures of social behavior. The sixth major section focuses on analyses testing the hypotheses that associations between the each of the independent and dependent variables are mediated by measures of discrete social-cognitive. Finally, the seventh major section reports exploratory results testing a post-hoc hypothesis that measures of emotion regulation moderate associations between measures of discrete social-cognition and measures of social behavior.

Descriptive Data

Table 1 presents descriptive data (mean, standard deviation, range) for each of the variables included in this study. Also included in Table 1 is the number of items per composite and the alpha for each composite, along with the source of the measure. As shown in Table 1, on average mothers and teachers viewed children as quite skilled in regulating their emotions (Ms= 4.4, 4.3 and 5.0 for parent-rated emotion regulation and teacher-rated soothability and emotional control, respectively, all 7-point scales), and there was a good deal of variance in the ratings made by both teachers and mothers. For example, scores on

Table 1

Descriptive statistics.

	N	Range	Mean	SD	# Items	α	Source
Age in months	83	32-76	57.9	9.7			
PPVT (raw)	70	9-93	49.4	20.2			PPVT
Independent Variables: Emotion Regulation							
Emotion regulation	69	2.0-6.1	4.4	1.0	8	.88	Mother[1]
Soothability	75	1.4-7.0	4.3	1.3	10	.92	Teacher[2]
Emotional control	75	2.5-6.9	5.0	1.0	8	.90	Teacher[2]
Independent Variables: Representations of Self and Peers							
Peer affiliation	75	0-10.0	4.5	2.4	10	.70	Interview[3]
Beliefs about self/peers	68	3-9.0	7.0	1.8	9	.62	FAMP[4]
Mediating Variables: Discrete Social-cognitions							
Encoding social cues	75	0-2.5	1.4	0.5	10	.90	Video[5]
Hostile attributions	75	0-1.0	0.7	0.3	10	.82	Video[5]
Spontaneous attributions	75	0-0.5	0.1	0.2	10	.60	Video[5]
Strategy sophistication	71	1.0-3.5	2.4	0.6	12	.84	Enactive[6]
Strategy withdrawal	71	0.2-1.0	0.7	0.2	12	.60	Enactive[6]
Strategy aggression	71	0.0-0.7	0.2	0.2	12	.72	Enactive[6]
Dependent Variables: Social Behavior							
Peer competence	80	2.3-5.0	4.3	0.6	6	.86	Teacher[7]
Prosocial behavior	82	1.3-6.0	4.1	1.0	6	.85	Teacher[8]
Withdrawn behavior	82	1.2-5.2	2.7	0.8	4	.85	Teacher[8]
Aggressive behavior	82	1.0-4.5	1.8	0.8	8	.91	Teacher[78]

notes: 1. mother-rating on Adifficult@ scale of PCQ; 2. teacher-rating of CBQ scales; 3. Peer Affiliation Interview; 4. Feelings and Beliefs about Myself and Peers puppet interview; 5. Video-tape based interview; 6. enactive/reflective social knowledge interview; 7. teacher-ratings from TCPR; 8. teacher-ratings from PSAP

mother-rated emotion regulation ranged from 2.0 to 6.2 on a 7-point scale, and scores on teacher-rated soothability ranged from 1.4 to 7.0 on a 7-point-scale. Also shown in Table 1, considerable variation existed in measures of children=s representations of self and others. For peer affiliation, some children did not make any peer-based choices, whereas other children made peer-based choices all ten items. Similarly, for beliefs about self and peers, some children chose no positive descriptors of themselves or peers, whereas other children chose positive descriptors exclusively. Finally, teachers tended to view the children=s social behavior quite positively, with means of 4.3 on the 6-point peer competence scale and 4.1 on the 6-point prosocial behavior, in contrast to means of only 2.7 on the 6-point withdrawn behavior scale and 1.8 on the 6-point aggressive behavior scale.

Associations Among Variables Within Measurement Domains

Associations among independent variables. Table 2 presents associations among the three measures of emotion regulation (parent-rated emotion regulation, and teacher-rated emotional control and soothability) and the two measures of children=s representations of relationships (peer affiliation and beliefs about self/peers). Teachers= ratings of soothability and emotional control were significantly and positively correlated. Mother-rated emotion regulation was significantly associated with teacher ratings emotional control ($r = .31$, $p < .01$)

but not with teacher-rated soothability (r = .01, ns). None of the emotion regulation ratings were significantly associated with measures of representations

Table 2

Associations among independent variables (emotion regulation and representations of relationships).

	1.	2.	3.	4.
Emotion Regulation:				
1. Teacher-rated emotional control				
2. Teacher-rated soothability	.41* (75)			
3. Mother-rated emotion regulation	.31* (61)	.01 (61)		
Representations of Relationships:				
4. Peer affiliation	-.10 (70)	.12 (70)	-.04 (61)	
5. Beliefs about self/peers	-.12 (61)	.19 (61)	.08 (62)	-.09 (60)

Note: The n for each analysis is presented in parenthesis.

* = $p < .01$

of relationships (r s ranged from -.12 to .19, all ns). Peer affiliation was not significantly associated with feelings and beliefs about self and peers (r = .09).

Associations among proposed mediating variables. Table 3 presents correlations among the discrete social-cognitive measures (encoding of social cues, hostile attributions, social strategy generation). Encoding of social cues was significantly associated with the forced-choice measure of hostile attributions (r = .33, p < .01), indicating that children more skilled at encoding social cues selected more benign attributions when presented with a forced-choice between a hostile and benign attribution. However, there was no association between the accuracy of encoding social cues and spontaneously generating hostile attributions. Additionally, children more skilled at accurately encoding social cues generated social strategies that were rated as more sophisticated and less withdrawing. The sophistication ratings of social strategies and the withdrawal ratings of social strategies were negatively and significantly correlated with each other (r = -.50, p < .01), but were not associated with the rating of social strategy aggression.

Associations Among Independent Variables and Proposed Mediating Variables

Table 4 presents associations between each measure of emotion regulation and each measure of discrete social-cognition, and each measure of representations of self and peers and each measure of discrete social-cognition. As seen in Table 4, there was only one significant correlation between the three

emotion regulation variables and the six social-cognitive variables. Teacher ratings of children=s soothability was significantly and negatively associated with

Table 3

Associations among proposed mediating variables (discrete social-cognition variables).

	1.	2.	3.	4.	5.
1. Encoding of social cues					
2. Hostile attributions	.33* (75)				
3. Spontaneous attributions	-.01 (75)	.15 (75)			
4. Strategy sophistication	.35* (66)	-.01 (66)	.02 (66)		
5. Strategy withdrawal	-.33* (66)	-.01 (66)	.28* (66)	-.50* (71)	
6. Strategy aggression	-.16 (66)	.10 (66)	.06 (66)	.03 (71)	-.06 (71)

note: The n for each analysis is presented in parenthesis.

* = *p* < *.01*

Table 4
Associations between independent variables and proposed mediating variables.

	Teacher-rated Emotional Control	Teacher-rated Soothability	Mother-rated Emotion Regulation	Peer Affiliation	Beliefs about Self/Peer
Encoding of social cues	-.14 (69)	-.23* (69)	.01 (65)	-.02 (70)	-.06 (63)
Hostile attributions	-.12 (69)	-.10 (69)	.03 (65)	.04 (70)	.12 (63)
Spontaneous attributions	-.12 (69)	.12 (69)	-.19 (65)	-.01 (70)	.13 (63)
Strategy sophistication	-.12 (66)	-.09 (66)	.14 (60)	.36* (67)	.07 (57)
Strategy withdrawal	.13 (66)	.11 (66)	-.13 (60)	-.36* (67)	-.01 (57)
Strategy aggression	-.11 (66)	.04 (66)	.01 (60)	.15 (67)	-.10 (57)

Note: The n for each analysis is presented in parenthesis.

* = $p < .01$

children=s accuracy of encoding social cues (r = -.23, p < .01), indicating that more soothable children were less accurate in their cue encoding. For the representations of relationships measures, children who chose to engage in more activities with same age peers (peer affiliation) generated social strategies that were rated as more sophisticated and less withdrawn. Feelings and beliefs about self and peers was not significantly associated with any discrete social-cognitive variable.

Associations Among Independent Variables, Proposed Mediating Variables and Dependent Variables

Associations among independent variables and dependent variables.

Table 5 presents associations between each of the measures of emotion regulation and each of the measures of social behavior, and associations between each of the measures of representations of self and peers and each of the measures of social behavior. As shown in Table 5, significant associations were found between several of the measures of emotion regulation and the social behavior measures. Teacher-ratings of competent peer behavior were associated with both teacher-rated soothability (r = .22, p < .05) and mother-rated emotion regulation (r = .21, p < .05). Moreover, teacher-rated prosocial behavior was significantly and positively associated with teacher-rated emotional control (r = .36, p < .05) and soothability (r = .55, p < .05) and was marginally associated with parent-rated emotion regulation (r = .16, p < .10). Thus, children viewed as

more skilled at emotion regulation were described as displaying more competent and prosocial behavior. Withdrawn behavior was significantly

Table 5

Associations among independent variables and dependent variables.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Emotion Regulation:				
Teacher-rated emotional control	.09 (73)	.36* (75)	.50* (75)	-.54* (75)
Teacher-rated soothability	.22* (73)	.55* (75)	.02 (75)	-.34* (75)
Mother-rated emotion regulation	.21* (66)	.16+ (68)	-.11 (68)	-.17+ (68)
Representations of Relationships				
Peer affiliation	.05 (73)	.21* (75)	-.18+ (75)	.00 (75)
Beliefs about self/peers	.09 (64)	-.12 (66)	-.26* (66)	.09 (66)

Note: The n for each analysis is presented in parenthesis.

** = p < .05; + = p < .10*

associated only with teacher-rated emotional control (r = .50, p < .05), whereas aggressive behavior was negatively and significantly associated with teacher-rated emotional control (r = -.54, p < .05) and soothability (r = -.34, p < .05), and marginally associated with parent-rated emotion regulation (r = -.17, p < .10).

Table 5 also displays associations between measures of representations of self and peers and teacher-rated social behavior. Prosocial behavior was positively and significantly associated with peer affiliation (r = .21, p < .05), indicating that children whom teachers viewed as displaying more prosocial behavior expressed a greater desire to engage in activities with same age peers. Moreover, teacher-rated withdrawn behavior was negatively and signifi cantly associated with feelings and beliefs about self and peers (r = -.26, p < .05) and marginally associated with peer affiliation (r = -.18, p = .06). Thus, children whom teachers described as withdrawing had more negative views of themselves and peers, and had a somewhat lesser desire to engage in activities with same-age peers.

Associations among proposed mediating variables and dependent variables. Table 6 presents associations between each measure of discrete social-cognitions and each measure of social behavior. Children viewed by teachers as more competent with peers were more accurate in encoding social cues. Teacher-rated peer competence was not significantly associated with any other discrete social-cognitive variable. Children whom teachers described

Table 6

Associations among proposed mediating variables and dependent variables.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Encoding of social cues	.26* (73)	.16 (75)	-.39* (75)	.10 (75)
Hostile attributions	.11 (73)	.08 (75)	-.11 (75)	.12 (75)
Spontaneous attributions	.15 (73)	.07 (75)	-.11 (75)	.06 (75)
Strategy sophistication	.17 (69)	.24* (71)	-.29* (71)	.05 (71)
Strategy withdrawal	-.18 (69)	-.11 (71)	.33* (71)	.08 (71)
Strategy aggression	.06 (69)	-.02 (71)	-.07 (71)	.02 (71)

note: The n for each analysis is presented in parenthesis.

* = $p < .05$

as displaying more prosocial behavior generated social strategies that were rated as more sophisticated than the strategies of children described by teachers as displaying less prosocial behavior. Social strategy sophistication was the only discrete social-cognitive variable associated with teacher-rated prosocial behavior. Children whom teachers described as displaying more withdrawn behaviors were significantly less accurate at encoding of social cues ($r = -.39$, $p < .05$), and generated social strategies rated as less sophisticated ($r = -.29$, $p < .05$) and more withdrawing ($r = .33$, $p < .05$). No significant associations were obtained between teacher-ratings of aggressive behavior and the discrete social-cognitive variables.

Associations among independent variables, dependent variables, and mediating variables controlling for receptive vocabulary, age, and sex. Table 7 presents associations among age and raw PPVT scores, the independent variables, the proposed mediating variables, and the dependent variables. Age was not significantly associated with any of the emotion regulation or representations of relationships measures. Significant associations were obtained between age and several of the discrete social-cognitive measures: Older children were more skilled at encoding social cues ($r = .57$, $p < .05$), made more hostile attributions ($r = .40$, $p < .05$), and generated social strategies rated as more sophisticated ($r = .52$, $p < .05$) and less withdrawing ($r = -.33$, $p < .05$). Teachers saw older children as displaying more prosocial behavior ($r = .25$, $p < .05$) and less withdrawn behavior ($r = -.21$, $p < .05$).

Table 7

Associations among independent variables, mediating variables, and dependent variables, and child age and raw PPVT scores, and T-tests by sex.

	Age (r)	Raw PPVT (r)	Sex (t)
Age			.97
PPVT (raw)	.58*		.49
Independent Variables: Emotion Regulation			
Teacher-rated Emotion regulation	-.14	-.20	-3.1*
Teacher-rated Soothability	-.05	-.01	.14
Mother-rated Emotional control	-.06	-.09	-3.1*
Independent Variables: Representations of Self and Peers			
Peer affiliation	.14	.27*	.84
Beliefs about self/peers	-.03	-.04	-1.2
Mediating Variables: Discrete Social-Cognitions			
Encoding of social cues	.57*	.31*	.83
Hostile attributions	.40*	.10	.32
Spontaneous attributions	.14	.10	1.5
Strategy sophistication	.52*	.51*	-1.1
Strategy withdrawal	-.33*	-.40*	1.6
Strategy aggression	.00	-.10	.78
Dependent Variables: Social Behavior			
Peer competence	.12	.17	.26
Prosocial behavior	.25*	.26*	-.64
Withdrawn behavior	-.21*	-.13	-1.3
Aggressive behavior	.02	-.23*	.99

note: * = $p < .05$

Raw PPVT scores were not significantly associated with any measure of emotion regulation, but were associated with one measure of representations of self and peers, peer affiliation (r = .27, p < .05). Raw PPVT scores were associated with three discrete processing variables: encoding social cues (r = .31, p < .05), strategy sophistication (r = .51, p < .05), and strategy withdrawal (r = -.40, p < .05). Finally, raw PPVT scores were associated significantly and positively with teacher-rated prosocial behavior (r = .26, p < .05), and were significantly and negatively correlated with teacher-rated aggressive behavior (r = -.23, p < .05).

Also displayed in Table 7 are results from a series of T-tests examining sex differences in all variables. Significant differences were obtained for only two measures: teacher rated emotional control (t = -3.1, p < .05) and parent-rated emotion regulation (t = -3.1, p < .05). An examination of the means for these two items revealed that girls were rated as more skilled at emotion regulation than were boys by both parents and teachers. For teacher-rated emotional control the mean for girls was 4.7, whereas the mean for boys was 3.8. For parent-rated emotion regulation, the mean for girls was 4.8 and the mean for boys was 4.1.

It was hypothesized that significant associations among (a) the independent variables and the dependent variables, and (b) the mediating variables and the dependent variables, would remain significant even when age and verbal ability were controlled. To test this hypothesis, partial correlations

controlling for age and then for raw PPVT scores were computed. Because complete data were not available for every subject, there is some discrepancy in the ns used in computing the partial correlations and those included in the zero-order correlations reported previously. Table 8 presents partial correlations among the independent variables (emotion regulation and representations of self and peer) and dependent variables, controlling for age. Of the 12 associations that were significant in the zero-order correlations (see Table 5), only one association was no longer significant at the .05 level when controlling for age. The association between peer affiliation and prosocial behavior dropped from .21 ($p < .05$) to .18 ($p = .06$) when age was controlled. Moreover, one association (parent-rated emotion regulation and teacher-rated prosocial behavior) that had been only marginally significant became significant when age was controlled ($pr = .20$, $p < .05$).

Table 9 presents partial correlations between independent variables (discrete social-cognition) and the dependent variables, controlling for age. Two of the five associations that were significant in the zero-order correlations (see Table 6) were no longer significant controlling for age: the association between strategy sophistication and prosocial behavior ($pr = .14$, ns), and the association between encoding of social cues and withdrawn behavior ($pr = -.08$, ns).

Table 10 presents partial correlations between the independent variables (emotion regulation and representations of relationships) and the dependent variables controlling for raw PPVT scores. All but 1 of the 12

associations that were significant in the zero-order correlations (see Table 5) remained so when raw PPVT scores were controlled: the association between

Table 8

Partial correlations among independent variables and dependent variables, controlling for child age.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Emotion Regulation				
Teacher-rated emotional control	.09 (70)	.39* (72)	.49* (72)	-.54* (72)
Teacher-rated soothability	.23* (70)	.58* (72)	.01 (72)	-.34* (72)
Mother-rated emotion regulation	.23* (61)	.20* (63)	-.14 (63)	-.17+ (63)
Representations of Relationships				
Peer affiliation	.03 (70)	.18+ (72)	-.16+ (72)	.00 (72)
Beliefs about self/peers	.09 (61)	-.12 (63)	-.27* (63)	.09 (63)

note: The n for each analysis is presented in parenthesis.

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

Table 9

Partial correlations among proposed mediating variables and dependent variables, controlling for child age.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Encoding of social cues	.24* (70)	.04 (72)	-.08 (72)	.10 (72)
Hostile attributions	.07 (70)	-.02 (72)	-.02 (72)	.12 (72)
Spontaneous attributions	.13 (70)	.04 (72)	-.09 (72)	.05 (72)
Strategy sophistication	.13 (66)	.14 (68)	-.22* (68)	.05 (68)
Strategy withdrawal	-.15 (66)	-.03 (68)	.28* (68)	.09 (68)
Strategy aggression	.09 (66)	-.01 (68)	-.07 (68)	-.02 (68)

Note: The n for each analysis is presented in parenthesis.

* = $p < .05$

teacher-rated prosocial behavior and the beliefs about self and peers measure dropped to a marginally significant .15 (p < .10).

Table 11 displays partial correlations among the proposed mediating variables (discrete social-cogntion) and the dependent variables, controlling for raw PPVT scores. Of the five significant associations obtained in the zero-order correlations, one was no longer significant when raw PPVT scores were controlled: The association between strategy sophistication and teacher-rated prosocial behavior was no longer significant when controlling for raw PPVT scores (pr = .13, ns). Although none of the zero-order correlations between teacher-rated aggressive behavior and the discrete social-cognition variables were significant, three of these associations were marginally significant when controlling for raw PPVT scores: encoding of social cues (r = .18, p = .07), hostile attributions (r = .15, p = .10), and strategy sophistication (r = .20, p = .06).

Measures of Discrete Social-cognition as Independent Predictors of Measures of Social Behavior

Analyses were conducted to determine if measures of discrete social-cognitions made independent contributions to the prediction of measures of social behavior. First, significant associations between measures of discrete social-cognition and each of the measures of social behavior were identified (see Table 6). Of the four measures of social behavior, three were not significantly associated with two or more measures of discrete social-cognition Teacher-rated

peer competence was significantly associated only with encoding of social cues. Teacher-rated prosocial behavior was significantly correlated with the

Table 10

Partial correlations among independent variables and dependent variables, controlling for raw PPVT scores.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Emotion Regulation				
Teacher-rated emotional control	.11 (60)	.40* (60)	.48* (60)	-.57* (60)
Teacher-rated soothability	.22* (60)	.57* (60)	.02 (60)	-.35* (60)
Mother-rated emotion regulation	.25* (60)	.25* (60)	-.14 (60)	-.23* (60)
Representations of Relationships				
Peer affiliation	-.00 (61)	.15+ (61)	-.15+ (61)	.06 (61)
Beliefs about self/peers	.09 (60)	-.12 (60)	-.27* (60)	.08 (60)

Note: The n for each analysis is presented in parenthesis.

** = p < .05; + = p < .10*

Table 11

Partial correlations among proposed mediating variables and dependent variables, controlling for raw PPVT scores.

	Teacher-rated Peer Competence	Teacher-rated Prosocial Behavior	Teacher-rated Withdrawn Behavior	Teacher-rated Aggressive Behavior
Encoding of social cues	.22* (63)	.09 (63)	-.37* (63)	.18+ (63)
Hostile attributions	.10 (63)	.06 (63)	-.09 (63)	.15+ (63)
Spontaneous attributions	.13 (63)	.05 (63)	-.10 (63)	.08 (63)
Strategy sophistication	.09 (60)	.13 (60)	-.26* (60)	.20+ (60)
Strategy withdrawal	-.12 (60)	-.01 (60)	.30* (60)	-.01 (60)
Strategy aggression	.11 (60)	.02 (60)	-.08 (60)	-.04 (60)

Note: The n for each analysis is presented in parenthesis.

* = $p < .05$

sophistication rating of social strategies, but was not significantly associated with any other measure of discrete social-cognition. There were no significant correlations between teacher-rated aggression and any measure of discrete social-cognition measure. Because neither aggression, competence, nor prosocial ratings were significantly associated with multiple indices of discrete social-cognition, no analyses were conducted to determine if measures of discrete social-cognition account for unique variance in these outcomes.

For teacher-rated withdrawn behavior, however, there were significant associations with three measures of discrete social-cognition: encoding of social cues, sophistication ratings of social strategies, and withdrawn ratings of social strategies (see Table 6). To test the relative utility of these three measures of discrete social-cognitions in predicting teacher-rated withdrawn behavior, a regression equation was computed in which encoding of social cues, social strategy sophistication, and social strategy withdrawal were simultaneously regressed on teacher-rated withdrawn behavior. As seen in Table 12, the three discrete social-cognitive measures entered as a block account for a significant 19% of the variance in teacher-rated withdrawn behaviors. However, an examination of the betas for the three social-cognitive measures reveals that none of the betas for the three measures reached statistical significance (standardized β s = - .16, - .17 and .23 for encoding of social cues, social strategy sophistication, and social strategy withdrawal, respectively).

Table 12

Measures of discrete social-cognition as independent predictors of measures of social behavior.

Behavior (DV)	Step	Variables entered on step	R^2	β	p
Withdrawn	1	Encoding of Social Cues	.19*	-.16	.21
	1	Strategy Sophistication		-.17	.21
	1	Stragy Withdrawal		.23	.10

note: * = p < .01

Thus, although these three discrete social-cognitive measures as a group account for a significant portion of the variance in teacher-rated withdrawn behavior, none independently accounts for a significant portion of the variance in teacher-rated withdrawn behavior when the other two are controlled. Encoding of social cues, social strategy sophistication, and social strategy withdrawal share 8.3% of the variance in teacher-rated withdrawn behavior.

Social-cognitive Variables as Mediators of Associations Between Independent and Dependent Variables.

Barron and Kenney (1986) outline three conditions that must be fulfilled to conclude that a variable functions as a mediator. The first condition is that the independent variable must be significantly associated with the proposed mediating variable. As shown in Table 4, there was only one significant association among the measures of emotion regulation and the measures of discrete social-cognition: teacher-rated soothability was significantly and negatively associated with encoding of social cues. Because the only association between the proposed mediators and emotion regulation was not in the hypothesized direction, no further analyses to test for mediation were conducted with the emotion regulation variables. Turning to the measures of representations of self and peers, significant associations were found between peer affiliation and two discrete social-cognitive measures: strategy sophistication and strategy withdrawal. Feelings and beliefs about self and others, on the other hand, was not associated with any of the measures of discrete social-cognition, and so was

not included in any further tests of mediation. Thus, only one independent variable -- peer affiliation -- and two proposed mediating variables -- strategy sophistication and strategy withdrawal -- met the first condition necessary for testing mediation.

The second condition that Baron and Kenny (1986) note as necessary for mediation is that the mediating variable must be significantly associated with the dependent variable. Among the two proposed mediating variables that met the first criteria for mediation, significant associations were found between strategy sophistication and teacher-rated prosocial behavior, between strategy sophistication and teacher-rated withdrawn behavior, and between strategy withdrawal and teacher-rated withdrawn behavior.

The third condition necessary for mediation identified by Baron and Kenny (1986) is that when the association between the mediating variable and the dependent variable is controlled, a previously significant association between the independent variable and the dependent variable is no longer significant. Implicit in the third criteria is that the independent variable be significantly related to the dependent variable when the mediator is not controlled. Peer affiliation was significantly associated with teacher-rated prosocial behavior and with teacher-rated withdrawn behavior. Thus, as shown in Figure 3, three potential paths that met the criteria necessary to test for mediation were identified.

Results from a series of hierarchical regressions testing these three potential mediation paths are reported in Table 13. For each of the potential

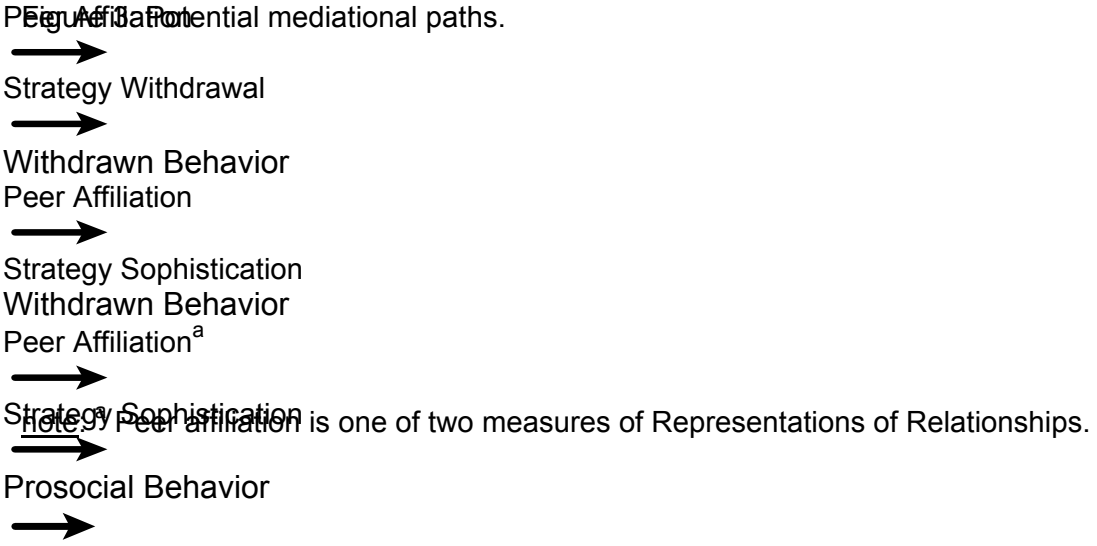
paths, results from two separate regressions are reported. Because the n s varied for each of the variables, listwise deletion of cases missing either the

independent, mediating, or dependent variables was used in each step of the regressions reported in Table 13. For each of the potential mediating paths, the independent variable was first regressed on the dependent variable without the mediating variable in the equation. A second hierarchical regression, in which the mediating variable was entered on the first step, and the independent variable was entered on the second step, was conducted for each of the potential paths.

The first potential mediational path is that strategy sophistication mediates the association between peer affiliation and teacher-rated prosocial behavior. Data for the three variables were available for 66 participants. Among these participants, peer affiliation accounted for 3.4% (ns) of the variance in prosocial behavior. In a regression equation controlling for strategy sophistication, peer affiliation accounted for only 1.0% of the variance in prosocial behavior, a reduction of 70.6%. Sobel=s (1982) method was used to provide an approximate significance test of the indirect effect of peer affiliation on prosocial behavior via the mediating variable, strategy sophistication. The t-value of the test for the significance of this indirect effect was a non-significant 1.29. The second potential mediational path was that sophistication ratings of social strategies mediate the association between peer affiliation and teacher-rated withdrawn behavior. Complete data for these three variables were available for 67 participants. Among these participants, peer affiliation accounted for 3.9% of the variance in prosocial behavior. A regression equation controlling for strategy

sophistication was computed, and the amount of variance in withdrawn behavior accounted for by peer affiliation was reduced to 0.7%, a reduction of 82.1%.

Figure 3. Potential mediational paths.



Note. [a] Peer affiliation is one of two measures of Representations of Relationships.

Table 13

Discrete social-cognitive variables as mediators of the association between peer affiliation and social behavior.

Behavior (DV)	Step	Variables entered on step	ΔR^2	β	p
Prosocial[a]	1	Peer Affiliation	.034	.008	.14
Prosocial[a]	1	Strategy Sophistication	.062	.25	.04
	2	Peer Affiliation	.010	.005	.40
Withdrawn[b]	1	Peer Affiliation	.039	.008	.11
Withdrawn[b]	1	Strategy Sophistication	.111	-.529	.01
	2	Peer Affiliation	.007	.004	.48
Withdrawn[b]	1	Peer Affiliation	.039	.008	.11
Withdrawn[b]	1	Strategy Withdrawal	.123	1.41	.01
	2	Peer Affiliation	.006	.003	.52

note: [a] n = 66; [b] n = 67

Using Sobel=s (1982) equation, the t-value for the test of the indirect effect of peer affiliation on withdrawn behavior via strategy sophistication was a non-significant 1.23.

The final potential mediating path to be tested was that withdrawal ratings of social strategies mediate the association between peer affiliation and teacher-rated withdrawn behavior. Complete data for these three variables were available for 67 participants. Among these participants, peer affiliation accounted for 3.9% of the variance in prosocial behavior. A regression equation controlling for strategy withdrawal was computed, and the amount of variance in withdrawn behavior accounted for by peer affiliation was reduced to 0.6%, a reduction of 84.6%. Sobel=s (1982) equation yielded a t-value of 2.89 ($p < .05$) for the indirect effect of peer affiliation on withdrawn behavior via strategy withdrawal.

Emotion Regulation as Moderator of Associations Between Social-Cognitive Variables and Measures of Aggressive Behavior

Because of recent interest in emotion regulation as a potential moderator of associations between discrete social-cognitions and children=s social behavior, a post-hoc hypothesis, in which emotion regulation moderated associations between aggressive social strategies and aggressive behavior and moderated associations between hostile attributions and aggressive behavior, was tested. Only the mother-rated emotion regulation measure was included in these analyses, because teachers completed the other two ratings of emotion regulation as well as the measure of aggressive behavior. Thus, it is likely that

the teacher-rated emotion regulation measures and the teacher-rated aggression measure share considerable method variance, and the high zero-order correlations (r s -.54 and -.34 between teacher-rated aggression and teacher-rated emotional control and soothability, respectively, both p < .01) suggest that this may be the case. Because of the relatively high degree of variance shared between the two teacher-rated emotion regulation measures and the teacher-rated aggressive behavior measure it would be difficult to obtain significant results for an interaction term (Aiken & West, 1991), and these analyses were not conducted.

In order to test the hypothesis that emotion regulation moderates associations between aggressive strategies and aggressive behavior, a hierarchical regression predicting teacher-rated aggressive behavior was computed. The variables were first centered. On the first step of the regression mother-rated emotion regulation and hostile attributions were entered. On the second step, the multiplicative interaction term between mother-rated emotion regulation and hostile attributions was entered. The same procedure was used to compute two additional hierarchical regressions predicting aggressive behavior. In the second regression equation, spontaneous attributions and mother-rated emotion regulation were entered on the first step, followed by the multiplicative interaction of the two variables on the second step. In the final regression equation, strategy aggression and mother-rated emotion regulation were entered on the first step and the interaction term was entered on the second step. As

shown in Table 14, there was a significant interaction term between parent-rated emotion regulation and hostile attributions, but the interaction terms for spontaneous attributions and strategy aggression were not significant.

Analyses guided by the recommendations of Aiken and West (1991) were then conducted to clarify the nature of the interaction between mother-rated emotion regulation and hostile attributions. Aggressive behavior was predicted from hostile attributions with the value of emotion regulation fixed at low (one standard deviation below the mean), medium (the mean), and high (one standard deviation above the mean). As the fixed level of emotion regulation increased, the slope of the relationship between hostile attributions and aggressive behavior varied from β = .497 (standardized beta for low emotion regulation) to β = .288 (standardized beta for mean emotion regulation) to β = .079 (standardized beta for high emotion regulation) (see Figure 4). To further clarify the nature of this interaction, the sample was split into three approximately equal groups based upon the value of mother-rated emotion regulation: low, moderate, and high. For the group rated highest in emotion regulation by mothers, the association between hostile attributions and teacher-rated aggressive behavior was non-significant (r = .12, ns). For the group rated as moderate in emotion regulation by mothers, there was a negative, but non-significant association between hostile attributions and teacher-rated aggressive behavior (r = -.12, ns). For the group rated lowest in emotion regulation by mothers (i.e., poor emotion regulators), the association between hostile attributions and teacher-rated aggressive behavior

was significant and positive (r = .43, p < .05). Thus, there was no association between hostile attributions

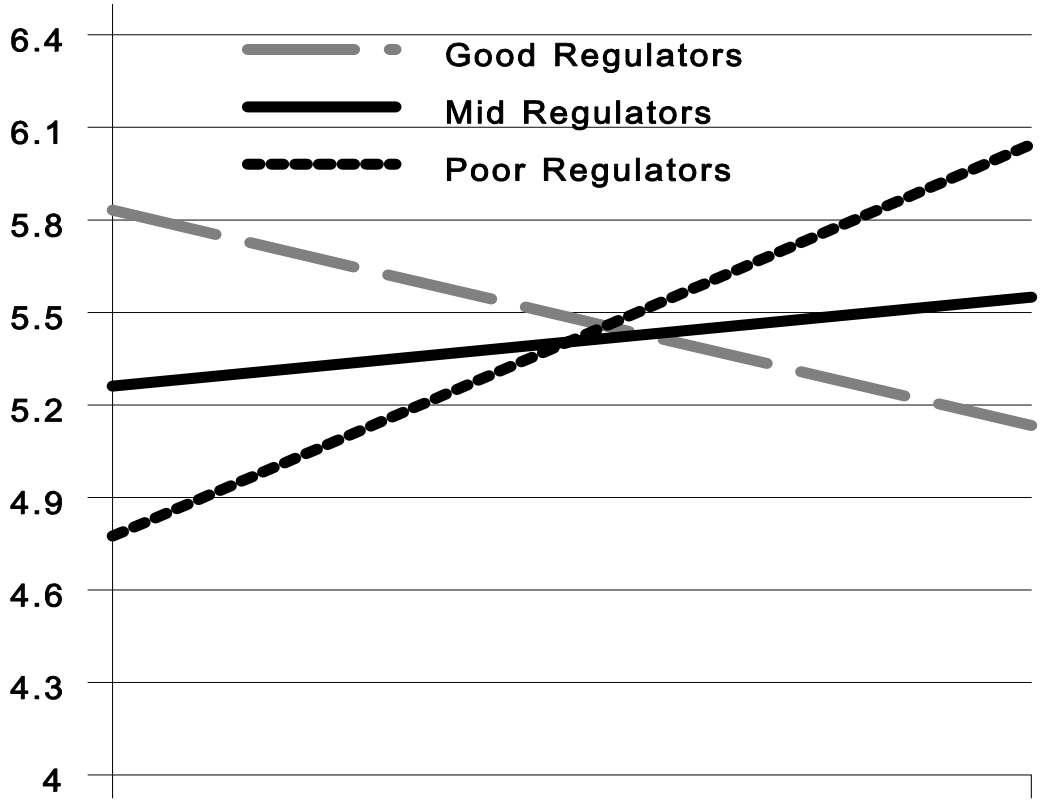
Table 14

Emotion regulation as moderator of association between hostile attributions and aggressive behavior.

Behavior (DV)	Step	Variables entered on step	Δ R^2	β^a	p
Aggression	1	Emotion Regulation		-.270	.03
	1	Hostile Attributions	.06	.095	.44
	2	Interaction Term	.07*	-.271	.03
Aggression	1	Emotion Regulation		-.195	.15
	1	Spontaneous Attributions	. 04	-.021	.87
	2	Interaction Term	.00	-.047	.72
Aggression	1	Emotion Regulation		-.194	.21
	1	Strategy Aggression	.07	.055	.67
	2	Interaction Term	.01	-.110	.48

notes: [a] standardized betas are reported; * = p < .05

Figure 4: Associations between hostile attributions and aggressive behavior for



poor, median, and good emotion regulators.

and aggressive behavior for children rated as highly or moderately skilled emotion regulators, whereas the hostile attributions measure was significantly associated with aggressive behavior for children rated as poor emotion regulators.

DISCUSSION

The current work provides evidence that preschool children=s cognitive representations of themselves and peers, and their ability to regulate emotions, are associated with their social behavior with peers. Consistent with prior research, the data also support links between preschool children=s social behavior and the accuracy with which they encode social cues, and with the quality of the strategies they are able to generate. Patterns of association between the discrete social cognitions and aspects of social behavior were less pervasive than has been the case in many previous studies, however. Evidence was found that social strategies mediated the associations between one measure of cognitive representations of relationships -- peer affiliation -- and withdrawn and prosocial behaviors. However, not all proposed mediational paths were supported, and support for paths that were not proposed was found. Additionally, evidence was found that emotion regulation moderates the link between discrete social cognition and social behavior, in that hostile attributions were linked to aggressive behavior only for children who were poor regulators.

This discussion is broken into three main sections. The first section discusses associations between measures of discrete social cognitions (i.e., encoding of social cues, hostile attributions, and social strategy generation) and

social behavior. The second section focuses on associations between representations of relationships and social behavior, between representations of relationships and discrete social cognitions, and mediational models pertaining to representations of relationships. The third section examines links between emotion regulation and both social behavior and discrete social-cognitive processes, and mediational and moderational models that include emotion regulation.

Discrete Social Cognitions and Social Behavior

Three discrete social-cognitive processes -- encoding of social cues, hostile attributions, and social strategy generation -- were central to the current investigation. It was hypothesized that measures of discrete social cognitions would be associated with measures of young children=s social behavior, that these associations would remain significant when children=s general verbal ability was controlled, and that all of the measures would make unique contributions to the prediction of social behavior. Findings from the current work provide limited support for the first two of these hypotheses: consistent with prior research (Dodge et al., 1986; Meece et al., 1995; Mize & Ladd, 1988; Pettit et al., 1988; Putallaz, 1983), skill at encoding social cues was associated with peer competence and withdrawn behavior, and young children=s social strategy generation was associated with prosocial and withdrawn behavior. However, contrary to past findings (Dodge et al., 1990; Meece, 1994; Weiss et al., 1992), no significant associations were found between hostile attributions and any of the

measures of social behavior. The following paragraphs summarize the pattern of associations between social behavior and each of the discrete social-cognitive processes (encoding social cues, hostile attributions, and social strategy generation) assessed in the current investigation.

Encoding of social cues. Young children who were more skilled at encoding social cues were rated significantly higher in peer competence by teachers. This association remained significant when age or PPVT scores were controlled, unlike findings reported by Meece et al. (1995), who found that the significant association between encoding of social cues and teacher-rated peer competence was no longer significant when controlling for PPVT scores. Although the PPVT measures only children=s receptive vocabulary, these findings are consistent with results from several other studies (Dodge et al., 1984; Gouze, 1987; Putallaz, 1983) that reported that links between encoding of cues and social behavior remained significant when measures of verbal ability or general intelligence were controlled. In addition, greater accuracy at encoding social cues also was associated with less withdrawn behavior. The association between encoding of social cues and withdrawn behavior remained significant when PPVT scores were controlled, but not when age was controlled.

The link between encoding social cues and competent, less withdrawn social behavior is consistent with Putallaz=s (1983) finding that children who more accurately perceived the cues of others were more adept at fitting into on-going group interaction through relevant conversation, and with Dodge et al.=s

(1986) finding that the accuracy of encoding social cues was associated with higher ratings of success and competence in a group-entry situation. However, children who more accurately encoded social cues were not seen as more prosocial by teachers. The primary focus of the peer competence rating used in this study is Asuccessful@ and competent peer behaviors, and includes items such as Aother children seek this child out for play,@ Athis child is accepted by the peer group,@ and Athis child gets along well with peers.@ The prosocial behavior rating used in this study, which was derived from the PSAP, includes items related to helpful, friendly, or Anice@ behavior, such as Acooperates with other children,@ Acomforts or assists another child in difficulty,@ and Atakes other children and their points of view into account.@ The correlation between the prosocial and competent rating scales is a statistically significant .52. When one considers that some portion of the 27% of variance that these two scales share is attributable to the method, the moderate correlation points to the conclusion that teachers are able to distinguish between prosocial and competent behaviors. Although prosocial behavior may be competent in many contexts, it is not always so. In fact, past researchers have not always found significant associations between indices of prosocial behavior and measures of socially competent and appropriate behavior (e.g., Marcus & Jenny, 1977; Stockdale, Hegland, & Chiaromonte, 1989).

As suggested by Putallaz (1983), it may be that children who are more skilled at attending to and encoding the social cues of peers are better able to

understand the characteristics of a social situation, and so are better able to Afit@ the demands of a given social context by displaying relevant and appropriate conversation and behavior. Although skill at encoding social cues may enable children to be more successful or competent in social behaviors, encoding may not necessarily be linked with social behavior that would be described as Anice,@ helpful, or prosocial. Aspects of prosocial behavior reflect cultural standards, which vary in different societies (e.g., Mead, 1935). Eisenberg and Fabes (1998) point out that, within a given culture, familial socialization provides both direct (e.g., disciplinary practices, warmth and support, modeling, coaching, and reinforcement of prosocial behaviors) and indirect (SES and family structure) influences upon prosocial behavior.

In rating prosocial behavior, teachers may be tuned in to the sorts of behaviors (such as sharing and good manners) in which some parents directly instruct their preschool children (Israel & Raskin, 1979). Israel and Raskin (1979) found that the effects of direct parental instructions of prosocial behavior persist as long as four weeks. Perhaps, for young children, aspects of direct socialization, such as parental instructions, may have a more powerful influence on behavior described by teachers as prosocial than does children=s ability to attend to and encode aspects of a given social situation. In fact, Denham, Mason, and Couchoud (1995) suggest that direct parental requests for prosocial behavior are particularly important for young children because of their limited ability to understand others= emotions and situational cues. This idea is not

consistent, however, with Eisenberg and Fabes= (1998) model of prosocial behavior, which posits that parental socialization influences children=s interpretation of, and attention to, social situations, which in turn influences children=s prosocial behavior through a sequence of social-cognitive steps including the identification and evaluation of social strategies and evaluation of personal goals. Like most information-processing-theory-based models, Eisenberg and Fabes= (1998) heuristic does not include a developmental component, and so it is possible that the link between encoding of social cues and prosocial behavior described in the model does not apply to preschool-age children.

Unlike findings reported by Weiss et al. (1992) and Dodge et al. (1990), children who were less skilled at encoding social cues were not more aggressive than were children who were more skilled at encoding cues. The disparity in the findings between the current work and those reported by Dodge et al. (1990) and Weiss et al. (1992) is surprising considering that the coding system used in the current work to measure encoding was adapted from that used by Dodge, Weiss, and their colleagues (1990, 1992). However, the Dodge et al. (1990) and Weiss et al. (1992) studies include ratings of aggressive behavior made by teachers, parents, peers, and trained observers. Weiss et al. (1992) report a significant zero-order correlation between encoding of social cues and aggressive behavior only for the observer ratings of aggression. It is noteworthy that the zero-order correlations reported by Weiss et al. (1992) between encoding of social cues and

teacher-rated aggressive behavior from the Teachers= Checklist of Peer Relations (TCPR, i.e., the measure used in the current investigation) were not significant.

Although Weiss et al. (1992) did not report descriptive data, a re-analyses by the author of the data employed in that study reveals that the distribution of teacher-rated aggression was remarkably similar in the two studies. In the current sample, the mean teacher rating of aggression was 1.8 (on a 5-point scale), with a standard deviation of 0.8. In the Weiss et al. (1992) study, the mean teacher rating of aggressive behavior also was 1.8 (also a 5-point scale), and the standard deviation was 0.8. Thus, in both the Weiss et al. (1992) study and the current work, teachers rated children relatively low in aggressive behavior, with little variance. In contrast, Dodge et al. (1990) report a significant association between encoding of social cues and children=s aggressive behavior as rated by teachers on the Teacher Report Form of the Child Behavior Checklist (TRF) (Dodge et al. (1990) do not report results from the TCPR). Scores on the aggression scale of the TRF ranged from 0 to 39, with a mean of 4.8 and a standard deviation of 7.4. Thus, there was more variance in the aggression scores from the TRF in the Dodge et al. (1990) and Weiss et al. (1992) studies than from scores on the TCPR in the current work or in the Weiss et al. (1992) paper. It is possible that the limited range in scores from the aggression scale of the TCPR may at least partially account for the null findings between social cue encoding and aggression in the current work and the Weiss et al. (1993) study.

There also are other differences between the current work and the data reported in the Dodge et al. (1990) study and the Weiss et al. (1992) study. The current study includes 4-year-old children as well as kindergartners, whereas the Weiss et al. (1992) study included only kindergartners. Also, different stimulus video tapes were used in the two studies, and it is possible that subtle, unintentional differences in the actors= displays of emotions or behavior could result in variations in the types of cues available for participants to attend to. It is impossible to say if the non-significant association between encoding of social cues and aggressive behavior in the current work is a function of the measure used to assess aggressive behavior, differences in the videotaped vignettes used to assess encoding of cues, characteristics of the samples of children, or if the significant associations reported by Dodge and Weiss were anomalous.

Hostile attributions. The second discrete social-cognitive process, hostile attributions, has been linked to aggressive behavior among older children in several studies (Dodge, 1980; Dodge & Frame, 1982; Feldman & Dodge, 1987; Gouze, 1987; Steinberg & Dodge, 1983), but the findings have been more inconsistent in studies of preschoolers and kindergartners. Among preschool- and kindergarten-age children, significant associations between hostile attributions and social behavior have been obtained by Dodge et al. (1990), Weiss et al. (1992), and Meece (1994), but not by Pettit and his colleages (1988). In the current work, no significant association was found between children=s hostile attributions and ratings of aggressive behavior. In fact, children=s hostile

attributions were not associated with any measure of social behavior included in the current study. Because the current work, as well as studies conducted by Dodge et al. (1990), Weiss et al. (1992), Meece (1994), and Pettit and his colleages (1988) have used much the same method of assessing the hostile attributions of young children (e.g., presenting children with a hypothetical dilemma and asking them the intentions of the provocateur), it is unclear why results have been so inconsistent.

A close examination of studies that have found significant associations between hostile attributions and social behavior, however, reveals that even the results of this set of studies are somewhat equivocal. Specifically, the Dodge et al. (1990) study and the Weiss et al. (1992) study, both of which report data obtained from the same sample, include a number of indices of aggressive behavior: ratings made by teachers, peers, parents, and observers. Results published in the Dodge et al. (1990) are based upon findings from the first of two cohorts included in the Weiss et al. (1992) study. Dodge et al. (1990) report that children=s hostile attributions were significantly associated with aggressive behavior as rated by observers, but was not associated with aggressive behavior as reported by the other informants. In the Weiss et al. (1992) study, zero-order correlations are broken down into two cohorts of participants. In the first cohort, hostile attributions were significantly associated with aggressive behavior as rated by observers, but not as rated by teachers, parents, or peers. In the second cohort, hostile attributions were significantly associated with aggressive behavior

as rated by teachers, but not as rated by observers, parents, or peers. Finally, Meece (1994) reports that hostile attributions were significantly associated with teacher-ratings of competent behavior (the only index of social behavior included in that study), but even this finding is not straghtforward.

Meece (1994) collected two measures of hostile attributions in the same manner as in the current work: spontaneous attributions in response to videotaped stimuli, and forced-choice answers to questions concerning the intentions portrayed in the videotapes. Although neither of the two measures was significantly associated with teacher-rated peer competence, Meece (1994) reports significant associations between a composite of the two measures of hostile attributions and teacher-rated peer competence. However, because the two measures of hostile attributions were not significantly correlated with each other, it is possible that Meece (1994) capitalized on chance in reporting the significant association between the composite measure of hostile attributions and teacher-rated peer competence. The discrepancy in findings among the current work, the Dodge et al. (1990), the Meece (1994), the Pettit et al. (1988), and the Weiss et al. (1992) studies suggests that, at least for younger children, associations between hostile attributions and aggressive behavior may be complex and ephemeral. That is, among preschoolers associations between hostile attributions and aggressive behavior may be contingent on other factors (see Mize et al., in press). Post-hoc exploration of one potential moderator of this association is discussed later in this section.

Social strategy generation. Prior research also has documented links between social strategy generation, the third discrete social-cognitive process investigated in the current study, and children=s social behavior. In the current work, children who suggested more sophisticated, relevant social strategies specific to the demands of the social context were significantly more prosocial, as rated by teachers, than were children who generated less sophisticated strategies. However, the association between sophisticated social strategies and prosocial behavior was not significant when either child age or PPVT scores were controlled. It is likely that children who were more verbally skilled provided richer, more descriptive, and elaborate social strategies, which coders may have viewed as more sophisticated. In an earlier study, Meece et al. (1995) computed a composite measure of social strategy generation that included sophistication, aggression, and assertiveness (i.e., the inverse of withdrawal) ratings. The significant association between measure of social strategy generation and teacher-rated peer competence remained significant when PPVT scores were controlled. In the current investigation, the sophistication of social strategies was more strongly associated with PPVT scores than were the other two ratings of social strategy generation. Together, the findings from the current work and the Meece et al. (1995) study suggest that the sophistication rating scale may be particularly susceptible to being confounded by children=s receptive vocabulary.

Children who generated more sophisticated, relevant social strategies were viewed by teachers as displaying less withdrawn behavior, even when age

and receptive vocabulary were controlled. Perhaps children who display more withdrawing behavior are not able to generate sophisticated social strategies regardless of age or receptive vocabulary, because they have less experience in social interactions. It might be that children with limited social interaction experience are not sure what to do in peer interaction contexts, whereas children who have a minimum or more of social interaction experiences have acquired more circumspect social strategies. For children with more peer interaction experience, variations in social strategy sophistication may be a function of verbal skills or maturation. This is just speculation, however, as the design of the current study does not allow for addressing this issue. Further, teachers did not view children who generated more sophisticated and elaborate social strategies as more competent with their peers than children who generated less sophisticated strategies. Thus, there was only limited replication of past studies (e.g., Pettit et al., 1988) that have found significant associations between ratings of the relevance and sophistication of social strategies and indices of social competence. Future researchers may wish to utilize longitudinal designs to investigate the possible impact that children=s peer interactions may make on their subsequent social strategy generation.

As expected, the withdrawn ratings of children=s social strategies were significantly and positively associated with teacher-rated withdrawn behavior, even when child age and PPVT scores were controlled. However, the withdrawn ratings of social strategies were not associated with teacher-rated competent,

prosocial, or aggressive behavior. The current work is unique in coding children=s social strategies for the presence or absence of withdrawn behavior. Other studies have used more multidimensional coding schemes to capture withdrawn behavior. For instance, Mize and Ladd (1988) coded the Aassertiveness@ of children=s social strategies. The scale for assertiveness was anchored at the high end by active and dominant strategies that asserted one=s rights, and at the low end by withdrawing or passive strategies. Consistent with the current work, Mize and Ladd (1988) did not find significant associations between the assertiveness ratings and measures of children=s prosocial and aggressive behavior or with sociometric peer ratings. However, Mize and Ladd (1988) did not include measures of children=s withdrawn behavior.

Several studies have linked children=s generation of aggressive strategies in response to hypothetical social dilemmas with sociometric measures of social status or peer acceptance (Asher & Renshaw, 1981; Rubin et al., 1982; Pettit et al., 1988) and with teacher- and observer-rated prosocial and aggressive behavior (Mize & Ladd, 1988). Thus, it was surprising that, in the current investigation, no significant associations were obtained between the generation of aggressive strategies and teacher ratings of aggressive behavior. The rating scales used to code the children=s social strategies, especially the aggression scale, may not have been sensitive enough to capture meaningful individual differences in children=s social strategy generation, and this may partially explain the null results. Previous researchers, such as Mize and Ladd (1988) coded the

aggressiveness of children=s social strategies on a 5-point scale ranging from helpful and prosocial to aggressive or hostile. In the current work, children=s strategies were coded only as aggressive or non-aggressive, and so did not differentiate strategies that are actively helpful and friendly as past researchers have done. Because aggressive behavior is normative among preschoolers (Cairns, 1979), the results from previous studies in which prosocial strategies anchor the opposite end of a scale of aggressiveness may have depended on the positive end of the scales. Also, as mentioned previously, on average, teachers rated the children in this sample fairly low in aggressive behavior, and the limited range in aggression ratings limits power to obtain significant associations with this measure.

Measures of social cognition as independent predictors of social behavior. Due to the small number of significant associations between children=s discrete social cognitions and children=s social behavior, the hypothesis that multiple aspects of discrete social cognition make independent contributions to the prediction of social behavior could be tested only for withdrawn behavior. That is, withdrawn behavior was the only type of social behavior that was associated with more than one aspect of discrete social cognition. Findings suggest that, although encoding of social cues and sophistication and withdrawn ratings of social strategies together accounted for a significant proportion of the variance in ratings of withdrawn behavior, none of the three measures of discrete social cognition made a significant unique contribution to the prediction of withdrawn

behavior. Thus, findings from this study fail to replicate results by Dodge et al. (1986), Dodge and Price (1994), and Meece (1994), which suggested that measures of discrete social-cognitive processes uniquely contribute to the prediction of social outcomes. However, as mentioned in the literature review, a close examination of the results of the previous studies (Dodge et al., 1996; Dodge & Price, 1994; Meece, 1994) reveals that there is only modest evidence that discrete social-cognitive processes make independent contributions to the prediction of children=s social behavior.

Both the Dodge et al. (1986) and Dodge and Price (1994) studies used observer ratings of children=s behavior in specific social interaction contexts as outcome variables: Dodge et al. (1986) utilized observed success during an analog group entry attempt, and Dodge and Price (1994) employed observer ratings of first- through third-graders success during two specific social contexts, a group-entry situation and a peer-provocation situation. Meece (1994) included only a single index of children=s social behavior, teacher-rated peer competence from the TCPR. In all three previous studies, the unique contributions of measures of various discrete social cognitions were quite small. For instance, Meece (1994) reports that both social strategy generation and hostile attributions accounted for significant, unique portions of the variance in peer competence (12% each), whereas encoding of social cues did not. In the Dodge et al. (1986) study, of 11 social-cognitive variables, only one indicator of social strategy generation (the proportion of nonaggressive strategies) provided a significant,

unique contribution to the prediction of group-entry success. One additional variable, encoding social cues, provided a marginally significant contribution to the prediction of group entry behavior. In the Dodge and Price study, encoding of social cues provided a significant independent contribution to the prediction of group entry behavior, social strategy generation provided a marginally significant increment to the prediction, and hostile attributions did not add significantly to the prediction of group entry behavior. In predicting behavior in response to a peer provocation, social strategy generation provided a significant unique contribution, encoding of cues contributed a marginally significant contribution, and hostile attributions did not significantly add to the prediction. In sum, results from the current work and Dodge et al., (1986), Dodge and Price, (1994), and Meece (1994) offer less than compelling evidence that discrete social-information processing steps make independent contributions to social behavior.

Because Dodge (1996; Crick & Dodge, 1994) postulates that a comprehensive assessment of multiple aspects of discrete social-cognitive processes can yield a more powerful prediction of social behavior than assessment of any single aspect of discrete social-cognitive processing, many studies (e.g., Dodge et al., 1990; Weiss et al., 1993) have treated measures of different aspects of discrete social-information processing as a single Ablock@ or composite measure. Such a practice may be suited for researchers who seek an omnibus index of the adequacy of children=s overall pattern of social-information processing, as opposed to the assessment of specific aspects of social cognition.

Results of the current work and the three past studies that have examined the relative contribution of measures of discrete social-cognitive processes (Dodge et al., 1986; Dodge & Price, 1994; Meece 1994) are consistent with the omnibus formulation. For instance, Dodge and Price (1994) conclude that their results are consistent with the hypothesis that social-cognitive measures would provide unique increments to the prediction of behavior in that Athe multiple correlations between processing and behavior in each situation were found to be larger than any single bivariate correlation@ (p. 1394). However, results from the current work indicate that aspects of discrete social cognition are differentially associated with specific types of social behavior. This specificity suggests that researchers should assess aspects of social cognition tailored to the particular questions and outcome variables of interest to the researchers. Such an approach may yield clearer answers to questions of how cognitions guide behavior.

Cognitive Representations of Self and Peers

Associations between cognitive representations of self and peers and social behavior. Another goal of the current work was to develop or adapt measures of young children=s cognitive representations of self and peer relationships. Two measures were used, the Peer Affiliation Interview, which is a sorting procedure adapted from Evers-Pasquale and Sherman (1975) and used previously by the author (Meece, 1994), and the FAMP, which is a puppet interview using a procedure similar to the Berkley Puppet Interview (Ablow & Measelle, 1991; Ablow & Measelle, 1998). Consistent with findings reported by

Hymel et al. (1990), results indicated that children who selected more peer-oriented choices during the peer affiliation interview were viewed by teachers as displaying more prosocial and less withdrawn behavior than were children who selected more non-peer-oriented choices. Similarly, children who chose more positive descriptors of themselves and peers during the FAMP interview were rated by teachers as lower in withdrawn behavior than were children who chose more negative descriptors of themselves and peers. As hypothesized, neither of the measures of cognitive representations of relationships was associated with aggressive behavior. These findings fit well with past research among older children that has demonstrated that aggressive children do not differ from non-aggressive children in self-perceptions (Patterson et al., 1990), but that withdrawn children have more negative self-perceptions than do aggressive children (Hymel et al., 1993). Thus, although the two measures of representations of self and peers utilized in the current study were not associated with each other, each was associated with the outcome variables in meaningful ways consistent with prior research on older children.

Researchers (e.g., Harter, 1998, Harter & Pike, 1984) have expressed concern that young children tend to only state the most positive beliefs about the self, and so young children=s self-evaluations may be inaccurate and inflated (Harter, 1988). In the current work, scores from the FAMP were coded as positive only if the child selected the most positive response to the item, whereas all other choices (negative or in between) were coded as not positive. Even using

this scoring method, the mean score on the FAMP was still quite high (7.0, on a scale of 0 to 9). However, there was some variance in the scores, with an obtained number of most positive responses ranging from 3 to 9, and a standard deviation of 1.8. There also was variance in the peer affiliation scale, with a mean of 4.5, a standard deviation of 2.4, and a range of 0 to 10. Harter (1998) argues that, during the early childhood period, children are not capable of communicating their self-perceptions. However, findings reported here, that young children=s cognitive representations of self and peers are associated with their social behavior, are consistent with studies of young children=s self-representations that have employed Cassidy=s puppet interview (e.g., Cassidy, 1988; Cassidy, 1999; Vershuren et al., 1996) and that conclude that young children can meaningfully communicate their perceptions of the self in relation to others.

Hymel et al. (1993) interpret the association between negative self-perceptions and withdrawn behavior in terms of the accuracy of self-perception. In this view, withdrawn children are more accurate in their self-perceptions, in that their peers see them more negatively than the peers see average and popular classmates. An alternative explanation for the negative association between representations of self and peers and withdrawn behavior obtained in the current work is that children who view themselves positively, and who view peers as fun or friendly, are likely to seek out and engage in peer interaction. Conversely, children who view themselves and peer interaction as basically

negative may isolate themselves from peers through shy, withdrawing, and reticent behavior. This interpretation is consistent with the view from Attachment Theory (Bowlby, 1969) that children=s internal working models of relationships as either positive and warm or negative and unpredictable influence their subsequent behavior with peers. However, the current study is correlational in design, and so inferences about causal relationships between children=s representations of self and peers and children=s social behavior cannot be made. To date, no longitudinal studies that could provide evidence of such a causal relationship have been conducted.

Associations between cognitive representations of self and peers and discrete social cognitions. Although children who chose more positive descriptors of themselves and peers during the FAMP procedure were viewed by teachers as displaying less withdrawn behavior with peers than were children who chose more negative descriptors of themselves and peers, the FAMP measure was not associated with any measure of children=s discrete social cognition. As such, there was no evidence that the discrete social-cognitive processes measured in this study mediated the association between the FAMP and children=s withdrawn behavior. Based on social-information processing theory (SIP, Crick & Dodge, 1994) and attachment theory (Bretherton, 1994), it was hypothesized that children=s feelings and beliefs about self and others would be associated with encoding of social cues and social strategy sophistication, and negatively with withdrawn social strategies. It is unclear if the non-significant associations

between the FAMP and discrete social cognitions stem from problems with the FAMP measure, are due to aspects of the sample, or are a reflection of faulty assumptions of SIP and attachment theory concerning associations between discrete social-cognitive processes and latent cognitive structures.

For the peer affiliation measure, however, there were significant associations with ratings of children=s social strategies and with children=s social behavior. Specifically, children who made more peer-oriented choices during the peer affiliation interview generated social strategies that were rated as significantly more sophisticated and significantly less withdrawn than did children who made more non-peer-oriented choices. This finding provides empirical support for SIP=s (Crick & Dodge, 1994) view that generalized mental representations of relationships influence children=s discrete social-cognitive processing within a given context. This finding is also consistent with attachment theory=s (Bowlby, 1969; Bretherton, 1994) postulation that internal working models of relationships guide or constrain children=s cognitions about social interaction.

Furthermore, as hypothesized in the current work, there was evidence that sophisticated social strategies mediated the link between peer affiliation and prosocial behavior. Both attachment theory (Bretherton, 1994) and SIP (Crick & Dodge, 1994) speculate not only that latent cognitive structures influence children=s discrete social-cognitive processing in a given social context, but also that the discrete cognitions, in turn, guide children=s behavior in that particular

social interaction. These findings support that notion, in that children with more positive views of peer relationships generated more sophisticated social strategies, and the generation of more sophisticated social strategies predicted more prosocial behavior. One explanation for this finding is that children who view peers, and themselves in relation to peers, more positively are more motivated to interact with peers and place a greater value on peer interaction than do children with more negative views of self and peers. Because of their greater interest in peers and desire to engage in peer interaction, such children may have developed a more sophisticated social strategy repertoire in order to meet their peer-oriented goals. On the other hand, children with more negative views of self and peers generated more withdrawn social strategies, and the generation of more withdrawn social strategies, in turn, predicted more withdrawn behavior. There also was evidence that children with more negative views of peer relationships generated less sophisticated social strategies, which also led to more withdrawn peer behavior. Although the negative peer view to less sophisticated social strategies to withdrawn social behavior pathway was not hypothesized in the current work, it is consistent with SIP(Crick & Dodge, 1994) and attachment theory (Bretherton, 1994) views that discrete social-cognitive mechanisms mediate associations between cognitive representations of relationships and social behavior.

Scores from the peer affiliation assessment were not associated with aggressive social strategies or hostile attributions. Although both SIP (Crick &

Dodge, 1994) and Attachment Theory (Bretherton, 1994) suggest that children=s latent cognitive structures should be associated with aggressive social strategies and hostile attributions, such a connection was not hypothesized in the current work because of the aspect of cognitive representations of relationships that was assessed. Specifically, the measures of cognitive representations of relationships employed in the current study focused on children=s views of relationships with peers as positive and fun experiences that they enjoy (e.g., Akids are fun@), or as negative and unpleasant experiences (e.g., Akids aren=t fun@). However, the two measures of this aspect of children=s cognitive representations of peer relationships, peer affiliation and the FAMP, were not significantly associated with each other, suggesting that the two measures may be tapping into different attributes of the peer-orientation aspect of children=s cognitive representations. Moreover, it is possible that there are other aspects of children=s latent cognitive structures, not studied in the current investigation, that would be associated with children=s aggressive strategy generation and tendency to make hostile attributions.

Dodge (1993) postulated that the hostile content of knowledge structures might be associated with children=s aggressive behavior, whereas self-failure aspects of knowledge structures might be associated with internalizing behavior. Recently, Burks, Laird, Dodge, Pettit, and Bates (1999) assessed aggression-related aspects of adolescents= (ninth graders) latent cognitive structures through the proportion of aggressive statements made during a sentence

completion task and the proportion of forced-choice hostile descriptors of various categories of people (e.g., Athe kids in my school are friendly / mean.@). Results from the Burks study indicate that both measures of the aggressive aspects of the children=s cognitive representations were associated with hostile attributions and the generation of aggressive social strategies. Although the format of the forced-choice procedure used in the Burks study is similar to the FAMP assessment, the current study did not focus on the hostile content of children=s latent cognitive structures. In fact, as noted in the method section, the three items from the FAMP that pertained to feelings of anger and hostility towards peers were not included in the composite used in the current work because they were not associated with the remainder of the items. It seems reasonable to hypothesize that the aggressive content of children=s cognitive representations of relationships may be associated with hostile attributions and aggressive social strategies for young children as well as for teenagers, and so future research should assess the aggressive content of children=s representations.

Contrary to expectations based on attachment theory and SIP (Bretherton, 1994; Crick & Dodge, 1994), peer affiliation was not associated with encoding social cues, suggesting that not all hypothesized facets of children=s discrete social cognition may be shaped or guided by children=s more global representations of the self and of peers. This finding is inconsistent with social-information processing theory (Crick & Dodge, 1994), which posits that latent cognitive structures are associated with each aspect of discrete social cognition.

This finding also is inconsistent with the views of theorists from the attachment perspective (Bretherton, 1995), who suggest that children=s internal working models of relationships influence how children attend to and interpret the social behavior of others. It also is possible that the aspect of representations of relationships studied in the current investigation is not the aspect that is most salient in predicting children=s encoding skill.

A second possibility is that there are at least two sources of variation in children=s skill at encoding social cues. The first might be general information processing skills, such as the ability to focus attention, short-term memory capacity, processing speed, and knowledge of strategies to aid memory (Flavel, Miller, & Miller, 1998). A second source for variation in children=s social cue encoding skill might be differences in representations of relationships, as theorized by Bretherton (1994) and Crick and Dodge (1994). For young children, individual differences in general social-cognitive abilities may be more responsible for variability in children=s ability to encode social cues than are the children=s cognitive representations of peer relationships. As children approach the asymptope of the cognitive processing skills necessary to encode social cues, perhaps differences in their feelings and beliefs about themselves and peers becomes more consequential to how they attend to and encode social information. Although this idea is just speculation, the significant association between encoding of social cues and children=s age obtained in the current work suggests that future research and theory is needed.

In addition to the current lack of clarity concerning developmental issues, current theory concerning associations between latent cognitive structures and discrete social cognitions is unclear. SIP (Crick & Dodge, 1994) provides what is, to date, perhaps the most detailed heuristic for understanding children=s discrete social-cognitive processing. Although SIP suggests that latent cognitive structures guide children=s on-line discrete social-cognitive processing (e.g., Crick & Dodge, 1994; Dodge, 1993), what is meant by latent cognitive structures is quite vague. Crick and Dodge (1994) borrow terms such as Aschema@ and Ainternal working models@ from other perspectives to describe latent cognitive structures is a general way, but only recently have researchers within this framework begun to explicate the nature of latent cognitive structures.

Borrowing from theorists in the social-cognitive psychology framework (e.g., Huesmann, 1988), Burks, Dodge, Price, and Laird (1999) describe three (and acknowledge that there may be more) characteristics of cognitive representations of peer relationships: quality, density, and appropriateness. Quality is the valence -- positive or negative -- of children=s social constructs, and is discussed in terms of accessibility (Bargh et al., 1988; Higgins, 1990). The term density is used to refer to the breadth, complexity, and fluency of cognitive representations, and appropriateness refers to the accessibility of construct categories that have the appropriate valence for a domain of peer behavior (e.g., accessing prosocial constructs in describing peers that are liked and accessing hostile constructs in describing peers that are not liked). Although Burks, Dodge,

Price, and Laird (1999) discuss quality, density, and appropriateness in terms of aggression and hostility aspects of cognitive representations, these characteristics also should pertain to peer-orientation (i.e., engaging vs. withdrawing) aspects of cognitive representations, such as assessed in the current work.

The pattern of findings from three recent studies are in accord with the suggestion made earlier in this discussion that there are multiple aspects of children=s latent cognitive structures, and that these may be associated with children=s discrete social-cognitive processing and social behavior in different ways. One aspect is peer-orientation, and the current work is the first to assess this aspect of children=s latent structures. Results indicate that this aspect of latent cognitive structures is associated with children=s prosocial and withdrawn behavior, and that these links are mediated by sophisticated and withdrawn social strategies. However, in the current work, the peer-orientation aspect of children=s latent cognitive structures was not associated with aggressive behavior or hostile attributions and the generation of aggressive strategies. Recent findings reported by Burks, Laird, Dodge, Pettit, and Bates (1999) indicate that hostile-aggressive aspects of latent structures are associated with teenagers= hostile attributions and aggressive social strategies. In a separate study, Burks, Dodge, Price, and Laird (1999) report that hostile-aggressive aspects of latent structures are associated with elementary-school-aged children externalizing behavior. To date, however, theorists have not delineated what

aspects (i.e., aggressive vs. non-aggressive, engaging or peer-oriented vs. withdrawing or non-peer-oriented) of cognitive representations may be associated with children=s discrete social-cognitions, or how these various aspects of cognitive representations may be differentially associated with aspects of children=s discrete-social cognition. Results from the two Burks studies and the current work suggest that children=s cognitive representations of relationships are multi-faceted, with at least a peer-orientation aspect that is associated with sophisticated and withdrawn social strategies as well as prosocial and withdrawn behavior, and an aggressive-hostile aspect, which is associated with hostile attributions and aggressive social strategies, as well as aggressive, externalizing behavior.

Associations between emotion regulation and social behavior. One limitation of the current work is that many of the measures, particularly measures of emotion regulation, were less than ideal. Thompson (1994) defines emotion regulation as the process of initiating, sustaining, modulating, or changing the occurrence, intensity, or duration of internal feeling states and emotion-related physiological processes. Eisenberg (1998) expands this definition by differentiating three types of regulation: regulation of emotion, regulation of emotion-related behavior, and regulation of the context itself. The first category in Eisenberg=s classification, emotion regulation, is based upon Thompson=s (1994) definition of emotion regulation pertaining to the regulation of internal and

physiological states. The second category, regulation of emotion-related behavior, refers to the facial, bodily, and behavioral expressions of experienced emotion. The measures of emotion regulation employed in the current, teacher-ratings on the CBQ and mother-ratings on the PCQ, were originally developed to index children=s temperment. However, items from the CBQ and PCQ have been employed in previous studies (e.g., Eisenberg et al., 1997; Eisenberg et al., 1999) as indicators of children=s behavioral emotion regulation. The items used in the current study from these measures (see Appendix D) seem to have face validity as indices of young children=s behavioral emotion regulation. It is important to point out though, that these ratings tap observers= impressions of the behavioral manifestations of a child=s emotional experience, not the child=s internal or physiological state. In other words, measures such as those included in the current work assess the type of regulation referred to by Eisenburg (1998) as regulation of emotion-related behavior, and not the internal and physiological aspects of emotion regulation as defined by Thompson (1994). Further, the items from the PCQ that mothers used to rate emotion regulation assessed only the intensity of children=s display of negative emotions (see Appendix D), and not children=s ability to sooth or calm themselves per se.

In the current work, there were many significant associations in the anticipated direction between measures of young children=s social behavior and measures of emotion regulation, and all of the associations that were originally significant remained significant when PPVT scores and child age were controlled.

These findings are consistent with prior research that has linked children=s emotion regulation with appropriate and competent social behavior (eg., Eisenberg et al. 1997; Fabes et al., 1999), shyness (Eisenberg et al., 1998) and aggression (eg., Gottman et al., 1996).

An examination of patterns of correlations among the teacher ratings of emotion regulation, mother-rated emotion regulation, and teacher ratings of social behavior suggests that the estimates of association between teacher ratings of emotion regulation and teacher ratings of social behavior may be inflated by method variance. Associations between the two teacher-rated measures of emotion regulation, emotional control and soothability, were higher (r = .41, p < .05) than were associations between teacher-rated emotion regulation and mother-rated emotion regulation (rs = .31, p < .05 between mother-rated emotion regulation and teacher-rated emotional control, and .01, ns, between mother-rated emotion regulation and teacher-rated soothability). All correlations between mother-rated emotion regulation and teacher ratings of social behavior (absolute value of rs ranged from .11 to .21) were of lesser magnitude (or were not in the expected direction) than were correlations between teacher-rated emotion regulation and teacher-ratings of social behavior (absolute value of rs ranged from .02 to .55; see Table 5). Six of eight associations between teacher-rated emotion regulation and teacher ratings of social behavior were significant, but only one of the four associations between parent-rated emotion regulation and teacher-rated social behavior was significant. Thus,

associations between teacher ratings of emotion regulation and teacher ratings of social behavior, though consistent with theory, should be interpreted with caution due to method variance.

Associations between emotion regulation and discrete social cognitions. The three ratings of emotion regulation were not significantly associated with any aspect of discrete social cognition, with the sole exception of the counter-intuitive negative association between teacher-rated soothability and children=s encoding of social cues. Because emotion regulation was not associated with any of the measures of discrete social cognition in the expected direction, none of the hypothesized mediational paths from emotion regulation were supported. Although associations between discrete social cognitions and emotion regulation have been theorized (Dodge, 1991; Thompson, 1994), this is the first study to explore these associations empirically. As such, it is unclear if the non-significant findings in the current study are a reflection of the current sample, the measures of emotion regulation used, or if it is the theory that is incorrect. As noted in the literature review, various techniques, including ratings of behavior in natural settings (e.g. Rubin et al., 1995), and physiological indices (e.g., Gottman et al., 1996; Zahn-Waxler et al., 1995) have been utilized in prior research to assess children=s emotion regulation. It remains for future researchers to examine associations between children=s discrete social cognitions and alternative operationalizations of children=s emotion regulation.

Emotion regulation as moderator of associations between measures of discrete social cognition and social behavior. Post-hoc analyses conducted with these data may provide some future directions for researchers, particularly those interested in the link between emotion regulation and young children=s aggressive behavior. The post-hoc hypothesis, that emotion regulation might moderate associations between discrete social cognition and ratings of aggressive behavior, is consistent with Thompson=s (1994) assertion that emotion regulation and discrete social cognition are mutually influencing. Mize, Pettit, and Meece (in press) suggest that aspects of social cognition, such as hostile attributions and aggressive social strategies, may not be strongly associated with measures of aggressive behavior for children who are very skilled at soothing themselves, or who don=t get very upset in the first place. On the other hand, for children who are less skilled at soothing themselves, generating aggressive strategies and making more hostile attributions might have a greater impact on their behavior with peers. For example, when faced with a provocation from a peer that is interpreted as hostile, children who are more likely to Afly off the handle@ may be more likely to respond aggressively than are children more skilled at calming themselves down, or who do not become upset by such provocation.

This hypothesis may be especially applicable to preschoolers because of the nature of aggressive behavior during this developmental period. Dodge and Coie (1987) differentiate between two types of aggression, proactive or

instrumental, which occurs in anticipation of self-serving outcomes, and reactive, which is a response to antecedent conditions such as goal blocking and provocation. Reactive aggression is primarily interpersonal, emotional, and hostile (Dodge & Coie, 1987). During the preschool years, instrumental aggression, which is aggressive behavior directed toward goals such as obtaining a toy, is very common (Cairns, 1979; Dodge, 1998). It is less common for young children to engage in aggressive behavior directed toward interpersonal goals, such as bullying or reactive aggression (Coie & Dodge, 1998). As such, the use of reactive aggression may be important in differentiating between preschoolers who display the typical sorts of instrumental aggression and children who behave with more hostility. Because reactive aggression is non-normative for preschoolers (as opposed to the more normative instrumental aggression over toys or materials), this type of behavior may account for some of the variance in ratings of young children=s aggression. That is, when rating preschool children=s aggressive behavior, teachers may be especially sensitive to reactive aggression because it is an unusual type of aggression for young children to display.

Results from the current study support the post-hoc hypothesis that associations between hostile attributions and aggressive behavior were moderated by emotion regulation. Results suggest that for young children rated by mothers as Agood@ emotion regulators -- in other words, children who were described by mothers as displaying less intense emotion -- there was no

significant association between hostile attributions and teacher-rated aggressive behavior. In contrast, for children rated by mothers as Apoor@ emotion regulators -- children described as displaying more intense negative emotions B making hostile attributions was significantly associated with teacher-rated aggressive behavior. However, associations between aggressive social strategies and aggressive behavior were not moderated by emotion regulation, which suggests the possibility that not all discrete social-cognitive processes interact with emotion regulation in predicting aggressive peer behavior.

The finding that the association between hostile attributions and aggressive behavior is moderated by emotion regulation may shed some light on the contradictory findings in the literature concerning associations between young children=s hostile attributions and aggressive behavior. As mentioned previously, some studies (Dodge et al., 1990; Meece, 1994; Weiss et al., 1992) have found significant associations between young children=s hostile attributions and aggressive behavior, whereas others have not (Pettit et al., 1988). Some authors (e.g., Pettit et al., 1988) have suggested that ecological characteristics may play a role in explaining non-significant associations between hostile attributions and aggressive behavior, and it is possible that ecological characteristics may interact with children=s emotion regulation in explaining links between hostile attributions and aggressive behavior. For instance, children from disadvantaged households who have been exposed to violence and abuse (such as those in the Pettit et al. 1988 sample) may have particular difficulties with

regulating their anger, and may have chronically accessible hostile attributions (Coie & Dodge, 1998). Such children may be particularly at risk for aggressive behavior due to the combination of poor emotion regulation skill and hostile attribution biases.

Moreover, the finding that associations between young children=s hostile attributions and aggressive behavior is moderated by emotion regulation suggests that emotion regulation skill may be a protective factor for children who are at increased risk for exhibiting aggressive behavior due to a heightened tendency to make hostile attributions. That is, current research has demonstrated that an increased tendency to make hostile attributions concerning ambiguous provocations is a risk factor for aggressive behavior (Dodge et al., 1990; Meece, 1994; Weiss et al., 1992), particularly among older children (see Crick & Dodge, 1994 for a review). However, skill at emotion regulation may buffer some children from this increased risk of aggressive behavior, in that children better able to calm themselves down may be able to preempt aggressive responses following hostile attributions. Further research examining emotion regulation as a potential protective factor for children at risk for aggressive behavior due to chronically accessible hostile attributions may be warranted.

Conclusions

Conclusions. On the basis of the findings presented here, the following conclusions seem warranted. First, a significant but small amount of the variance in teacher-ratings of children=s social behavior is accounted for by measures of

children=s discrete social cognitions, even when Peabody scores were controlled.

This replicates previous research and suggests that associations between measures of children=s social cognition and children=s social behavior is not simply a reflection of spurious associations with individual differences in receptive vocabulary.

Second, there was only modest evidence to support the mediational model that guided this work. Figure 5 presents the final mediational model. There was limited evidence that social strategies mediated associations between one measure of latent cognitive structures - peer affiliation - and prosocial and withdrawn behavior. This is some evidence that more global representations of peer relationships guide children=s discrete cognitive processing in given social contexts. Based upon findings from the current work and recent findings published by Burks et al., (1999) it seems that a likely area for future research may be multiple qualitative aspects of children=s representations of peer relationships (such as peer-oriented or hostile/aggressive) that may be

Figure 5: Final mediational model.

differentially associated with aspects of children=s discrete social cognition and social behavior.

Finally, there is some evidence that emotion regulation, as rated by mothers, moderates associations between young children=s hostile attributions and teacher-rated aggressive

behavior. This informs our understanding of the association between hostile attributions and aggressive behavior. Skill at

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Limitations. It is important to note several limitations of the current work. First, the sample size was fairly small, and complete data were not available for every participant. Thus, caution should be taken in generalizing from the findings

reported in this investigation to larger populations. Furthermore, although efforts were made to recruit participants from a variety of ethnic and socio-economic backgrounds, generalization to other populations is also limited by the fact that a sizable portion of the children (58, or 68.2%) who participated in this study were enrolled in a university-based laboratory preschool. Children who attend university-sponsored laboratory preschools may be more likely than children from the population at large to come from middle-class households. Although it has been argued that, unless there is some reasonable expectation that the variables would not be similarly associated among other populations, studies of the relationships between variables should not be discounted for using largely middle-class samples (Brown, Cozby, Kee, & Worden, 1999), it is important to note that the children studied in the current investigation were not randomly selected or representative of the general population.

Also, as mentioned previously, there were limitations in the measures employed in the current work. Perhaps the most serious concerns are in regard to the measures of emotion regulation. As noted earlier in this discussion, two of the three ratings of emotion regulation were made by teachers, who also rated the social behavior scales used as outcome variables, and thus shared method variance is a concern. Also, as discussed earlier, the measures of emotion regulation were based on ratings of emotion-regulation behavior, from measures designed to assess temperment, and were not measures of internal feeling states or physiological states. Finally, the measures of cognitive representations

of self and others are relatively new. In fact, this was the first data set to use the FAMP measure. As such, there is no validity and reliability information available for this measure. The two measures of cognitive representations of peer relationships were not significantly associated with each other, and evidence of mediation was found only for the peer affiliation measure. It should be noted that the peer affiliation measure is a narrow operationalization of children=s representations of peer relationships, which focuses on children=s motivation to engage in peer interaction. Further research and theory is necessary to refine measures of young children=s representations of peer relationships.

Additionally, this study is correlational in design, and so no inferences of causality should be drawn from the results. Also, although it seems reasonable to suggest that associations among cognitive representations, discrete social-cognitive processing, and social behavior may be reciprocal (for instance, peer interaction may influence subsequent cognitive representations of relationships) this study is cross-sectional and cannot address longitudinal issues. Moreover, this study reports the results of numerous correlational analyses -- 74 zero-order correlations are reported. As such, caution should be taken when interpreting the results from this study due to the possibility that significant results may be an artifact of chance associations. In fact, a Bonferonni correction based upon the number of correlations presented would yield a very conservative significance level of .0006, and none of the associations obtained in the current work would meet this stringent a level of significance.

Finally, it should be pointed out that the evidence of mediation obtained in the current work was not overwhelming. Of the10 proposed mediational paths leading from measures of representations of relationships, evidence supporting 3 paths (and an additional 2 paths that were not hypothesized) was obtained. No evidence was found to support the 7 paths leading from emotion regulation (there were 21 potential paths when one considers that there were three measures of emotion regulation in the current work). Further, the n for mediational analyses was reduced because of missing data, and among this sub-sample with complete data the associations between the independent variables and the dependent variables was only marginally significant. Mize et al. (in press) outline six plausible reasons why evidence to support mediational models are difficult to obtain, and three of these are particularly relevant to the current work.

First, it is possible that the mediational hypothesis is incorrect. Second, accurate estimates of mediation effects are difficult to obtain. This is partly due to the paradoxical problem of multicollinearity. Because tests of mediation require that the independent variable be significantly associated with both the mediating variable and the dependent variable, and that the mediating variable be significantly associated with the dependent variable, the power to detect significant mediational effects is reduced due to collinearity among the variables. Low power to detect mediation also results from measurement error in the dependent variables. In a mediational model, there are, in effect, at least two dependent variables in the causal path, and so attenuation of mediated effects

due to measurement error are magnified. Future researchers may wish to reduce problems with measurement error by collecting multiple indicators of the relevant variables in a sample large enough to use structural equation modeling (SEM), because SEM allows for the separation of variance due to measurement error (Mize et al., in press).

A third potential explanation of the meager support for mediation obtained in the current study is that mediational effects may be moderated by other factors, such as the quality and quantity of the child=s peer experiences, characteristics of the child such as general cognitive abilities and affect, and aspects of the social ecological surroundings, such as SES (Mize et al., in press). Future research and theory concerning potential moderators of mediational paths between latent cognitive structures and children=s social behavior is needed. Evidence that emotion regulation moderates associations between hostile attributions and children=s aggressive behavior suggests that emotion regulation might provide future researchers with one potential moderator of these mediational paths.

Implications. Findings from the current investigation indicate that pathways connecting children=s emotion regulation, representations of self and peer relationships, discrete social cognitions, and social behavior are complex, specific, and interacting. These findings should be of particular interest to researchers seeking to devise and test models of the precursors of young children=s social behavior, and further research and theory is clearly needed.

One important area for future consideration is the question of direction of effects for representations of relationships to social behavior. Questions about causality, e.g., does peer experience influence subsequent relationship representations, can only be addressed by longitudinal designs. Another area for future inquiry concerns the nature of representations of relationships. Results suggest the possibility that there may be multiple aspects of children=s cognitive representations of relationships, and that these may be differentially associated with children=s discrete social-cognitive processing and social behavior. Further research is needed to clarify how aspects of representations of relationships vary in richness or density, and in accessibility, and how differences in density and accessibility may relate to discrete social-cognitive processing and social behavior.

In addition, findings from the current investigation hold some important implications for professionals seeking to develop intervention programs targeting withdrawn and aggressive behavior in young children. First, results suggest that there are specific pathways to different behavioral outcomes, and it is logical to conclude that interventions for a given type of behavior should be targeted to the social-cognitive precursors most pertinent to that behavior. For withdrawn behavior, it may be the case that, in addition to programs designed to aid children in generating more relevent and sophisticated social strategies that are more engaging and less withdrawing, programs should also target children=s feelings and beliefs about their peers and about themselves in relation to peers.

In one intervention study, for example, Evers-Pasquale and Sherman (1979) found that children classified as peer-oriented using an earlier version of the peer affiliation measure benefitted from a social skills modeling film, whereas those classified as non-peer-oriented did not. This suggests that interventionists may wish to pre-screen withdrawn children for peer-oriented cognitive representations, and perhaps future research can be directed toward understanding how cognitive representations may be modified. For interventions aimed at reducing aggressive behavior, results from the current work suggest that children=s emotion regulation may be as important a consideration as children=s tendency to make hostile attributions. Finally, one important contribution of the current work is demonstrating that measures of young children=s representations of the self and of peer relationships can be developed and used successfully. Such measures may provide important tools for future researchers interested in the correlates of children=s social behavior.

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APPENDICES

APPENDIX A:

LETTER OF INFORMED CONSENT

INFORMED CONSENT FOR PLAYGROUP COMPARISON STUDY: CSC FAMILIES

You and your child are invited to participate in a study of preschool children's play and mother-child interaction. We hope to learn more about how young children play and solve different types of problems and how parents think their children should solve problems. You were identified as a possible participant because your child is between two and five years old and attends the Auburn University Child Study Center.

If you decide to participate, you will be giving us permission to access information about your child and family from the CSC data base. Specifically, we will retrieve information about you and your child based on: (1) Family Information Form, (2) Preschool Characteristics Questionnaire, (3) Raising Children Questionnaire, (4) What You Expect of Your Child questionnaire (5) What's Important for Preschoolers questionnaire, (6) Teacher's Checklist, the (7) Preschool Socioaffective Profile, the (8) Peabody Picture Vocabulary test, and the (8) Sociometric Interview. All such information will remain strictly confidental, with names removed and only numbers used to identify information about your child and family. We will also interview your child at school four times. In one interview, we will ask your child to tell us with whom (alone, with a friend, with an adult) he or she likes to do common preschool activities (e.g., build with blocks). In the second interview, we will ask your child to show us with puppets what he or she would do in 6 common peer interaction situations (e.g., someone knocks down your child's block tower). In the third interview, we will show your child some short videotaped scenes and ask your child to describe what happened. In the fourth interview, we will show your child two puppets with opposite opinions and ask your child which of two puppets your child agrees with.

In addition, you will be asked to view a short video tape containing stories about preschool children's interaction and complete a short questionnaire about your child's contacts with peers outside of school. We also would like to videotape you and your child for a short session (about 1/2 hour) while you play, read, and do a puzzle together. These procedures can be done at your convenience in your home or at the Child Study Center over the next two to three months.

In addition, if you and your child participate in the videotaped portion of the study we would like to pay you $20.00 for you participation. At the conclusion of the study, we will be glad to answer any questions you might have.

Please initial here to indicate that you have read this page _____

Any information obtained in connection with this study that can be identified as relating to you will remain confidential and will be stored in locked cabinets. We will use code numbers to identify all participants in the study and videotapes will be destroyed two years after you withdraw your child from the Child Study Center. The results for individual participants will not be discussed. All discussion will be in terms of groups, for instance, boys vs girls.

Your decision to participate will not jeopardize your future relations with Auburn University. Furthermore, you or your child may discontinue participation at any time without penalty. If you decide later to withdraw from the study, you may also withdraw any information which has been collected from you, should you wish to do so.

If you have any questions we invite you to ask us. If you have additional questions later, Dr. Jackie Mize (844-3232) will be happy to answer them. You will be given a copy of this form to keep. If your child participates in the study, we would like to provide you with a summary of the results. Please write you name and address on the attached card if you would like to receive a summary of the results when they become available.

YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE, YOUR SIGNATURE INDICATES THAT YOU HAVE DECIDED TO PARTICIPATE HAVING READ THE INFORMATION PROVIDED ABOVE. YOUR SIGNATURE ALSO INDICATES YOUR WILLINGNESS TO ALLOW US TO ACCESS INFORMATION ON RECORD AT THE CHILD STUDY CENTER AND TO VIDEOTAPE YOU AND YOUR CHILD INTERACTING TOGETHER.

_____ _____

Date Time Subject's Signature

_____ _____

Witness Investigator's Signature

APPENDIX B:

INSTRUCTIONS FOR COMPLETING THE PEER AFFILIATION ASSESSMENT

Peer Affiliation Assessment

Materials needed: Laminated pictures of each of 14 activities: a swing, some books, some balls, some wooden blocks, some toys on a shelf, a painting easel, some puzzles, a table with some chairs, some toy animals, a trike, some legos, some sand toys, marble works, and lincoln logs. Also, line-drawings of a child alone, a child with an adult, and a child with a same-age peer mounted on a poster board.

Instructions:
Tell the child that you would like to play a quick game with pictures. Show the child the line drawings on the poster board and explain Athis is a child about your age, this is a picture of the child with another kid the same age, and this is a picture of the child with a grown-up. A grown-up is an adult like a teacher or a parent. Now, let=s pretend that the child is you, and you can show me who you like to do some things with. You can do that by pointing to the right picture, or I=ll let you put the picture of the toy on to the picture of who you like to play it with. I=ll show you how. Here is a picture of some books. Do you like to read books by yourself, with another kid, or with a grown-up? Show me with these pictures...oh, I see, you like to do it with _____.@ How about playing with blocks, do you like to play blocks with a grown-up, by yourself, or with another kid? Oh, with _____. How about painting? Do you like to paint pictures with another kid, with a grown-up or by yourself?....@

Continue with each of the 14 activities. Present the child with each of the 14 activities in a random order. Mark each of the child=s choices on the score sheet. Selections for each activity should be checked under the appropriate column heading (by myself, with a grown-up, with another kid). Alternatively, older children can be instructed in using the coding sheet and allowed to mark their own choices, but make sure that they are consistent with their marks and what they tell you.

Be careful not to influence children=s responses by reinforcing specific selections. This should be a fun activity for young children to complete, and the interviewer should express sincere interest in the subject=s decisions. For example, the interviewer may say things such as AOh, I see you would like to do that by yourself...I wonder who you would like to do this with?@ This interview should only take a few minutes to complete. Thank the child for his or her help, and help him or her to re-enter the activities in the classroom.

A copy of the scoring sheet for this interview (titled Awhat I like to do@) is included. This assessment was adapted from an interview first used by Evers-Pasquale and Sherman, 1979.

What I Like To Do

Name: _____

I like to:	By myself	with a grown-up	with another kid
Swing			
Read books			
Play ball			
Play with toys			
Paint a picture			
Work puzzles			
Sit at a table			
Play with animals			
Ride a trike			
Play with blocks			
Play with legos*			
Play with sand toys*			
Play marble works*			
Build with Lincoln Logs*			

* These items were not used in the current investigation.

APPENDIX C:

FEELINGS ABOUT MYSELF AND PEERS PUPPET INTERVIEW

EMOTINT.V4 The Auburn Preschool Feelings Interview

1. *Introducing the Puppets to the child.*

Interview: **"Jane, I want to introduce you to a couple of friends of mine. This is fluffy..."**
Fluffy: (*raise Fluffy and say)* **"Hi, Jane"**
Interviewer: **"and this is Muffy..."**
Muffy: *(raise Muffy and say)* **"Hi, Jane"** (*From here on interviewer should not need to say too much more. most communication will be conducted through the puppets).*
Fluffy: **"Do you know what we want to do today? We want to talk to you"**
Muffy: **" Yeah! I want to tell you about myself"**
Fluffy: **"And I want to tell you about myself"**
Muffy: **"..and then we want you to tell us about yourself!**
Both Puppets: **"Great!"**

Establish that the child is engaged with the puppets and understands how the interview will be conducted by asking one or two warm-up questions. These should be light and not pertain to anything that will be covered during the interview. For example,

Fluffy: **"You know what Jane, I like chocolate ice cream"**
Muffy: **"And I like Vanilla ice cream..."**
Fluffy **"...how about you Jane?"**

In sum, do not begin the actual interview until the child is engaged.

Examples of other possible openers:

Fluffy: **"I like Brussel Spouts"**
Muffy: **"I don't like brussels sprouts"**
Fluffy: **"How bout you?"**

Or, apples, bananas, spinach, etc.

Muffy: **"I like to watch Sesame Street"**
Fluffy: **"I don't like to watch Sesame Street"**
Muffy **"How bout you?"**

Or The Simpsons, Power Rangers, Lion King, etc.

2. *ASKING THE QUESTIONS.*

C: "I'm like Fluffy" P: "So you DO like to play with other kids"

C: "I'm like Muffy." P: "Now what did Muffy say?"

"So sometimes kids like you and sometimes kids don't like you. How about most of the time, do you think kids like

P: "How about most of the time? Do you think you're smart (Fluffy)...or not smart? (Muffy)"

Fluffy: "I like to play by myself"
Muffy: "I like to play with other kids"
Child: "I don't like to play:

Summary of Interviewing Rules:

1. Make sure the tape recorder is on, and that the child's id number is on the tape and code sheet.

2. Introduce the puppets to the child. Explain what is going to happen in the interview. Use one or two practice questions to engage the child and to demonstrate how the interview works.

3. Interview with a neutral, non-judgmental tone.

4. Do not follow-up children's responses with an evaluative statement (e.g., "oh that's good" or "that's too bad")

5. Say the child's name frequently to make sure s/he is alert and paying attention.

6. Make sure the child's response is audible. Repeat the child's response if you know it will not be clear on the video tape.

6. Repeat questions by stating both statements. Do not restate a question by repeating only one of the statements.

7. If the child says 'both', repeat the question and ask the child which are they like most often. 'Both answers need to be prompted only once (**One-Prompt Rule**). Move on if the child continues to say 'both.

8. If the child offers an alternate response (i.e., different from the puppets' statements), acknowledge that answer and then ask them which of the two previously asked statements are they most like. If the child does not want to change his/her response, move on the next question after one prompt **(One-Prompt Rule)**.

Puppet Interview ID: _____ Date: _____ Interviewer: _____

I'm a fun kid to play with (3) I'm not much fun to play with. (1) s	1	2	3
I like to play with the kids at my school (3) I don't like to play with kids at my school (1) p	1	2	3
It's hard for me to make new friends (1) It's easy for me to make new friends. (3) e	1	2	3
I get mad at the kids at school (1) I don't get mad at the kids at school (3) s	1	2	3
When I want to play with other kids, they usually let me (3) When I want to play with other kids, they usually don't let me (1) o	1	2	3
The kids at my school are fun (3) The kids at my school are not fun. (1) p	1	2	3
I like to play by myself (1) I like to play with other kids (3) s	1	2	3
When I have a fun idea, other kids don't want to play (1) o When I have a fun idea, other kids want to play (3)	1	2	3
It's easy for me to ask another kid to share toys (3) It's hard for me to ask another kid to share toys (1) e	1	2	3
I'm not a happy kid (1) s I'm a happy kid (3)	1	2	3
When I ask kids to play they say No (1) When I ask kids to play they say yes (3) o	1	2	3
Kids at my school are mean (1) Kids at my school are nice. (3) p	1	2	3
It's easy for me to ask kids to stop doing stuff I don't like (3) It's hard for me to ask kids to stop doing stuff I don't like (1) e	1	2	3
I have a lot of fun idea (3) I don't have a lot of fun ideas (1) s	1	2	3
I don't have many friends at school (1) o I have lots of friends at school (3)	1	2	3
Other kids want to be my friend (3) Other kids don't want to be my friend (1) p	1	2	3
I'm not shy when I meet new kids (3) I'm shy when I meet new kids (1) s	1	2	3
When I ask kids to share toys, they say no (1) When I ask kids to share toys, they say yes (3) o	1	2	3
It's hard for me to ask to play with other kids (1) It's easy for me to ask to play with other kids (3) e	1	2	3

I'm mean to other kids (1) I'm nice to other kids. (3) s	1	2	3
Other kids like to play with me (3) Other kids don't like to play with me (1) p	1	2	3
It's easy for me to ask kids to play (3) It's hard for me to ask kids to play (1) e	1	2	3

FAMP items used to compute the FAMP measure of cognitive representations of relationships used in the current investigation:

I'm a fun kid to play with / I=m not a fun kid to play with

I like to play with the kids at my school / I don=t like to play with the kids at my school

The kids at my school are fun / The kids at my school are not fun

I like to play by myself / I like to play with other kids

I don=t have many friends at school / I have lots of friends at school

I have a lot of fun idea / I don=t have a lot of fun ideas

Other kids want to be my friend / Other kids don=t want to be my friend

Other kids like to play with me / Other kids don=t like to play with me

APPENDIX D:

MEASURES OF EMOTION REGULATION:

CHILDREN=S BEHAVIOR QUESTIONNAIRE

PRESCHOOL CHARACTERISTICS QUESTIONNAIRE

For the next 21 questions, please use the following scale. Try to think of this child in comparison to all the children you have known of this age. Remember: the more the statement is like the child, the higher number you should use.

1	2	3	4	5	6	7	NA
extremely untrue	quite untrue	slightly untrue	neither true nor untrue	slightly true	quite true	extremely true	not applicable

This child.....

1. has a hard time settling down for a nap.

1 2 3 4 5 6 7 NA

2. gets excited and worked up by even little things.

1 2 3 4 5 6 7 NA

3. calms down quickly following an exciting event.

1 2 3 4 5 6 7 NA

4. can be "cheered up" by talking about something she/he is interested in.

1 2 3 4 5 6 7 NA

5. has a hard time settling down after an exciting activity.

1 2 3 4 5 6 7 NA

6. gets overly excited (e.g., during transitions, during rough and tumble play, when a visitor comes).

1 2 3 4 5 6 7 NA

7. when angry about something, tends to stay upset for 10 minutes or longer.

1 2 3 4 5 6 7 NA

8. hardly ever gets very excited.

1 2 3 4 5 6 7 NA

9. seems to forget a bump or scrape after a couple of minutes.

1 2 3 4 5 6 7 NA

10. changes from being upset to feeling much better within a few minutes.

1 2 3 4 5 6 7 NA

1	2	3	4	5	6	7	NA
extremely untrue	quite untrue	slightly untrue	neither true nor untrue	slightly true	quite true	extremely true	not applicable

This child.....

11. hardly ever gets very angry.

1 2 3 4 5 6 7 NA

12. falls asleep within 10 minutes of being put down for a nap.

1 2 3 4 5 6 7 NA

13. when this child gets angry over something, he sometimes nearly loses control.

1 2 3 4 5 6 7 NA

14. is easy to soothe when he/she is upset.

1 2 3 4 5 6 7 NA

15. gets angrier than most children his/her age (e.g., when someone takes a toy, when he/she doesn't get his/her way).

1 2 3 4 5 6 7 NA

16. is very difficult to soothe when he/she has become upset.

1 2 3 4 5 6 7 NA

17. has a hard time going back to sleep after waking from a nap.

1 2 3 4 5 6 7 NA

18. gets angry more easily than most children his age (e.g., "has a short fuse" when someone takes a toy, when he/she doesn't get his/her way).

1 2 3 4 5 6 7 NA

19. rarely cries for more than a couple of minutes at a time.

1 2 3 4 5 6 7 NA

20. sometimes gets almost out of control, when excited(e.g., during transitions, during rough and tumble play, when a visitor comes),

1 2 3 4 5 6 7 NA

21. if upset, cheers up quickly when she/he thinks about something else.

1 2 3 4 5 6 7 NA

ID Number _____

Who completed this form? Mother Father

PRESCHOOL CHARACTERISTICS QUESTIONNAIRE

On the following questions, please circle the number that is most typical of your child. "About average" means how you think the typical child would be scored.

1. How easy or difficult is it for your to calm or soothe your child when he/she is upset?

1	2	3	4	5	6	7
very easy			About average			difficult

2. How consistent is your child in sticking to his/her sleeping routine?

1	2	3	4	5	6	7
very consistent; little or no variability			some variability			very inconsistent; highly variable

3. How consistent is your child in sticking to his/her eating routine?

1	2	3	4	5	6	7
very consistent; little or no variability			some variability			very inconsistent; highly variable

4. How easy or difficult is it for you to know what is bothering your child when he/she is irritable?

1	2	3	4	5	6	7
very easy			about average			difficult

5. How many times per day, on the average, does your child get cranky and irritable for either short or long periods of time?

1	2	3	4	5	67
never	1-2 times	3-4 times per day	5-6 times per day	7-9 times per day	10-14 times per day more than 15

ID Number _____

6. How much does your child cry, fuss or whine in general?

1	2	3	4	5	6	7
very little much less than the average child			average amount about as much as the average child			a lot; much more than the average child

7. How does your child typically respond to new playthings?

1	2	3	4	5	6	7
always responds favorably			responds favorably about half or the time, or is always neutral			always responds negatively or fearfully

8. How does your child typically respond to new foods?

1	2	3	4	5	6	7
always responds favorably			responds favorably about half or the time, or is always neutral			always responds negatively or fearfully

9. How does your child typically respond to a new person?

1	2	3	4	5	6	7
always responds favorably			responds favorably about half or the time, or is always neutral			always responds negatively or fearfully

10. How does your child typically respond to being in a new place?

1	2	3	4	5	6	7
always responds favorably			responds favorably about half or the time, or is always neutral			always responds negatively or fearfully

11. How well does your child adapt to new experiences (such as in items 7-10) eventually?

1	2	3	4	5	6	7
very well, always likes it eventually			ends up liking it about half of the time			almost always dislikes it in the end

ID Number _____

12. How easily does your child get upset?

1	2	3	4	5	6	7
very hard to upset--even by things that upset most children			about average			very easily upset by things that would not bother most children

13. When your child gets upset, how vigorously or loudly does he/she cry and whine?

1	2	3	4	5	6	7
very mild intensity or loudness			moderate intensity or loudness			very loud or intense, really cuts loose

14. How does your child react during hair washing?

1	2	3	4	5	6	7
very well--likes it			about average--does not mind it			does not like it at all

15. How active is your child in general?

1	2	3	4	5	6	7
very calm and quiet			average			very active and vigorous

16. How much does your child smile and laugh?

1	2	3	4	5	6	7
a great deal, much more than most children			an average amount			very little, less than most children

17. What kind of mood is your child generally in?

1	2	3	4	5	6	7
very happy and cheerful			neither serious nor cheerful			serious

18. How much does your child enjoy playing with you?

1	2	3	4	5	6	7
a great deal, really loves it			about average			very little; does not like it very much

ID Number _____

19. How much does your child want to be cuddled?

1	2	3	4	5	6	7
wants to be free most of the time			sometimes wants to be held; sometimes not			a great deal -- to be held almost all the time

20. How does your child respond to disruptions and changes in the everyday routine, such as when you go to church or a meeting, or trips, etc.?

1	2	3	4	5	6	7
very favorably does not get upset			about average			very unfavorably, gets quite upset

21. How changeable is your child's mood?

1	2	3	4	5	6	7
changes seldom, and changes slowly when he/she does change			about average			changes often and rapidly

22. How excited does your child become when people play with or talk to him/her?

1	2	3	4	5	6	7
very excited			about average			not at all

23. On average, how much attention does your child require, other than for caregiving (bathing, eating, etc.)?

1	2	3	4	5	6	7
very little-- much less than average			average amount			a lot--much more than the baby

24. When left alone, your child plays well by himself/herself.

1	2	3	4	5	6	7
almost always			about half the time			almost never-- will not play by self

25. How does your child react to being confined (as in seatbelts, bedroom, bed, etc.)?

1	2	3	4	5	6	7
very well -- likes it			minds a little or protests once in a while			does not like it at all

ID Number _____

26. How much does your child cuddle and snuggle when close to you?

1	2	3	4	5	6	7
a great deal--almost every time			average; sometimes does and sometimes does not			very little; seldom cuddles

27. How easy or difficult is it to take your child places?

1	2	3	4	5	6	7
easy; fun to take child with me			okay; child may fuss but no real trouble			difficult; child is usually disruptive

28. Does your child persist in playing with objects when he/she is told to leave them alone?

1	2	3	4	5	6	7
rarely or never persists			sometimes does and sometimes not			almost always persists

29. Does your child continue to go someplace even when told something like "stop," "come here," or "please don't"?

1	2	3	4	5	6	7
rarely or never			sometimes does and sometimes not			almost always

30. When removed from something he/she is interested in but should not be getting into, does your child get upset?

1	2	3	4	5	6	7
never			sometimes does and sometimes not			always gets very upset

31. How persistent is your child in trying to get your attention when you are busy?

1	2	3	4	5	6	7
does not persist at all			will try, but will only mildly persist			very persistent

32. Please rate the overall degree of difficulty your child would present for the average mother.

1	2	3	4	5	6	7
super easy			ordinary, some problems			highly difficult to deal with

Items used to compute the mother-rated emotion regulation composite used in the current work:

How many times per day, on the average, does your child get cranky and irritable for either short or long periods of time?

How much does your child cry, fuss or whine in general?

How easily does your child get upset?

When your child gets upset, how vigorously or loudly does he/she cry and whine?

How changeable is your child's mood?

Does your child continue to go someplace even when told something like "stop," "come here," or "please don't"?

When removed from something he/she is interested in but should not be getting into, does your child get upset?

Please rate the overall degree of difficulty your child would present for the average mother.

APPENDIX E:

DESCRIPTIONS OF THE 10 VIDEOTAPED VIGNETTES USED IN THE VIDEOTAPE-BASED INTERVIEW

Hostile Attributions and Encoding of Social Cues
Video Tape Stories:

1. Two kids playing a game, third boy comes in and knocks game over

2. Boy riding crane, second boy enters and says "I was playing with that before" and pulls away crane.

3. Two boys painting, one says "Im going to paint this picture for my mother." A third child (girl) comes in and says "you dont even know how to write your name" while knocking paint over.

4. Two kids playing are firefighter, and a third child asks to play. The first says Ayou cant play we only have two fire hoses.@

5. One kid is playing on the computer, a second child says "you=ve been playing with that all day, can i have it?" The first boy says "no." and keeps playing.

6. Two children making art, one says "I don't have any glue" and picks up other's glue. The other says "you took the glue I was using"

7. Two kids building with large blocks building a tower. A third child runs through the blocks, laughing.

8. Two kids playing dressup, one says Awe have to go to the doctor, our baby is sick. A third child asks to play. One of the first two children says "you can't because we have to take our baby to the doctor"

9. A child is carrying a tray filled with cups and announces, "here's the juice for snack, oh no" as the tray and the cups fall down. A second chid looks on.

10. One child is playing piano but teacher asks her to come sign her name, when she returns a second child has it and says "well I have it now."

APPENDIX F:
INSTRUCTIONS FOR CONDUCTING AND CODING
THE VIDEOTAPE-BASED INTERVIEW

The following is a set of instructions for conducting the videotape based child assessment. It is very important that we administer the interview in the same way for each child; therefore, the instructions in this manual should be completely familiar and memorized. I am absolutely sure that problems will arise that have not been anticipated. When this happens, we will have to get together and discuss it.

It is necessary to review some general procedures for conducting interviews with children. First of all, this procedure will be long for children of this age. For this reason it is necessary for the interviewer to take some time to establish some rapport with the child. As you walk up the stairs, the interviewer should talk to the child in order to develop a positive atmosphere for the interview (interviewers should have already spent some time participating in the target child's classroom so that the child is acclimated to the interviewer). As you walk up the stairs before the onset of the interview talk to the child in a warm way about their day, etc, to allow the child to feel that the interviewer is receptive to him/her; this should make the child feel more comfortable and more willing to cooperate throughout the interview. Also, ask the child if he or she needs to go to the bathroom before getting started. Once you are in the research room, get down to business immediately! Because this interview is long we want to move along as quickly as possible so that the child doesn't feel like she has been in this room forever. (Of course, this means that you should have everything ready to go before you get the subject!)

Because of the length of the interview, it may become necessary for the interviewer to take breaks with the child. Although a break might actually increase the amount of time it takes to complete the interview, it will help to ensure that quality data are obtained from the child. Taking breaks also increases the chances of finishing all 14 stories. Try to finish at least seven stories (that's halfway) before taking a break. Breaks should be a time when the child can relax and have fun doing something besides being asked a bunch of questions. The interviewer should remain engaged with the child during the break; do not simply let the child wander off somewhere and play by herself for a while. Great break activities could be finger plays, simon says, singing a song, reading a book, or hiding things in the room or your hands. Remember, a break should be fun!

Something else to remember is that children will search for cues from the interviewer in order to discover what the "right" answer is. Even though they are told that there are no right or wrong answers, children will continue to look for cues. It is therefore important that the interviewer be very conscious of his/her behavior so as not to give any indication to the child that he/she has given a bad answer or a good answer. At the same time, however, the interviewer needs to reinforce the child for her participation and cooperation. The solution to this paradox is to make neutral responses to the child's answers (e.g., "o.k."; "alright"; "um huh") and to praise the child at intervals for working hard or listening carefully. Phrases such as "you're doing such a good job listening to my stories," and "I like how you're thinking about my questions," or even "I am really having fun watching these stories with you" are examples of ways to praise the child for attending and not for a particular response. The idea is to keep the focus of the praise on the child's cooperativeness and not on his/her specific answers.

A related point is that the interviewer needs to pay close attention to the child's behavior and responses. It is quite common for children to give either the last answer they heard or the first answer they heard when asked to chose from multiple options. This kind of responding is called response bias. If the child does not seem to be thinking through the questions before answering, or seems to be answering with a response bias, prompt the child "take your time and think really hard before you answer." Do this as often as necessary to ensure that the child is giving quality answers.

In an attempt to avoid biased responding on the part of the child, in some instances the options on the response sheet are presented in a counterbalanced order. It is therefore important for the interviewer to read the responses in the order given, even though it may sound awkward. Remember that preschoolers like activities that are fast-paced and fun (like Sesame Street). Being familiar with the vignettes and interview format before hand will help the interview go smoothly and quickly. Put some energy into the interview, keep the pace rapid and interesting, use tone of voice to keep child's interest.

When conducting the interview the interviewer has a lot of "props" to worry about - the video monitor, and the answer sheet. It is important to familiarize yourselves with this material and to develop a manner of placing these materials on the table so that it is comfortable for you. In general, for right-handers the subject should sit to your left so that you can write down the answers. The video monitor should be placed so that it is easily seen by the subject and so that the interviewer can easily press the necessary buttons. During the presentation of the video taped vignettes the child should not be distracted by the pictures; these should be placed in front of the child only after the still button has been pushed.

A set up that allows eye contact with the child is best. If the child is a little fidgety or if his/her attention is wandering while you are reading the story or question, it sometimes helps to focus the child if you put your arm around the child's shoulder. It is also helpful if the interviewer memorizes the protocol so he/she does not have to keep his/her eyes on the paper.

After a while in the interview, children who have been on-task may start to get fidgety, not pay attention, and/or ask off-task questions. If attempts to refocus the child on the task fail, it will probably be a good time for a break. Finish the vignette you are on (remember to try to get at least halfway through the 14 vignettes) and then explain to the child that he/she has been doing a very good job answering your questions and that it is time for a break. Explain that you are not finished and that the child needs to be ready to listen to some more stories after the break. Play with the child for five to ten minutes and then continue.

Although some of our constructivist children have minds of their own they usually comply to the wishes of an adult who is firm and clear about what he/she expects. There will be subjects who say "I'm finished with this now" or who will want to leave. At this point the experimenter can say that he/she really needs for the child to watch a few more stories, and remind the child how much fun the interviewer is having. It should be an extremely rare event for the child not to complete the procedure in one setting; however, if you cannot encourage the child to complete the procedure, tell the child that he/she can finish later. Be sure to emphasize that this is fun and important so that the child will be willing to continue at a later date. Unfinished video assessments must be completed within ONE WEEK of the beginning. Remember, we can only use data for subjects who have completed the procedure so it is very important that all the subjects complete the assessment. But most importantly, this should be a fun and positive experience for every child! The children=s needs should always come first.

If you conduct the interview at the child's home, after everyone has been introduced the child and the interviewer need to find a room where the interview can be conducted (make sure this room has an electrical outlet for the monitor). While the interviewer is setting up the equipment, he/she can be informally chatting with the child about his/her day. This informal conversation should last until the interviewer feels the child is comfortable with the interviewer. Let the child use the bathroom, get a drink, whatever they need to do to get set.

At the beginning of the procedure it is helpful to "set up" the measure for the child. Describe what you are going to do and what you want the child to do. For example "We want to know what kids think about things that happen in school. We're going to watch some stories on T.V. You will have to pay very close attention, because I want you to tell me about the story. Let's practice that." At this point, play the practice story for the subject. Remember to use the practice story as an opportunity to get the subject ready for the assessment; for instance, if the child is not ready to say what the kids were doing you can prompt with "were the kids swinging? what else were they saying and doing?" (Only during the practice story will you ask specifics about the event). Make sure that the child gets an idea of what will be expected during the interview.

Following the practice story, turn on the audio-recorder. This is to record the entire assessment. Before the interview, write the names and dates on the cassette (there should be a sticker in each cassette package). At the beginning of the day record "This is the date, AM/PM, this is interviewer's name, interviewing subject's name, from Mrs. teacher's name class." Following the assessment, use the audio-recording to double check what you have written (especially the verbatim responses to questions 1 & 3). To help the quality of the recording, as well as to make sure you understood what the kid meant, repeat the subjects responses (as you record the response verbally reflect what the child has said.) For example, "So, you said you'd ask 'They were swinging,' Is that what you said?"

There are two questions for each vignette,(1) what were these children saying and doing? (to which the interviewer records the child's response verbatim and scores relevancy on a 0-3 scale), and (2) a forced choice attribution question (Awas she being mean, or not being mean?@A

1. What were the kids saying and doing? This is the first question, when the child tells what happened in the vignette. As the child answers, write down the answer verbatim in the space provide on the interview protocol code sheet. For all vignettes, this question is scored on a zero to three scale of relevancy. To be scored 0, the child's response will contain virtually nothing that actually occurred on the tape. A score of 1 represents a response that contains some but not all relevant information or contains all relevant information but some that did not occur on the tape. To be scored 2, the response will describe the significant actions portrayed on the tape, and will contain no information that did not occur on the tape. To be scored a 3 a response must contain all the significant actions in the story and additional relevant descriptions of the event. If a child stops answering before a 2 can be scored ask the child "what else were the kids saying or doing?" Prompt subjects twice for each vignette (i.e., the child gets 3 chances to give information) or until the child's response can be coded as a 2. Remember not to prompt with a yes/no question (e.g, "can you tell me something else?" or "did anything else happen?") and to never ask about a specific event or cue (for example, you would never say "what did he look like," or "did they have any toys?") . Indicate that a prompt was given in the written narrative by placing a slash (/) between the child's response prior to and after each prompt.

0 is scored when the subject gets none of the actions from that vignette, the child doesn't answer, the child says "I don't know," or the child's description consists only of information not in the tape.

1 is scored when a child reports at least one but less than all the actions listed below, or includes information not presented in the tape. A score of one implies that the subject's description did not express a full understanding of what has occurred.
2 is scored if the child gets the two most significant actions (listed A & B below) and the description only includes information on the tape. A score of two implies that the subject's description reflects a full understanding of what occurred in the vignette, but this answer is not as detailed as possible.
3 is scored for incredibly detailed and accurate answers. A three is scored when a subject's reply contains everything necessary for a score of 2, but also contains some additional relevant information. A score of three reflects a highly relevant, detailed answer.
8 is cored when the child states that he or she doesn't know.
9 is cored when the child does not answer.
Remember to let the child answer until:
- the child has gotten a two (2) or
- you have prompted the child twice after the initial question.
The actions of each vignette for tape A are broken down in the following list (The details of tape A are provided for training purposes. Remember that these are all the actions in the stories broken down into small units. The kids will have lots of different ways to say the same thing, so make sure you understand what the kid is trying to say. Also, a score of two means that the subject got any two of the significant points, creating a description of what occurred in the stories (subjects need not list all of the points. Following is a listing of the actions in each vignette.
practice VIGNETTE: (a) Green shirt and peer are swinging.
(b) Third child says to the peer "I'm going to knock you out of that swing."
(c) peer says "Oh no"
(d) peer drops animal
VIGNETTE 1.
(a) two kids playing a game
(b) green shirt knocks the game off
(additional) green shirt sort of smiles a little, (kids look at green shirt, kids are sad, etc)
VIGNETTE 2.
(a) greenshirt playing with crane
(b) boy takes crane from greenshirt
(Additional: boy says hey I was playing with that before (he had it before, etc) and slides him off, takes it back, etc)
VIGNETTE 3.
(a) Green shirt and boy painting
(b)girl knocks over boys paint
(additional: girl says you don't know how to write your name na na na (or girl came up to them, etc), boy says OHHH! (or looks sad)
VIGNETTE 4.
(a) two girls are playing firefighter
(b) girl says no (they wouldn't let her play, she couldn't play, etc)
(additional: green shirt says can I play? (asks to play, etc.), girls said no because there are only two firehoses, other toys around)
VIGNETTE 5.
(a) green shirt asks to play with computer (wants to use it, etc)
(b) boy says no, I'm using it (doesn't let him use it, etc)
(additional) boy at computer all day, boy keeps playing computer, never looks at green shirt, doesn't let him play etc.)
VIGNETTE 6.
(a) Greenshirt says I don't have any glue (she doesn't have any glue, she wants to use it, etc.)
(b) green shirt takes glue
(Additional) green shirt and girl gluing pictures (art, etc), girl says you took the glue I was using (took her glue, etc)
VIGNETTE 7.
(a) green shirt and girl making tower with blocks (building with big blocks, they built them up, etc.)
(b) little boy crashes the blocks (he knocked them down, etc)
(additional) green shirt and girl watch (look at boy, etc),
boy laughing a little (running, happy, etc)
VIGNETTE 8.
(a) greenshirt asks to play (she wanted to play, etc)
(b) girl says she can't play (they wouldn't let her play, she couldn't play, etc)
(additional) (two) kids are playing Dressup (dolls, etc), geenshirt asks to play, girl says no, because her baby is sick and must go to the doctor (or something like that).
VIGNETTE 9.
(c) girl drops juice (The juice falls, etc)

(b) green shirt at table
(additional) girl says here's the juice for snack (she had the juice, etc), girl says (ohhh) (Looks sad, etc.)
VIGNETTE 10
(a) green shirt had the piano
(b)another girl starts playing piano (she got it, etc)
(additional) teacher tells her to come write name (teacher took her, etc), greenshirt comes back and says hey I was playing with that (she had her piano, she wanted it, etc), girl looks back and says well I got it now. (she wouldn't let her have it, she kept it, etc)

REMEMBER to repeat each of the child's responses verbatim to be sure that you can understand them on the audiotape!!

For each vignette, spontaneous hostile attributions may be inferred in the children's response (e.g. that was mean, or he was being mean). This is coded as either a
1 - the child's answer contained a reference to the provocateur as being mean, hostile, cruel, not nice wanted to hurt her, etc.
0 - the child's answer did not imply that the peer was being mean.

The coding of inferred hostile attributions is made on the scoring sheet. When this category applies to a particular vignette, there is a space labeled "hostile attribution____" where the interviewer will code the responses as 1 or 0.
Again, repeat the child's response to make sure you understand and it can be heard on the tape!!

2 Forced Choice Attribution for the provocation vignettes, each subject is asked to judge the intentions of the provocateur in the vignette. This question reads "Was the child being mean (coded as 1) or not being mean (coded as 2). If the child states that "its hard to tell" code this as 3. If the child says he/she doesn't know, code 4. To summarize:

1 being mean
0. not being mean
9. no answer / doesn=t know

Remember, again, to repeat the child's redsponse (to help your undertanding and the quality of the recording).

APPENDIX G:

ENACTIVE AND LINE-DRAWING BASED INTERVIEW

ENACTIVE SOCIAL KNOWLEDGE INTERVIEW:

ADMINISTRATION AND CODING MANUAL

REVISED, 1993

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Administering and scoring the enactive interviews of social knowledge involved the following steps:

I. Conducting the enactive interviews; children respond to six hypothetical dilemmas, or stories (interviews are audiorecorded)
II. Identifying children's enactive strategy to each of the six stories.
III. Rating children's enactive strategies on five-point scales of engaging/assertive vs. passive/withdrawn; sophistication/relevance/circumspection vs. simplistic/vague; and friendly(helpful to peer) vs. hostile (harmful to peer).
IV. Indicating the presence or absence of a social goal in the children's strategy.
5. Conducting the social problem solving interview; children respond to line drawings of hypothetical social dilemmas and respond with up to six strategies for each vignette.
VI. Identifying children's strategies and coding these in the same manner as in the enactive interview (steps III & IV above). Responses will also be coded for NOVELTY (i.e.,is this a new strategy or a repetition of one that was suggested previously).

OVERVIEW

This interview is comprised of two segments, an enactive procedure and a reflective procedure using line drawings. The purpose of this interview is to assess preschooler's responses to hypothetical social situations. During the enactive segment, using puppets, the interviewer and the subject enact six stories, each of which represents distinct social dilemmas that preschoolers may actually face. The spontaneous response through children generate in response to the enacted dilemma constitutes the child's strategy for each of the six stories. Following the completion of the six enactive social dilemmas, the interviewer and child complete the second portion of the interview by viewing line drawings of the same six social dilemmas.

PART 1: ENACTIVE PROCEDURE

Conducting the interviews:

All stories require: A puppet the child has selected "to pretend to be you (i.e., the child) today," or two puppets for the interviewer, and small toys. The toys will be specified for each of the following stories and include: A small doll (about 1-2"), small farm animals, e.g., a horse and a cow, set of small blocks (Playskool blocks work well), a small vehicle (e.g., a small lego truck), and a small sandbox (e.g., a large matchbox) with sand.

First take the child to a table on which there is an array of puppets representing both sexes and different races, hair coloring, etc. Ask the child to select a puppet that he/she would like to use and "pretend to be you today." Select two puppets of the same sex for yourself. Then take the child to a different table (well out of sight of the array of puppets) on which you can display some of the toys at one time while keeping the others out of view. A tape recorder should also be present but out of view. Mize arranged this by building a foldable plywood screen that could be placed on a nursery-school sized table and behind which it was easy to hide the toys that were not in use and the switch for the tape recorder.

The Interviewer first presents the training story and then Stories 1 through 6. Stories 1 through 6 should be presented in counterbalanced or random order.

The stories are introduced by saying that "I want to find out what you would do in school. So you can show me with your puppet what you would really do." The Interviewer may repeat or clarify the Training story until it is clear that the child understands the object of the task (most children require only one presentation of the Training story). Most children catch on right away that they are to make their puppet do as the Interviewer instructs (e.g., "walk up to the other kids," "build a tall tower," "play with the other kids," "watch"). Also, most children respond spontaneously at the proper place in the story, especially after they have gone through the Training story. If the child does not respond spontaneously, the Interviewer says, "What would you do then? Tell me and show me with your puppet what you would do." The Interviewer should repeat all the child's words and describe the child's actions so they are clear on the audiotape, but not make any inferences as to motive, etc. For instance, if the child's response to a story is, "Bam, you're a bad boy," spoken as the child hits the Interviewer's puppet with a block, the Interviewer would say, "So you say, 'Bam, you're a bad boy' and you hit the kid who's crying on the back with a block. Is that right, is that what you do?" The Interviewer does not, however, say, "you're really mad" (unless, of course, the child has told you this). The child may then endorse the restatement or correct the Interviewer, for instance, by saying, "No, not him, the one who said Na-na-na-na." The Interviewer would then repeat the corrected version, "Oh, so you hit the kids who was teasing? Is that right?"

After each story, toys that are not needed for the next story are put out of sight and any additional toys needed for the next story are taken out. While doing this, the Interviewer should express appreciation to the child for showing what really happens in school. For example, I'm glad you're showing me what you would do in school. Now let's say that one day ..."

Training Story

Props Needed: The puppet the child has selected, two puppets for the Interviewer, small blocks.

If the child has not already done so, ask him/her to put on the puppet that he/she is "pretending to be you today." Then say to the child, "Let's say one day you and these other kids are playing with blocks. Show me with your puppet how you would do that." Engage the child in enacting with his/her puppet and your puppets a scene of playing with blocks. For instance, "Here, subject's name, you put this block on top; our building is so tall," etc. Continue play acting with the puppets, demonstrating playing with blocks. Preschoolers usually become involved in this play right away and begin talking through their puppet. Then say, "then you hear the teacher say, 'O.K. girls (boys), it's time to clean up now.' Now, I'm gonna show you what this kid does (hold up one puppet for emphasis), then I'm gonna show you what this other kid does (hold up other puppet for emphasis), and then after that it'll be your time to show me what you would do in school when the teacher says it's time to clean up. This kid says I'm gonna clean" (demonstrate first puppet engaged in picking up and stacking blocks to one side, i.e., cleaning up). As yourself (i.e., the adult experimenter) say, "Let's see what this other boy/girl would do when it's time to clean up." Have the second puppet move quickly off to the side of the scene while saying, "I'm not going to clean up, I'm leaving." Speaking as yourself, say to the child, "Now, it's your turn to show me what you would do when the teacher says it's time to clean up. You can show me with your puppet and tell me."
Repeat child's strategy verbatim and describe actions.
After the story ask the child, "Is that something that might really happen in school," to emphasize your desire for a response that represents a typical action, rather than a fantasy.

For stories 1 through 6 follow the same format as described above, except that each story is presented only once.

Story 1: "Other kid wants to play"

Props: Two puppets for the Interviewer, the child's puppet, small blocks, small vehicle, two small farm animals; one for the Interviewer's puppet who is "playing" with the subject, one for the child's puppet; the blocks, vehicle and _____ are lying to the side.

Say to the child "One day you and this other kid (indicate one of your puppets; the other puppet is off to the side or in your lap) are having fun playing with the farm animals." (If the child does not begin playing right away, say, "Show me with your puppet how you play with the farm animals with this other kid," and engage your puppet and subject's puppet in play with the farm animals for a few seconds.) Have your puppet say, "We only have two farm animals to play with." Then have your other puppet (the one who has been off to the side up till now) approach your playing puppet (the one who is playing with the child's puppet) and both shove your puppet (gently!!) and at the same time say to the child's puppet, "Hey, child's name, I want to play with you now!"

Story 2: "Sandbox"

Props: One puppet for Interviewer, one puppet for child, small sandbox, two farm animals in sandbox, blocks a couple of feet away from the sandbox.

Say, "One day you and this other kid are having fun playing in the sand table" (or sandbox). As in story one, engage child briefly in role playing with puppet playing with farm animals in sandbox.) Then have your puppet say, "Child's name, I'm tired of playing in the sand, I'm going to play with the blocks now." Have your puppet move to blocks and start building with them.

Story 3: "Knocks over blocks"

Props: Puppet for child, puppet for Interviewer, the small blocks.

Say, "Now on this day in school, you're building a tall tower with blocks. Show me how you do that." Allow the child to construct a tower say about 4-5 blocks tall using his/her puppet. Then have your puppet approach tower and push it over, saying at the same time, "Hey, child's name, I was playing with those before and you can't play with them now."

Story 4: "Teasing"

Props: Puppet for child, two puppets for Interviewer, the blocks for the child's puppet to play with.

Say, "Let's say that one day you are building with blocks, can you show me h ow you would build with the blocks." Allow the child to become engaged with the blocks, then a couple feet away from the child enact the following scene with your two puppets. One of your puppets says to the other, "Na-na-na-na-na" and the recipient of the teasing cries and says, "Oh, it makes me feel sad when you tease me like that." The first puppet then teases again, "Na-na-na-na."

Story 5: "You can't play"

Props: Puppet for child, two puppets for Interviewer, two farm animals for Interviewer's puppets, blocks, the vehicle, and the small doll lie nearby but unused.

Say, "One day you don't have anything to do, so you're just walking around the room. Show me with your puppet how you would just walk around." (You may have to indicate to the child an area of the table away from the toys.) Have your two puppets begin to play with the farm animals, making animal noises, etc. "Then you see these two kids playing with the two farm animals, and it looks like they're having fun. So you walk up close beside them because you'd like to play, too" (if child does not do this with puppet, you may have to say, "show me with your puppet how you would walk up close to these other kids"). When child's puppet approaches your puppets, have one of your puppets say to him/her, "You can't play, cause we only have two farm animals."

Story 6: "Nothing to do"
Props: Two puppets for Interviewer, blocks for the Interviewer's puppets, the doll, vehicle, and farm animals are lying nearby, unused.

Say, "Let's say one day you don't have anything to do and you are just walking around the room. Show me with your puppet how you would do that." (You may have to direct the child to an area of the table with out toys.) Have your puppets begin to play with the blocks, saying, "Hey, we're building a tall tower." (Because this story has a less clear-cut provocation or stimulus for the child to respond to, it is more likely that you will have to say at this point, "What would you do if you saw these kids having fun playing with the blocks?")

PART 2: REFLECTIVE ASSESSMENT

Following the completion of the six enactive stories, the interviewer puts the puppets and props away and brings out the line drawings. The interviewer states "now let's look at pictures of these stories. I want to know what you think about them".

Story 1: "Other kid wants to play"

Show the child the line drawing of story one and say to the child "One day you and this other kid BILLY/BETTY (indicate this in the picture by pointing out to the child) are having fun playing with the farm animals. and then BILLY/BETTY says 'We only have two farm animals to play with.' And then another kid, CHRIS/CHRISTY comes up and pushes BILLY/BETTY out of the way and says 'Hey, child's name, I want to play with you now!' What would you do next if that happened to you?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

Story 2: "Sandbox"

Show the child the line drawing of story 2 and say, "One day you and this other kid, TOM/TINA are having fun playing in the sand table (or sandbox). After a little while, TOM/TINA says, 'Child's name, I'm tired of playing in the sand, I'm going to play with the blocks now.' And gets up to leave. What would you do next if that happened to you?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

Story 3: "Knocks over blocks"

Show the child the line drawing of story 3 and say, "Now on this day in school, you're building a tall tower with blocks. And then LARRY/LAURA comes over and says 'Hey, child's name, I was playing with those before and you can't play with them now.' and knocks your block tower over like this. What would you do next if this happened to you?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

Story 4: "Teasing"

Show the child the line drawing of story 4 and say "Let's say that one day you are building with blocks, and you see JIM/JOAN saying, "Na-na-na-na-na" to LINDA/LESS who cries and says, 'Oh, it makes me feel sad when you tease me like that.' What would you do if you were there and you saw that?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

Story 5: "You can't play"

Show the child the line drawing of story 5 and say, "One day you don't have anything to do, so you're just walking around the room. Then you see these two kids PAT and CHRIS playing with the two farm animals, and it looks like they're having fun. So you walk up close beside them because you'd like to play, too. BUT when you get next to them PAT says, 'You can't play, cause we only have two farm animals.' What would you do next if that happened?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

Story 6: "Nothing to do"

Show the child line drawing #6 and say, "Let's say one day you don't have anything to do and you are just walking around the room. Then you see BETH/BOB and STEVE/STEPHANIE playing with blocks and BETH/BOB says 'Hey, we're building a tall tower.' What would you do if you saw these kids having fun playing with the blocks?"
After each responses, repeat all of child's words and actions clearly so that these are clear on the audiotape and to confirm that you understood child.

SCORING

RATING OF STRATEGIES FROM THE ENACTIVE AND REFLECTIVE PROCEDURE

STRATEGIES GENERATED IN BOTH THE ENACTIVE AND REFLECTIVE PROCEDURE ARE SCORED USING THE SAME RATING PROCEDURE.
In each vignette, the child is asked to tell or show "What would you do if this happened to you?" As the child responds, repeat the child's response verbatim and describe the child's nonverbal behavioral responses (such as using his puppet to hit the other puppet or hitting the picture in the line drawing). Subject's strategies are to be coded on 3 five-point rating scales: passive/withdrawal vs. engaging/assertive; sophistication/relevance/circumspection vs simplistic/vague; and aggressive (harmful to peer) vs. friendly (helpful to peer). As in all questions, 8=doesn't know, 9=no answer.

Passive/withdrawal responses vs. engaging/assertive responses (Blank marked "ASSERTIVE" on score sheets)

Engaging responses are responses that would likely result in interaction with the peer, a response that is likely to result in sustained interaction between the subject and the peer in the story. Responses that are active, that are likely to continue some form of direct interaction, but are not likely to foster sustained, positive interaction compose the middle range of this scale. Responses coded low in this dimension are responses that are unlikely to result in continued, positive interaction: withdrawal or passive strategies.

1 Extreme withdrawal (I'd go somewhere else) that does not include a reference to playing with someone else.
2 Passive - does not imply joining the child (I wouldn't do anything, wait for a turn or until they're finished).
3 Withdrawal from the immediate interaction under the condition that the subject would play with someone else (I'd find someone else to play with, go play with somebody).
4 General play - be with other child, ask them to play, (for subject as provocateur say I'm sorry).

5 Very active, highly assertive, implies taking an active role immediately. This code does not involve the degree of "Friendliness" of a particular response, so that responses such as "I would go over and pick up his toy and show him how to play with me" and "I would hit him" can both be scored here because both responses are very active and assertive.

Sophistication/relevance/circumspection (Blank labeled "Sophisticated" on score sheet)

A sophisticated, relevant response is one that makes use of environmental and social cues (as presented in the vignette) in the framing of a strategy and is mature and elaborated. An unsophisticated response is one that is so vague or general that it could be equally applicable to any situation, or of unlikely relevance to the current situation. This coding takes into account how well the child's responses fit into the information that is presented in the vignettes.

1 Irrelevant and vague, so vague as to be applicable or inapplicable to any story; e.g., 'just be nice' - responses are not sophisticated and are not likely to be effective.

2 General and vague but with some loose connection to the story; e.g., ask to play with (a certain prop) again. The distinction between a response scored as a one and a response scored as a two is that, although both responses are vague and general, a response scored as a two does contain some reference to the particular story, and so is more relevant. For example, the child says "I'd be the friend of the girl with the pig."

3 Slightly relevant: Ask to play when she is through, tell her it is too my turn, just take it cause I had it first OR somewhat relevant but likely to be very ineffective (when child cannot play because there are only two shovels child says "since there aren't any shovels I'd pick up that bucket there and bop the kid on the head and take his shovel," or when the child says "I'd find somebody else to play with").

4 Child's response is relevant to the situation OR mature and elaborated, but not both. For example, child suggests that when the other kid gets up to go to the bathroom, he or she will quickly take the toy or piano. This is relevant, but not mature. Another example, child says he would play with the blocks with the other kids (who say they only have 2 farm animals). This uses relevant information but is not elaborated or very specific. Another example, a child says he would like ask the kids when they'll be done and watch the clock for the time to come for his turn. This is a mature strategy that is elaborated but does not use relevant cues (unless time and time keeping have figured into the story somehow). Another example, after peer spills juice child says "I'd get up so that the juice wouldn't get me." This is relevant but not mature. Another example, in subject as provocateur, child says "I'm sorry" this is relevant, but not elaborated.

5 Extremely relevant and circumspect, mature and elaborated. Child identifies cues that most others miss and uses these to devise a strategy. For instance, the child identifies specific toys that are used as props or shown in the line drawings and suggests ways those toys can be incorporated into the play of others.

Friendly (prosocial or beneficial to peer) vs hostile (harmful to peer) (blank labeled "prosocial" on score sheet).

1 Responses that include direct physical or verbal aggression toward the other child. For example "I'd kick him," "I'd call him a jerk," "I'd knock over her paint," "I'd say 'I'm not your friend anymore."

2 This category is for threats and responses where the child suggests seeking out an adult who would punish the other child. Examples of threats: "you better let me play," "you better not do that again." Examples of adult punish: "I'd tell my mom to spank him," "I'd tell the teacher not to give him a snack." If the child simply says "I'd tell the teacher" it is not scorable as a 2. The interviewer needs to prompt "what would you want the teacher to do?" to discover if the child

wants the adult to punish the child in some way. If the child does not suggest that the adult punish the provocateur, the response is scored as a 3. Responses that request or demand that the other child do something specific are scored as a 2. For example, "stop that," "don't do that again," "listen to me."

3 Included are suggestions that the child would ask an adult to intervene on his/her behalf, not punish the other child (see category 4). EX. "I'd ask my mom to get them to let me play." Also included are responses in which the child would not do or say anything to the provocateur. For example, "I wouldn't do anything," "I'd clean off my shirt," "I'd play somewhere else." Any response the child gives that is not directed toward the other child in the story is scored a

_____

4 Reflects a response in which the child suggests making a comment to the other child or asking a question, but does not ask the other child to do something specific. For example, "I'd ask him why he did it," "I'd ask them again," "I'd say 'I didn't like that'."

5 Represents responses that are friendly or helpful to the peer. Score responses that are friendly or prosocial here ("I would share," "I would try to be friends," "I'd be nice to her") as well as responses that are helpful to the peer ("I'd help her clean it up," "I'd tell her that it's O.K., don't feel bad").

If the child's response contains a combination of the above categories, score the response as the lower of the categories. For example, if a child says "I'd call her a bad name and tell her to stop it," score the response as a one. If you are not sure which category a response fits into due to a lack of information (ex. "I'd feel mad"), prompt the child until you are sure that you can score the response: "What would you do" and "why would you do that" are general prompts to get more information. Remember to repeat the response verbatim for the audiotape. Also, be sure to include nonverbal behavior. For example, the child hits the picture of the boy taking a crane. The interviewer would say something like "so you'd hit the boy who took the crane, is that what you'd do?"

Enactive Interview Scoring

CHILD_____ INTERVIEWER_____ DATE_____

STORY #	Verbatim Response and Description of Child's Actions	With (0,1)	Hostile=(0,1)	Soph=5 vs Vague=1

Line-drawing based Interview Scoring

CHILD_____ INTERVIEWER_____ DATE_____

STORY #	Verbatim Response and Description of Child's Actions	with (0,1)	Hostile (0,1)	Soph=5 vs Vague=1

APPENDIX H:

TEACHER=S CHECKLIST OF PEER RELATIONS

Child=s name: _____ Teacher=s name: _____

Teacher=s Checklist of Children=s Peer Relationships

For each of the following statements, please circle the number that best applies. Use the following scale to determine the most applicable number.

Circle 1 if this statement is never true of the child.
Circle 2 if this statement is rarely true of the child.
Circle 3 if this statement is sometimes true of the child.
Circle 4 if this statement is usually true of the child.
Circle 5 if this statement is almost always true of the child.

Peer Relations

1. This child gets along well with peers of the same sex.	1 2 3 4 5
2. This child gets along well with peers of the opposite sex.	1 2 3 4 5
3. This child isolates her/himself from the peer group.	1 2 3 4 5
4. This child is accepted by the peer groups.	1 2 3 4 5
5. Other children like this child and seek him/her out for play.	1 2 3 4 5
6. Other children actively dislike this child and reject her/him from play	1 2 3 4 5

Aggression

7. This child starts fights with peers.	1 2 3 4 5
8. This child gets into verbal arguments with peers.	1 2 3 4 5
9. This child says mean things to peers, in teasing and name calling.	1 2 3 4 5
10. This child refuses to share with peers.	1 2 3 4 5
11. This child disrupts the peer group by inappropriate or inattentive behavior	1 2 3 4 5

Teacher=s Assessments of Children=s Social Skills

How good is the child at each of the following skills? Circle the appropriate response. Use the following scale in answering:

Circle 1 if this child is very poor at this skill most of the time.
Circle 2 if this child performs somewhat poor at this time
Circle 3 if this child performs about average
Circle 4 if this child performs well at this skill.
Circle 5 if this child performs very well at this skill.

1. Understanding others= feelings.	1 2 3 4 5
2. Being socially aware of what is happening in a situation	1 2 3 4 5
3. Accurately interpreting what a peer is trying to do.	1 2 3 4 5
4. Refraining from over-impulsive responding	1 2 3 4 5
5. Generating many solutions to interpersonal problems	1 2 3 4 5
6. Generating good quality solutions to interpersonal problems	1 2 3 4 5
7. Being aware of the effects of his or her behavior on others.	1 2 3 4 5

APPENDIX I:

PRESCHOOL SOCIO-AFFECTIVE PROFILE - SHORT FORM

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CHILD ID

P S P

PRESCHOOL SOCIO-AFFECTIVE PROFILE

CHILD'S NAME

BIRTH DATE

ETHNICITY

TEACHER'S NAME

PRESCHOOL

DATE PSP WAS COMPLETED

CHILD ID

Here is a list of behaviors that you may observe when the child is in your cared. Please circle the number that reflects the frequency of the behavior that you observe for the child according to the following continuum: The behavior occurs **NEVER** (1), **SOMETIMES** (2 or 3), **OFTEN** (4 or 5) or **ALWAYS** (6). For those exceptional cases that are impossible to evaluate please check **CANNOT EVALUATE.**

		ot		Never	Sometimes	Often		Always
	Evaluate							
1.	Maintains neutral facial expression (doesn't smile or laugh	1	2	3	4	5	6	
2.	Tired		1	2	3	4	5	6
3.	Easily frustrated		1	2	3	4	5	6
4.	Gets angry when interrupted		1	2	3	4	5	6
5.	Irritable, gets mad easily		1	2	3	4	5	6
6.	Worries		1	2	3	4	5	6
7.	Timed, afraid (e.g., avoids new situations)		1	2	3	4	5	6
8.	Sad, unhappy or depressed		1	2	3	4	5	6
9.	Inhibited or uneasy in		1	2	3	4	5	6
	the group							
10.	Screams or yells easily		1	2	3	4	5	6
11.	Forces other children to do things they don't want to do		1	2	3	4	5	6
12.	Inactive, watches the other children play		1	2	3	4	5	6
13.	Negotiates solutions to conflicts with other children		1	2	3	4	5	6
14.	Remains apart, isolated from the group		1	2	3	4	5	6

CHILD ID

ot

	Evaluate	Never		Sometimes		Often	Always
15.	Takes other children and their points of view into account	1	2	3	4	5	6
16.	Hits, bites or kicks other children	1	2	3	4	5	6
17.	Cooperates with other children	1	2	3	4	5	6
18.	Gets into conflicts with other children	1	2	3	4	5	6
19.	Comforts or assists another child in difficulty	1	2	3	4	5	6
20.	Takes care of toys	1	2	3	4	5	6
21.	Doesn't talk or interact with peers during group activities	1	2	3	4	5	6
22.	Attentive towards younger children	1	2	3	4	5	6
23.	Goes unnoticed in group	1	2	3	4	5	6
24.	Works easily in group	1	2	3	4	5	6
25.	Hits teacher or destroys things when angry with teacher	1	2	3	4	5	6
26.	Helps with everyday tasks (e.g., distributes snacks)	1	2	3	4	5	6
27.	Accepts compromises when reasons are given	1	2	3	4	5	6
28.	Opposes the teacher's suggestions	1	2	3	4	5	6
29.	Defiant when reprimanded	1	2	3	4	5	6
30.	Takes pleasure in own accomplishments	1	2	3	4	5	6

PSP Items used to compute composite measures of Prosocial, Withdrawn, and Aggressive Behavior in the current work.

Prosocial Behavior:

Negotiates solutions to conflicts with other children

Takes other children and their points of view into account

Cooperates with other children

Comforts or assists another child in difficulty

Attentive towards younger children

Accepts compromises when reasons are given

Withdrawn Behavior:

Inhibited or uneasy in the group

Remains apart, isolated from the group

Doesn=t talk or interact with peers during group activities

Goes unnoticed in group

Aggressive Behavior:*

Forces other children to do things they don=t want to

Hits, bites, or kicks other children

Gets into conflicts with other children

* note: In the current study, the three aggression items from the PSAP were combined with the aggression items from the TCPR to form a single index of aggressive behavior.